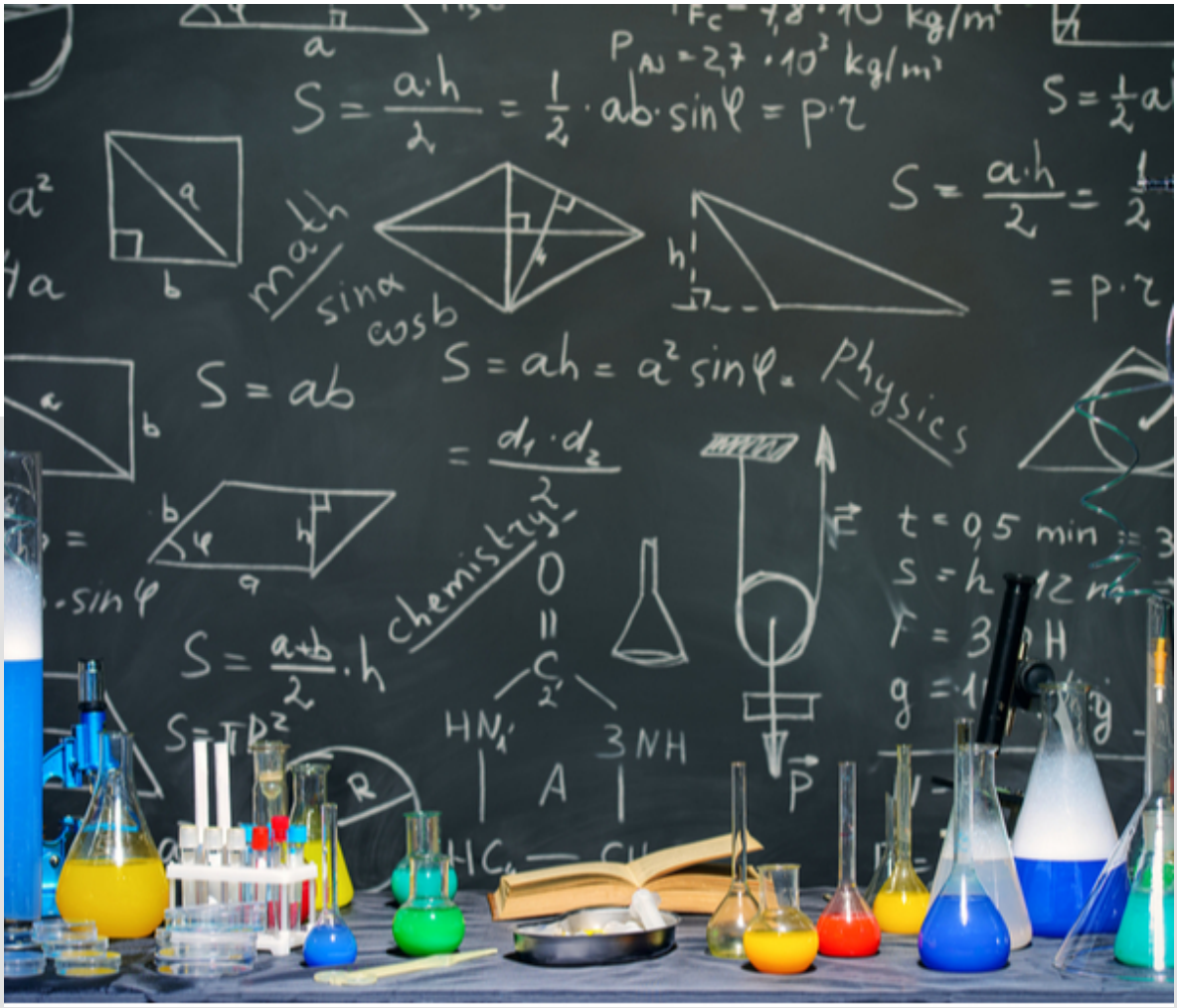
High School Science Fair



Unit Overview

High School Science Fair

This unit explores scientific inquiry, the scientific method and famous scientists. Students learn a simplified scientific method and use it to participate in a variety of scientific investigations, including a science fair project.

: **Portions of this lesson collect student daily performance data.**

Science Connection
High School Science Fair

Unit 22

HIGH SCHOOL
Scientific Inquiry

Instructional Targets

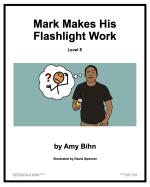
Science Standards for Scientific Inquiry

- Identify questions to guide scientific investigations.
- Conduct simple scientific investigations.
- Use tools to gather data and information.
- Analyze and interpret data.
- Communicate and support findings.

Differentiated Tasks

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• Follow steps of a scientific process related to grades 9-12 science topics.	• With support, follow steps of a scientific process related to grades 9-12 science topics.	• Actively participate in a scientific process related to grades 9-12 science topics.

Standards Connection



Mark Makes His Flashlight Work

In this unit, students learn about scientific inquiry and the scientific method. The Leveled Book illustrates how a problem can be solved. Mark tests different light bulbs and batteries to get his flashlight to work. Throughout the month, encourage students to use the scientific method to solve problems by observing, asking questions, making a guess, doing an experiment, collecting data and finding a conclusion.

What Is Science?

The Chapter Book introduces and explains the scientific method and how scientists have used it to make discoveries. Chapter 1 introduces students to the five steps of the scientific method. Chapters 2-6 discusses how five famous scientists used the scientific method to invent something or learn something new. The chapter book covers five scientists: Thomas Edison, James West, Mary Jackson, Stephen Hawking and Jane Goodall. Throughout this unit, have students identify how they can be scientists by using the steps in the scientific method to learn more information.

Life Skills Applications

The life skills applications focus on different skills students can learn from the scientists discussed in the Chapter Book. Students practice daily living skills when they learn how to change a light bulb and use a toaster safely. Students learn employability skills when they practice keeping a record of classroom jobs and learn how to safely work with animals. Students practice personal life skills when they learn question words and ask questions as well as practice communicating through text message.

Let's Have a Science Fair

A science fair is a fun way to have students apply their learning from this unit. In Lesson 28, students choose and complete a science fair project. Throughout the unit, work with students to plan a class science fair. Choose a date, make plans for how and when students will work on their projects and talk with students about ways they might present their projects. When the day of the fair arrives, invite parents or other classes to come and see students' projects.

The **n2y Library** has several books that may extend understanding of science concepts in this unit:

- ***Simon Goes to a Science Fair*** (Level E) describes a science fair and what to see there.
- ***Thomas Edison: Time Traveling Twins*** (Level J/K) looks at the life and inventions of Thomas Edison.
- ***Galileo*** (Level F/G) explains Galileo's contributions to the scientific method.
- ***Simon's Five Senses*** (Level H/I) Follows Simon as he learns about and uses his five senses.

Lesson 1 - Leveled Book

Mark Makes His Flashlight Work

1

Instructional Targets

Reading Standards for Literature

- ***Range and Level of Text Complexity:*** Experience grade level and age-appropriate literature materials, including poems, plays, biographies, chapter books and fiction works that are adapted to student reading level.

Differentiated Tasks

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• Independently read literature forms, including chapter books, biographies, poems, plays and fiction works that have been adapted to student reading level.	• Read supported and shared literature forms, including chapter books, biographies, poems, plays and fiction works that have been adapted to student reading level.	• Actively participate in supported reading of literature forms, including chapter books, biographies, poems, plays and fiction works that have been adapted to student reading level.

Topic Connection

Throughout this unit, students learn about the scientific method used in science experiments to learn new information. This unit's Leveled Book, ***Mark Makes His Flashlight Work***, introduces students to the idea of doing experiments or tests when they have a problem.

Topic Words

problem*	scientist	test
question*	solve	

Literacy Words

author	illustration/picture*	story*
book	illustrator	title
cover	read*	

* Power Words

Benchmark Assessments

- Reading Level Assessment and all Benchmark Assessments in the Reading section of the GPS.
- Phonemic Awareness Phoneme Blending
- Early Emerging Reading Rubric

Unit Checkpoint Assessments

- Level 2-3 Reading
- Level 1 Combined Content, Questions 3 and 4

An informal assessment of a verbal student's reading abilities may be obtained using the Unit Tools: Reading Observation.

Lesson at a Glance

	Activity 1	Activity 2	Activity 3	Activity 4
Instructional Activities	Read Aloud 1	Read Aloud 2	Guided/Shared Reading	Self-Selected Reading
See how these activities fit into the **Suggested Unit Pacing**.				
ULS Materials and Resources	***Mark Makes His Flashlight Work*** (Level E) **Communication Board** **Adapted Book: *Mark Makes His Flashlight Work*** **Adapted Book Instructional Page**		***Mark Makes His Flashlight Work*** (Levels E, C and aa) ***Communication Board***	**n2y Library Books** **Standards Connection**
	Instructional Guide: Active Participation Scripts **SymbolStix PRIME** **L³ Skills: Language Arts Skills**			
Additional Materials	Books from the school or classroom library to use for self-selected reading.			

Instructional Targets

Reading Standards for Literature

- ***Range and Level of Text Complexity:*** Experience grade level and age-appropriate literature materials, including poems, biographies, chapter books, fiction and nonfiction works, that are adapted to student reading level.

Instructional Routine

Before Reading

- Use Lesson 15, Activity 3 to introduce and review the Topic Words: problem, question, scientist, solve and test.
- Continue talking about science. Ask a focus question such as, "What things do we study in science?" Discuss student responses.
- Display ***Mark Makes His Flashlight Work*** (Level E) and read the title, author and illustrator's names.
- Preview the book. Introduce the character Mark. Point out the illustration of the flashlight that does not work on page 1. Say, "It looks like the flashlight does not work. As I read today, it is your job to find out what Mark uses to make the flashlight work."
- Review the learning goal with students: **I will find out what Mark uses to make the flashlight work.**

During Reading

Model Fluent Reading

- Read aloud with fluency and expression.
- Call attention to Mark observing what is happening by emphasizing the word 'look' as you read.

Comment on Characters, Setting and Events

- Think aloud about what Mark uses to get the flashlight to work. Point out the illustrations on page 2 of the various sizes of light bulbs. Say, "The flashlight needs a light bulb to work. Mark tries different light bulbs until he finds the right one." Then point out the illustrations on page 6 of the different batteries. Discuss how Mark tries various batteries until he finds the right one as well.
- Note: You may use the Adapted Book to help provide students with a multisensory experience if needed. See the Adapted Book Instructional Page for more information and strategies on how to use the Adapted Book.

After Reading

- Revisit the learning goal. Ask, "How does Mark get his flashlight to work?"

Level 3: Have the student independently describe what Mark uses to make the flashlight work. Provide prompts such as, "What does Mark put into the flashlight?"

Level 2: Have the student identify what Mark uses to make the flashlight work by completing the following sentence frame: Mark adds a ____ to get the flashlight to work. Picture supports such as the Communication Board may be used as needed.

Level 1: Have the student complete the sentence frame from Level 2 by making a selection from a narrowed field or errorless choice(s).

- Continue the discussion by asking students why batteries and light bulbs come in different sizes.

Check Understanding

- **Level 3:** Can the student independently describe what Mark uses to make the flashlight work?
- **Level 2:** Can the student identify what Mark uses to make the flashlight work using picture supports as necessary?
- **Level 1:** Can the student identify a light bulb or a battery by making a selection from a narrowed field or errorless choice(s)?

Instructional Targets

Reading Standards for Literature

- ***Range and Level of Text Complexity:*** Experience grade level and age-appropriate literature materials, including poems, biographies, chapter books, fiction and nonfiction works, that are adapted to student reading level.

Instructional Routine

Before Reading

- Display ***Mark Makes His Flashlight Work*** (Level E) and read the title, author and illustrator's names.
- Prompt recall of the story by asking a focus question such as, "What does Mark do to get the flashlight to work—throw it or add a battery?"
- Point out to students that Mark has a problem. His flashlight does not work. Say, "As I read today, it is your job to remember the steps Mark uses to solve his problem."
- Review the learning goal with students: **I will remember the steps Mark uses to solve his problem.**

During Reading

Build Fluency

- Continue reading aloud to model fluent reading, or invite students to read portions of the text aloud.

Build Comprehension

- Point out the problem symbol on page 1 of the book. Discuss how just like a scientist, people ask questions and try different ways to make things work. For example, say, "What does Mark do when he realizes the flashlight does not work? He asks a question. He asks, 'How can I make the flashlight work?' This is what a scientist does when he or she does not know the answer to a problem."
- Talk with students about what Mark does after he asks the question. Mark tries multiple things to get the flashlight to work. Use the illustrations to discuss the different sizes of light bulbs and batteries. Notice how Mark does not give up. He asks a question and then works until he finds the answer. Ask, "What do you do when you do not know the answer to a question?"
- Note: You may use the Adapted Book to help provide students with a multisensory experience if needed. See the Adapted Book Instructional Page for more information and strategies on how to use the Adapted Book.

After Reading

- Revisit the learning goal. Ask, "What steps does Mark use to solve his problem?"

Level 3: Have the student describe in his or her words what steps Mark uses to solve his problem. Provide a prompt, such as "What did Mark do with the light bulbs?"

Level 2: Have the student identify one step Mark uses to solve his problem. Picture supports such as the Communication Board or the story illustrations may be used as needed. Provide a prompt, such as "Mark asks a ____ when his flashlight does not work."

Level 1: Have the student identify one step Mark uses to solve his problem by making a selection from a narrowed field or errorless choice(s). For example, display the symbols for 'question' and 'try', say, "Show me what Mark does to solve his problem."

- Continue the discussion by talking about reasons for asking questions. Ask, "Why do we ask questions? What do we do if we do not get an answer?"

Check Understanding

Level 3: Can the student describe what steps Mark uses to solve his problem?

Level 2: Can the student identify one step Mark uses to solve his problem? How?

Level 1: Can the student identify one step Mark uses to solve his problem by making a selection from a narrowed field or errorless choice(s)?

Instructional Targets

Reading Standards for Literature

- ***Range and Level of Text Complexity:*** Experience grade level and age-appropriate literature materials, including poems, biographies, chapter books, fiction and nonfiction works, that are adapted to student reading level.

This Leveled Book is presented in three leveled formats: Level E, Level C and Level aa. Select the level of book and the reading routine appropriate for each student.

Instructional Routine
Guided Reading or

Before Reading	• Introduce the book by having students share what they have learned about science and solving problems. • Use the following Topic Words in conversation about the book: problem, question, scientist, solve and test. Have students locate the words in the book. • Read the first three pages aloud, introducing students to the structure of the language. • Review the learning goal with students: **I will read a story.**
During Reading	• Listen as students read quietly to themselves. • Monitor fluency. • Model, prompt or support use of skills and strategies.
After Reading	• Revisit the learning goal and talk with students about the book. • Have students locate the High-Frequency Words: ask, idea, look, not, too and work.

Instructional Routine
Shared Reading or

Before Reading	• Introduce the book by having students share what they have learned about science and solving problems. • Use the following Topic Words in conversation about the book: problem, question, scientist, solve and test. Help students locate the words in the book. • Review the learning goal with students: **I will read a story.**
During Reading	• Read aloud while students follow along. • Provide supports that allow students to join in the reading. Supports may include choral reading, echo reading or use of a voice output device or eye gaze board. • Monitor print concepts and fluency. • Model and support use of skills and strategies.
After Reading	• Revisit the learning goal and talk with students about the book. • Have students locate the High-Frequency Words: ask, idea, look, not, too and work.

Check Understanding

- **Level 3:** Can the student independently read stories adapted to personal reading level?
- **Level 2:** Can the student read stories adapted to personal reading level with support?
- **Level 1:** Can the student actively participate in reading stories adapted to student ability level? How?

Instructional Target

Reading Standards for Literature

- ***Range and Level of Text Complexity:*** Experience grade level and age-appropriate literature materials, including poems, biographies, chapter books, fiction and nonfiction works, that are adapted to student reading level.

Instructional Routine

	? or
Introduce	• Tell students they will choose a book to read. Ask a focus question such as, "Would you like to read a book about science or solving problems?" Talk with students about their choices. • Explain that when choosing a book, it is important to think about the topic, or what the book is about, as well as how hard or easy the book will be to read. Say, "Today, your job is to choose a book to read." • Review the learning goal with students: **I will choose a book to read.**
Model	• Display 4 to 5 books on various topics written at various levels from the class, school or n2y Library. • Model previewing a book to determine if the topic interests you. For example, read a few pages of one of the books and say, "This book is about _____. I'm not really interested in _____, so I don't think I want to read this book." Then read a few pages of a different book and say, "This book is about _____. I really like _____. I would like to read this book." • Next, model previewing a book to determine whether it is too hard, too easy or just right. For example, read a page aloud, counting the number of mistakes you make. Continue modeling until you find a book that you can read with only 2 to 3 mistakes per page.
Provide Practice	**Level 3:** Have the student choose a book to read from the class, school or n2y Library. Remind the student to ask, "What is this book about? Is this book too hard, too easy or just right?" **Level 2:** Have the student choose a book to read from the class, school or n2y Library. Provide visual supports as necessary. **Level 1:** Using the student's interests and independent reading level as a guide, provide the student with a field of 2 to 3 appropriate books from which to choose. Have the student use his or her active participation mode to select a book to read.
Review	• Revisit the learning goal. Guide students to recall two things to think about when choosing a book to read.
Extend	• To extend this lesson, use the Standards Connection to compare the similarities and differences of literature across various mediums. Select a movie, poem, song, play, website or article with a similar topic, character or event to compare.

Throughout the Unit

- Engage students in self-selected reading using the reading routine appropriate for each student. Reading routines may include: partner reading (with an adult or peer), shared reading or supported reading.
- Meet with individual students to discuss the books they are reading. Ask questions such as, "Do you like this book? Why or why not? Is this book too easy, too hard or just right? Do you have any questions about this book?"

Check Understanding ?

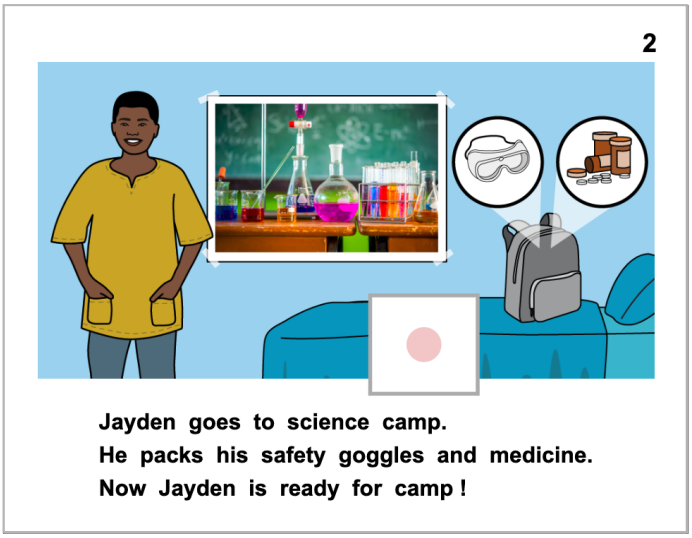
- **Level 3:** Can the student choose appropriate books for independent reading? How?
- **Level 2:** Can the student choose appropriate books to read with supports? How?
- **Level 1:** Can the student choose a book from a field of 2 to 3 choices using an active participation mode? How?

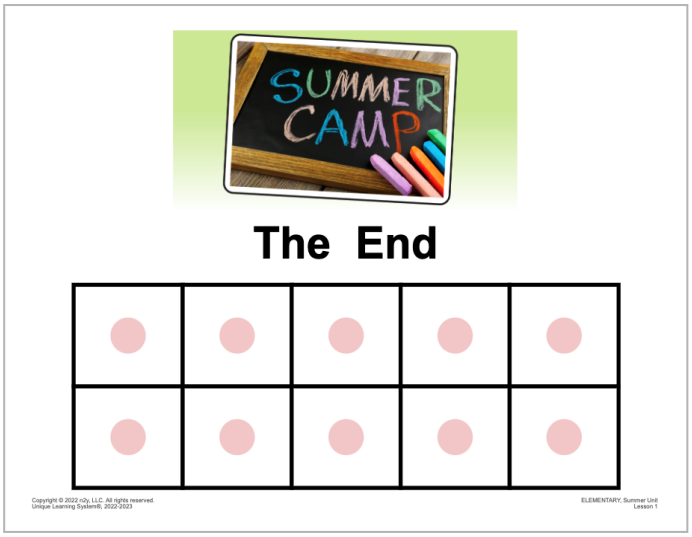
Adapted Book Instructional Page

Support students' comprehension and ability to connect with a text by adapting the Leveled Book. Students' comprehension increases when they are able to interact with a story or text using multiple senses. An adapted book is provided in the Leveled Book PDF. As you read the book as a class, small group or with an individual student, have the student match the Picture Card to the correct page to build comprehension and maintain attention to the book during a read aloud.

Tips for using an Adapted Book

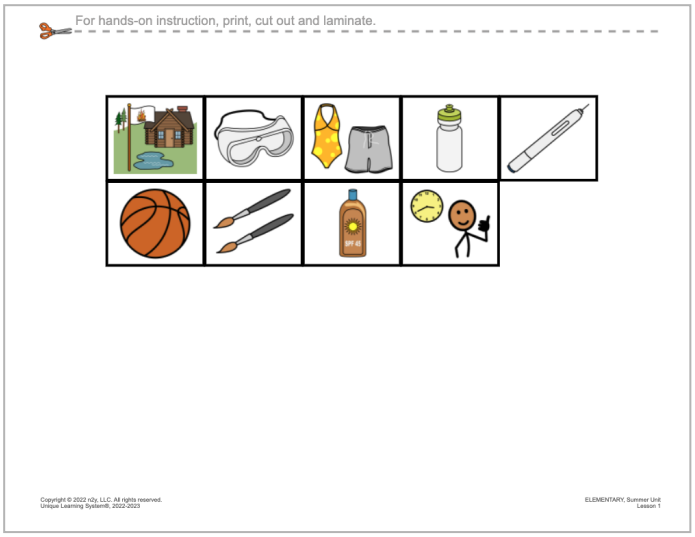
- Print out the book pages and the page of Picture Cards.
- Laminate all pages that students will use to increase durability.
- Use book binding materials such as spiral binding, a three ring binder or folder to put the book together.
- Place hook and loop fasteners or tacky glue on the pink dot in the white box on each page.
- Cut out the Picture Cards and store them on the last page using hook and loop fasteners or tacky glue.
- While reading, present the student with one or more cards. (Determine number based on the student's needs.)
- Talk to the student about how the picture on the card relates to the text or illustration.





Based on your students' needs, consider other ways of adapting the book.

- Use objects instead of Picture Cards.
- Add texture to Picture Cards using puff paint, hot glue, yarn, wax-coated yarn sticks or fabric.
- Make images larger or adjust contrast.
- Add physical supports to help students turn pages (clips, page fluffers, glue to cardboard, etc.).
- Add fragrances to Picture Cards or use fragrant objects to access other senses.



For more information on adapted books, read the following article located on the n2y website:
Adapting Books to Increase Accessibility: A Multisensory Approach

Instructional Targets

Reading Standards for Literature

- ***Integration of Knowledge and Ideas:*** Compare and contrast various artistic mediums (i.e., poetry, song, play, movie, etc.) of literature with similar topics, characters or events.

Standards for Speaking and Listening

- ***Comprehension and Collaboration:*** Identify information from multiple sources that contribute to making a decision.

Differentiated Tasks

Level 3 Students will...

- Describe similarities and differences in the plot, events and characters between reading a story and experiencing a multimedia version of a similar story line.
- Obtain information from two or more sources to reach a personal decision.

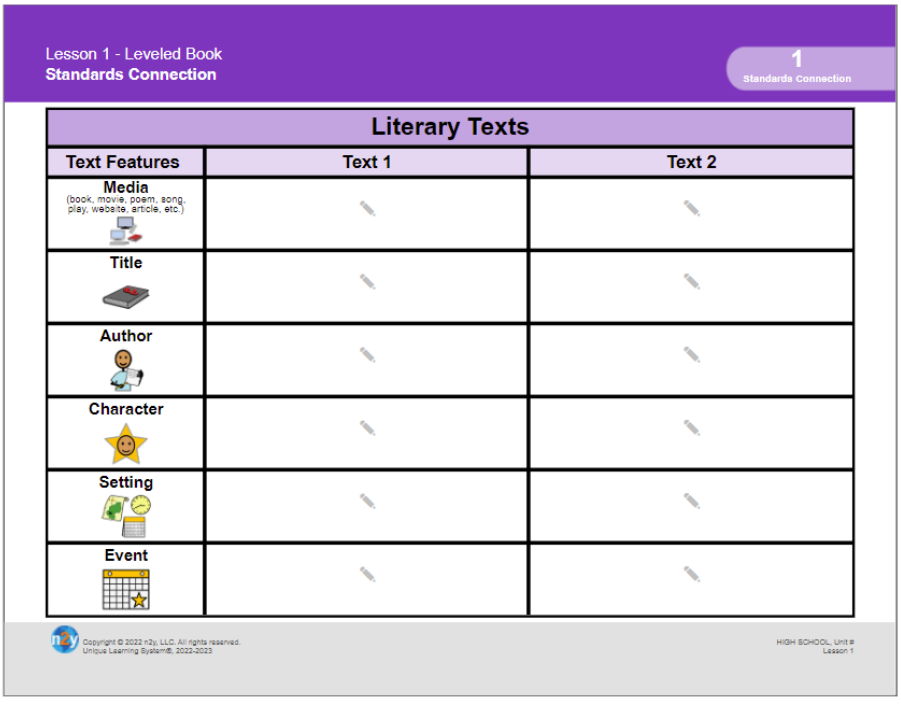
Level 2 Students will...

- With support, identify similarities and differences in the plot, events or characters between reading a story and experiencing a multimedia version of a similar storyline, character or event.
- Gather and compare information from two sources.

Level 1 Students will...

- When presented with illustrations of a character or an event from one story, select a matching character or event from a similar story.
- Make a choice when presented with two informational choices.

This activity provides an opportunity to think about the variety of ways we experience literature and common characters, settings and themes and compare them with others. Have students choose two different literature texts from different mediums with similar topics, people or events. Then have them use the Literary Text Chart, to identify similarities and differences between the two texts.



Lesson 1 - Leveled Book
Standards Connection

1
Standards Connection

Literary Texts		
Text Features	**Text 1**	**Text 2**
Media (book, movie, poem, song, play, website, article, etc.)		
Title		
Author		
Character		
Setting		
Event		

HIGH SCHOOL, Unit #
Lesson 1

Lesson 2 - Read and Comprehend
Leveled Book Comprehension

2

Instructional Target

Reading Standards for Literature

- ***Key Ideas and Details:*** Use strong textual evidence to answer explicit questions about the main ideas and details (character, plot, setting) of a story, play or poem. Objectively summarize a story, play or poem including main characters, events and key details. Analyze how the main idea, characters, setting and plot of a story, play or poem support a theme and its development. Determine one or two themes of a story, play or poem.

Differentiated Tasks

Level 3 Students will...

- Independently answer explicit questions about a story, play or poem using strong textual evidence.
- Independently summarize a story, poem or play without using personal opinions.
- Independently identify examples of the main idea and key details from a story, play or poem that support the development of a theme.
- Independently identify one or two themes of a story, play or poem.

Level 2 Students will...

- Select pictures or text to answer an explicit question about a story, play or poem.
- Summarize the theme/central idea of a story, play or poem using no personal opinions with support.
- With support, identify examples of the main idea and key details from a story, play or poem that support the development of a theme with support.
- Identify the theme of a story, play or poem by pointing to pictures or text.

Level 1 Students will...

- Select pictures or text from a story, play or poem to answer an explicit question through an active participation response (e.g., voice output device, eye gaze choice board).
- Summarize the theme/central idea of a story, play or poem through an active participation response (e.g., voice output device, eye gaze choice board).
- Identify examples of the main idea and key details from a story, play or poem that relate to the development of a theme through an active participation response (e.g., voice output device, eye gaze choice board).
- Identify the theme of a story, play or poem through an active participation response (e.g., voice output device, eye gaze choice board).

Topic Connection

Throughout this unit, students learn about science and how we learn new things about the world through the scientific method. In this lesson, the Leveled Book, ***Mark Makes His Flashlight Work***, addresses the scientific method and the process of trying to find out new information using science.

Topic Words

problem*	scientist	test
question*	solve	

Literacy Words

answer	character	question
book	detail	story*

* Power Words

Benchmark Assessments

- Reading: Reading Level Assessment
- Reading: Listening Comprehension
- Emerging Skills: Early Emerging Reading Rubric

Unit Checkpoint Assessments

- Level 2-3, Content Understanding
- Level 1, Reading, Questions 1-3 and 8-12

Lesson at a Glance

	Activity 1	Activity 2
Instructional Activities	Answer Questions	Comprehension
See how these activities fit into the **Suggested Unit Pacing** .		
ULS Materials and Resources	***Mark Makes His Flashlight Work*** (Level E) **Comprehension Questions** (Levels 3-1) **Fill-In Cards**	***Mark Makes His Flashlight Work*** (Level E) **Main Idea and Details Chart** (Level 3, Level 2, Level 1) **Sequencing Cards** **Standards Connection A** **Standards Connection B**
	Instructional Guide: Active Participation Scripts **Instructional Guide: Instructional Tips** **SymbolStix PRIME**	
Additional Materials		

Instructional Target

Reading Standards for Literature

- ***Key Ideas and Details:*** Use strong textual evidence to answer explicit questions about the main ideas and details (character, plot, setting) of a story, play or poem.

Instructional Routine

or

Introduce	• Reread the highest level of the Leveled Book, ***Mark Makes His Flashlight Work***, as directed in Lesson 1. Then introduce this activity by asking a focus question about the book. For example, ask, "Did you like this story?" Discuss students' responses. Explain that there is no right or wrong answer to this question; some students may like the story and some may not. • Tell students they will now answer other questions about the story, ***Mark Makes His Flashlight Work***. Explain that the answers to these questions can be found in the story. Say, "I am going to ask you questions about the story. Your job is to answer the questions. You can use the story to help you." • Review the learning goal with students: **I will answer questions about a story.**
Model	• Display the Comprehension Questions (vary the level displayed according to students' needs) and read the first question aloud. Model using the story to answer the question. • Model marking or selecting your answer on the Comprehension Questions page.
Provide Practice	***Choose the most appropriate activity format on the basis of each student's skills and needs.*** **Level 3:** The questions are text only. Have the student answer the questions independently. **Level 2:** The questions are text only and the answers are symbol-supported. Have the student answer the questions by selecting a picture. **Level 1:** The questions are written in a symbol-supported sentence strip format. Have the student answer the questions by selecting from a narrowed field or errorless choice(s).
Review	• Revisit the learning goal. Talk with students about where they found the answers to the questions. Point out that answers to questions can usually be found in the text or pictures.

Check Understanding

- **Level 3:** Can the student independently answer questions about the story?
- **Level 2:** Can the student answer questions about the story by selecting a picture?
- **Level 1:** Can the student answer questions about the story by selecting a picture? How many choices were presented?

Instructional Targets

Reading Standards for Literature

- ***Key Ideas and Details:*** Use strong textual evidence to answer explicit questions about the main ideas and details (character, plot, setting) of a story, play or poem. Objectively summarize a story, play or poem including main characters, events and key details. Analyze how the main idea, characters, setting and plot of a story, play or poem support a theme and its development. Determine one or two themes of a story, play or poem.

Instructional Routine

or

Introduce	• Review the Leveled Book by asking a focus question. For example, ask "What does Mark fix?" Discuss students' responses. • Explain that stories have many different parts. The main idea is what the story is about. The details give more information about the story and support the main idea. The theme is an important idea or lesson from the story. • Tell students, "Today, your job is to find the main idea and an important idea or lesson from the story and put details from the story in order." • Review the learning goals with students: **I will find the main idea and an important idea or lesson from the story. I will put details from the story in order.**
Model	• Display the Main Idea and Details Chart. Three levels of the Chart are provided: Level 3 (Text Only), Level 2 (Single Symbol-Support) and Level 1 (Symbol-Supported). Display the level that meets the majority of the students' needs. • Using the Leveled Book, discuss the characters and main idea of the story. For example, ask, "Who is the main character in the story? What was the story about?" Model selecting the main character and main idea to complete the Main Idea and Details Chart. • Continue using the Leveled Book to discuss details in the story. Use the Sequencing Cards to model adding details to the Main Idea and Details Chart in the correct order. For example, say, "In the beginning of the story, the first detail, character or event was _____. The event was _____." Select the appropriate Sequencing Card to complete the Key Details chart. • Complete the Main Idea and Details Chart by discussing an important idea or lesson from the story. Model choosing the correct message. For example, ask, "What is an important idea or lesson to be learned from this story?" Model selecting the correct message. Discuss the completed chart.
Provide Practice	***Provide students with appropriate Main Idea and Details Chart, Sequencing Cards and Leveled Book.*** **Level 3:** Have the student summarize the story, including main idea and important idea or lesson and describe the plot by putting events in order on the Main Idea and Details Chart. **Level 2:** Have the student use picture supports to retell key details, characters and events from the story in order by completing the Main Idea and Details Chart. **Level 1:** Have the student retell key details or characters from a story through an active participation response and select a picture to identify an event from a story using the Main Idea and Details Chart, from a narrowed field or errorless choice(s).
Review	• Revisit the learning goal by reviewing the completed Main Idea and Details Chart. Talk with students about how they know the main idea of the story.
Extension	• Use the Standards Connections to analyze a poem about this month's theme. Suggestions for poems can be found in the Supplemental Reading List. When selecting a poem, be sure it includes at least one example of the literary devices listed in Poetry Clues Guide 2.

Check Understanding

- **Level 3:** Can the student summarize the story, including the main idea and an important idea or lesson, and describe the plot by putting events in order on the Main Idea and Details Chart?
- **Level 2:** Can the student use picture supports to retell key details, characters and events from the story in order by completing the Main Idea and Details Chart?
- **Level 1:** Can the student retell key details or characters from a story through an active participation response and select a picture to identify an event from a story using the Main Idea and Detail chart from a narrowed field or errorless choice(s)?

Questions and Answers

light bulb **scientist** **flashlight** **problem** **test**

Fill-In

1. There is a _____. (problem)
2. The flashlight needs a _____. (light bulb)
3. Mark runs a _____. (test)
4. The _____needs to be turned on. (flashlight)
5. Mark was a _____ today. (scientist)

Instructional Targets

Reading Standards for Literature

- ***Craft and Structure:*** Analyze the structure of a story, play or poem to determine how the order of events affect the meaning, mood or style. Identify and compare what is stated directly and what is implied in a story, play or poem.
- ***Range and Level of Text Complexity:*** Experience grade level and age-appropriate literature materials, including poems, plays, biographies, chapter books and fiction works that are adapted to student reading level.

Differentiated Tasks

Level 3 Students will...

- Describe how the placement of events and scenes in a story, play or poem add to the meaning or style with support.
- Compare literal and implied meaning presented in a story, play or poem.
- Independently read literature forms, including chapter books, biographies, poems, plays and fiction works that have been adapted to student reading level.

Level 2 Students will...

- Use picture supports to identify how the placement of events and scenes in a story, play or poem add to the meaning or style with support.
- Identify feelings associated with a story, play or poem with support.
- Read supported and shared literature forms, including chapter books, biographies, poems, plays and fiction works that have been adapted to student reading level.

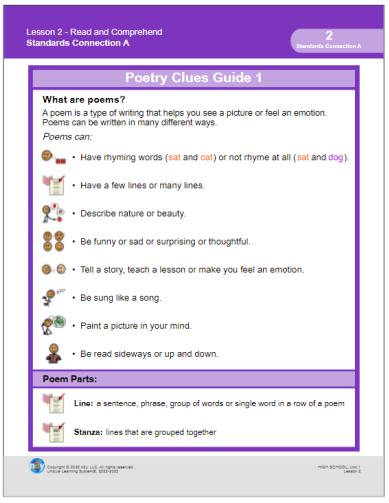
Level 1 Students will...

- Identify a picture representing how the placement of events and scenes in a story, play or poem add to the meaning or style from a narrowed field or errorless choice(s).
- Identify or select a word that has two meanings within the context of a story, play or poem.
- Actively participate in supported reading of literature forms, including chapter books, biographies, poems, plays and fiction works that have been adapted to student ability level.

Understanding poetry is a unique experience. The poet's intent, the reader's understanding and the search for meaning can vary. But a poet can use a variety of tools, including structure and word choice, to aid the reader in discovering the implied meanings in a poem.

This standards connection includes a Poetry Clues Guide and a Poetry Analysis Activity. Select a poem. (See a list of suggested poem titles on the Supplemental Reading List. or use https://poets.org to find a poem related to the monthly unit theme.) Use Clues Guide 1 to review ways a poem may be written, including form and structure, and why poems are written. Read the poem aloud to complete the Poetry Analysis Activity. Multiple readings of poems are encouraged to support students' understanding. Model how to find or pick out an example of poetic structure or implied meaning. For example, after reading the poem, select a phrase to discuss and read the phrase aloud. Then say, "I noticed this phrase while reading. When I read this line, I think it means _____. Now I'll read it again to better understand what the poet means by this, and what they want me to see/feel/hear." Read the line aloud and say, "My deeper understanding is ____."

Many poems are available as recorded readings online and can aid students in the understanding of feelings, rhythm and overall meaning of the poem.


Lesson 2 - Read and Comprehend
Standards Connection A

Poetry Clues Guide 1

What are poems?

A poem is a type of writing that helps you see a picture or feel an emotion. Poems can be written in many different ways.

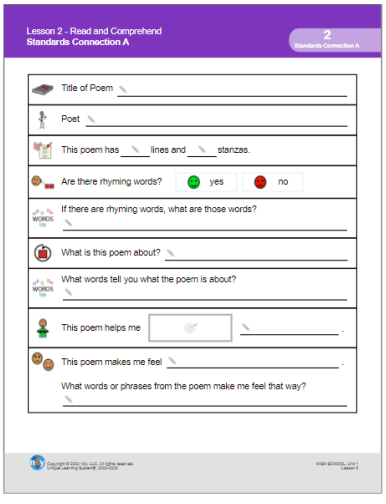
Poems can:

- Have rhyming words (sat and cat) or not rhyme at all (sat and dog).
- Have a few lines or many lines.
- Describe nature or beauty.
- Be funny or sad or surprising or thoughtful.
- Tell a story, teach a lesson or make you feel an emotion.
- Be sung like a song.
- Paint a picture in your mind.
- Be read sideways or up and down.

Poem Parts:

Line: a sentence, phrase, group of words or single word in a row of a poem

Stanza: lines that are grouped together


Lesson 2 - Read and Comprehend
Standards Connection A

Title of Poem

Poet

This poem has ___ lines and ___ stanzas.

Are there rhyming words? yes no

If there are rhyming words, what are those words?

What is this poem about?

What words tell you what the poem is about?

This poem helps me

This poem makes me feel

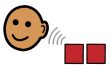
What words or phrases from the poem make me feel that way?

Poetry Clues Guide 1

What are poems?

A poem is a type of writing that helps you see a picture or feel an emotion. Poems can be written in many different ways.

Poems can:



- Have rhyming words (sat and cat) or not rhyme at all (sat and dog).

- Have a few lines or many lines.

- Describe nature or beauty.

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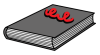
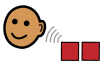


Title of Poem _____

Poet _____

This poem has _____ lines and _____ stanzas.



Are there rhyming words?  yes  no

If there are rhyming words, what are those words?

_____

What is this poem about? _____

What words tell you what the poem is about?

_____

This poem helps me _____ .

This poem makes me feel _____ .

What words or phrases from the poem make me feel that way?

_____

Instructional Targets

Standards for Language

- ***Vocabulary Acquisition and Use:*** Identify and interpret figurative language (e.g., similes, metaphors, personification, hyperbole, paradox, euphemism, oxymoron).

Reading Standards for Literature

- ***Craft and Structure:*** Use context clues and illustrations to determine meanings of words and phrases in a text, including figurative and connotative meanings. Interpret figurative language (e.g., similes, metaphors, idioms, analogies, connotative meanings of word) and determine how it affects the meaning and mood of a story, play or poem.
- ***Range and Level of Text Complexity:*** Experience grade level and age-appropriate literature materials, including poems, plays, biographies, chapter books and fiction works that are adapted to student reading level.

Differentiated Tasks

Level 3 Students will...

- Independently identify the meaning of figurative language using clues from words and sentences.
- Determine literal and figurative meanings of a word as it is used in a text.
- Interpret figurative language and how it changes the way the reader feels in a story, play or poem.
- Independently read literature forms, including chapter books, biographies, poems, plays and fiction works that have been adapted to student reading level.

Level 2 Students will...

- Identify figurative meanings of text with support.
- Point to pictures or words to match words with same meanings in text.
- Select a picture or words to determine the meaning of a word or phrase, with support.
- Read supported and shared literature forms, including chapter books, biographies, poems, plays and fiction works that have been adapted to student reading level.

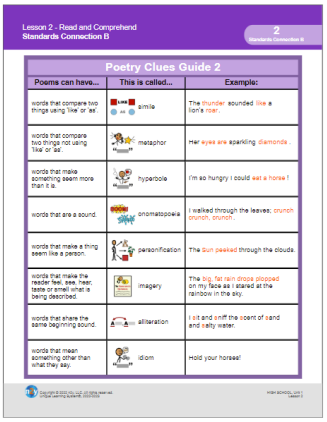
Level 1 Students will...

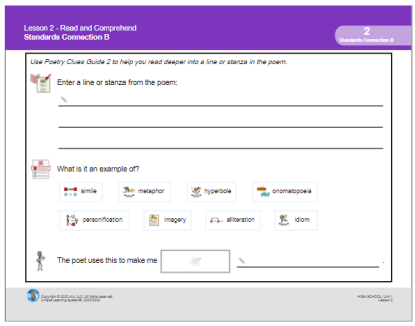
- Make a selection to indicate words or a picture that represents the figurative meaning of text from a narrowed field or errorless choice(s).
- Identify a named picture related to the unit topic from a single option or errorless choice.
- Select a picture or word to match the meaning of a word or phrase from a narrowed field or errorless choice(s).
- Actively participate in supported reading of literature forms, including chapter books, biographies, poems, plays and fiction works that have been adapted to student ability level.

A poet can use a variety of tools, including figurative language and other literary devices, to help illustrate a picture or theme in the reader's mind.

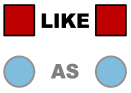
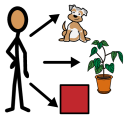
This standards connection includes Poetry Clues Guide 2 and a Figurative Language activity. Use Clues Guide 2 to review literary devices used by poets to aid in evoking feeling, emotion and understanding. Read aloud the examples of each device. Ask students for examples they may remember from familiar texts, songs or everyday communication.

To complete Standards Connection B, you must choose a poem that includes an example of figurative language or a literary device outlined in Clues Guide 2. You may choose to use the same poem used in Standards Connection A or a different poem (see a list of suggested poem titles on the Supplemental Reading List). Repeated exposure to poems, especially those that include figurative language and other literary devices, will deepen students' understanding. Read the poem aloud; multiple readings of poems are encouraged to support students' understanding. Model how to find or pick out an example of figurative language or a literary device in the poem. For example, after reading the poem, select a phrase to discuss and read the phrase aloud. Then say, "I noticed this phrase while reading. This is an example of (a metaphor)." Then complete the Figurative Language Activity.





Poetry Clues Guide 2

Poems can have...	This is called...	Example:
words that compare two things using 'like' or 'as'.	 simile	The thunder sounded like a lion's roar.
words that compare two things not using 'like' or 'as'.	 metaphor	Her eyes are sparkling diamonds.
words that make something seem more than it is.	 hyperbole	I'm so hungry I could eat a horse!
words that are a sound.	 onomatopoeia	I walked through the leaves; crunch crunch, crunch.
words that make a thing seem like a person.	 personification	The Sun peeked through the clouds.
words that make the reader feel, see, hear, taste or smell what is being described.	 imagery	The big, fat rain drops plopped on my face as I stared at the rainbow in the sky.
words that share the same beginning sound.	 alliteration	I sit and sniff the scent of sand and salty water.
words that mean something other than what they say.	 idiom	Hold your horses!

Use Poetry Clues Guide 2 to help you read deeper into a line or stanza in the poem.

Enter a line or stanza from the poem:

_____

_____

_____

What is it an example of?

simile


metaphor


hyperbole

onomatopoeia


personification


imagery


alliteration


idiom

The poet uses this to make me _____ _____ .

For hands-on instruction, print, cut out and laminate.

Standards Connection A - Poetry Analysis Activity Fill-In Cards:

see	hear	smell	taste

Standards Connection B - Poetry Figurative Language Activity Fill-In Cards:

feel	think

Instructional Targets

Reading Standards for Informational Text

- ***Range and Level of Text Complexity:*** Read and use grade level and age-appropriate informational materials, including periodicals, articles, social studies and technical texts that are adapted to student reading level.
- ***Key Ideas and Details:*** Answer explicit questions and use support from text to explain the main ideas, and details of an informational text. Answer inferential questions and use support from text to explain the main ideas, details and inferences of an informational text.
- ***Craft and Structure:*** Identify and describe the intent or the purpose of a text (inform, persuade, etc.).

Differentiated Tasks

Level 3 Students will...

- Independently read informational materials, including social studies and technical texts that have been adapted to student reading level.
- Independently answer explicit questions about a text and write, speak or select an answer.
- Independently answer inferential questions about a text and write, speak or select an answer.
- Identify the author's intent or purpose and words, phrases or features that support it.

Level 2 Students will...

- Read supported and shared informational materials, including social studies and technical texts that have been adapted to student reading level.
- Select a picture or text in response to an explicit question about a text.
- Select a picture or text in response to an inferential question about a text.
- With support, identify the intent of the text as to inform, to persuade or to entertain.

Level 1 Students will...

- Actively participate in supported reading of informational materials, including social studies and technical texts that have been adapted to student ability level.
- Select a response to an explicit question from a narrowed field or errorless choice(s).
- Select a response to an inferential question from a narrowed field or errorless choice(s).
- With support, identify the intent of the text from a narrowed field or errorless choice(s).

Topic Connection

In this unit's Chapter Book, ***What Is Science?***, students learn about science and the scientific method. In this chapter, **Science** , students will learn about the study of science and the steps of the scientific method: ask a question, make a guess, do an experiment, observe, organize data and find a conclusion.

Topic Words

conclusion	observe	scientific method
data	problem*	scientist
experiment	question*	solve
guess*	science	test

Literacy Words

author	cover	read*
book	illustration/picture*	title
chapter	illustrator	

* Power Words

Benchmark Assessments

- Reading: Reading Level Assessment
- Reading: Reading with Symbols and all Benchmark Assessments in the Reading section of the GPS
- Early Learning: Phonemic Awareness Phoneme Blending
- Emerging Skills: Early Emerging Reading Rubric

Unit Checkpoint Assessments

- Level 2 and 3 Reading
- Level 1 Combined Content, Questions 1 and 2

An informal assessment of a verbal student's reading abilities may be obtained using the Unit Tools: Reading Observation.

Lesson at a Glance

	Activity 1	Activity 2	Activity 3
Instructional Activities	Read Aloud	Guided / Shared Reading	Answer Questions
See how these activities fit into the **Suggested Unit Pacing** .			
ULS Materials and Resources	**Chapter 1: Science** (Level J/K) **Communication Board** **Standards Connection A**	**Chapter 1: Science** (Level J/K, F/G or F/G Symbol-Supported) **Communication Board**	**Chapter 1: Science** **Communication Board** **Comprehension Questions** (Fill-In and Multiple-Choice, Levels 3-1) **Advanced Question** **Fill-In Cards** **Standards Connection B** **Standards Connection C**
	Instructional Guides: Active Participation Scripts **Instructional Guides: Instructional Tips** **SymbolStix PRIME**		
Additional Materials			

Instructional Targets

Reading Standards for Informational Text

- ***Range and Level of Text Complexity:*** Read and use grade level and age-appropriate informational materials, including periodicals, articles, social studies and technical texts that are adapted to student reading level.
- ***Key Ideas and Details:*** Answer explicit questions and use support from text to explain the main ideas, and details of an informational text. Answer inferential questions and use support from text to explain the main ideas, details and inferences of an informational text.
- ***Craft and Structure:*** Identify and describe the intent or the purpose of a text (inform, persuade, etc.).

Instructional Routine

or

Before Reading

- Use Lesson 15, Activity 3 to introduce and review the Topic Words: conclusion, data, experiment, guess, observe, problem, question, science, scientific method, scientist, solve and test.
- Continue talking about science. Ask a focus question such as, "What do we study when we study science—plants, the Earth or both?" Discuss students' responses.
- Display the title page of the Chapter Book and read the title, author and illustrator's names. Display Chapter 1, **Science** (Level J/K), and read the chapter title.
- Preview the chapter. Point out illustrations that show various people studying science. Point out that the people are performing experiments. To do an experiment, there are certain steps to follow. These steps are called the scientific method. Then say, "As I read, it is your job to remember the steps of the scientific method."
- Review the learning goal with students: **I will remember the steps of the scientific method.**

During Reading

Model Fluent Reading

- Read aloud with fluency and expression.
- Call attention to the question words and phrases that science helps us to answer. For example, "what things are made of" and "how things move" are phrases that show why we study science.

Comment on People, Ideas, Events and Features

- Comment on how the illustrations help you learn the steps of the scientific method. Identify the illustrations of each step on pages 6, 7 and 8 and explain each step of the scientific method. For example, show the illustration on page 6 of the scientist with a thought bubble and say, "This scientist is asking a question. This is the first step of the scientific method." Show the illustration on page 8 of the book and say, "This shows the five steps of the scientific method."
- Point out features that indicate the purpose of the text. For example, show the photographs of different types of science on page 3. Explain that each photograph is something real in our world that people can learn about. Because the text is giving real information about science, the purpose of the text is to inform.

Discussion Questions

- Read and discuss the questions at the bottom of each page in the chapter. Help students find evidence in the text to support their answer to explicit and inferential questions. For example, on page 5, the discussion question asks, “Why are scientists important?” Model how to find the clues in the text to answer the question. Say, “The book says, “Scientists learn new things about the world. Sometimes they invent or create things. I think this means that scientists are important because they teach us more about the world. I think they can make things that help us."

After Reading

- Revisit the learning goal. Ask, "What are the steps of the scientific method?" Provide a visual, such as the illustration on page 8.

Level 3: Have the student independently describe the steps of the scientific method. Provide prompts such as, "What is the first step of the scientific method? or "What is the next step?"

Level 2: Have the student identify one step of the scientific method. Use questions or the following sentence frame: "In Step 1, scientists ask a _____." Picture supports such as the Communication Board may be used as needed.

Level 1: Have the student identify one step of the scientific method by making a selection from a narrowed field or errorless choice(s). For example, display the symbol for 'question'. Ask, "What is the first step?"

- Continue the discussion by brainstorming different things scientists could use the scientific method to learn more about.
- Use Standards Connection A to identify and discuss the author's purpose for writing this text.

Check Understanding

Level 3: Can the student independently describe the steps of the scientific method?
Level 2: Can the student identify one step of the scientific method? How?
Level 1: Can the student identify one step of the scientific method by making a selection from a narrowed field or errorless choice(s)?

Instructional Target

Reading Standards for Informational Text

- ***Range and Level of Text Complexity:*** Read and use grade level and age-appropriate informational materials, including periodicals, articles, social studies and technical texts that are adapted to student reading level.

This leveled Chapter Book is presented in three leveled formats: Level J/K, Level F/G and Level F/G Symbol-Supported. Select the level of book and the reading routine appropriate for each student.

Instructional Routine
Guided Reading or

Before Reading	• Introduce the chapter by having students share what they have learned about science and the scientific method. • Use the following Topic Words in conversation about the chapter: conclusion, data, experiment, guess, observe, problem, question, science, scientific method, scientist, solve and test. Have students locate the words in the chapter. • Read the first three pages aloud, introducing students to the structure of the language. • Review the learning goal with students: **I will read a chapter.**
During Reading	• Listen as students read quietly to themselves. • Monitor fluency. • Model, prompt or support use of skills and strategies.
After Reading	• Revisit the learning goal and talk with students about the chapter. • Have students locate the High-Frequency Words: ask, did, five, what, who and work.

Instructional Routine
Shared Reading or

Before Reading	• Introduce the chapter by having students share what they have learned about science and the scientific method. • Use the following Topic Words in conversation about the chapter: conclusion, data, experiment, guess, observe, problem, question, science, scientific method, scientist, solve and test. Have students locate the words in the chapter. • Review the learning goal with students: **I will read a chapter.**
During Reading	• Read aloud while students follow along. • Provide supports that allow students to join in the reading. Supports may include choral reading, echo reading or use of a voice output device or eye gaze board. • Monitor print concepts and fluency. • Model and support use of skills and strategies.
After Reading	• Revisit the learning goal and talk with students about the chapter. • Have students locate the High-Frequency Words: ask, did, five, what, who and work.

Check Understanding

- **Level 3:** Can the student independently read chapter books adapted to personal reading level?
- **Level 2:** Can the student read chapter books adapted to personal reading level with support?
- **Level 1:** Can the student actively participate in reading chapter books adapted to student ability level? How?

Lesson 3 - Chapter 1

Activity 3 - Answer Questions

3
Activity 3

Instructional Target

Reading Standards for Informational Text

- ***Key Ideas and Details:*** Answer explicit questions and use support from text to explain the main ideas, and details of an informational text. Answer inferential questions and use support from text to explain the main ideas, details and inferences of an informational text.

Instructional Routine

? or

Introduce	• Introduce this activity by asking a focus question about the chapter. For example, ask, "What is one step of the scientific method?" Discuss students' responses. • Tell students they will now answer other questions about the chapter, **Science**. Explain that the answers to these questions can be found in the chapter. Say, "I am going to ask you questions about the chapter, **Science**. Your job is to answer the questions. You can use the chapter to help you." • Review the learning goal with students: **I will answer questions about the chapter.**
Model	• Review the chapter. Use Standards Connection B to aid in the review by sequencing information from the text with the main idea and key details. Model how to use the Marker Tool to highlight or circle important words and pictures to help remember key information in the text. • Display the Comprehension Questions. Multiple levels have been provided. Use the level that best meets your students' needs. Read the first question aloud. Model how to find the answer in the chapter by going back and reading the text. For explicit questions, point out how to find the answer to the question based on what the text says. For inferential questions, point out that the answer will not be directly in the text, but you can find the answer based on clues. Model how to find clues to answer an inferential question. • Model how to mark or select the correct answer based on the evidence found in the chapter. For explicit questions, point out the answer that matches a sentence in the text. For inferential questions, show how to select the answer based on the clues found in the text.
Provide Practice	***Choose the most appropriate activity format on the basis of each student's skills and needs.*** **Level 3:** The questions are text only. Have the student answer the questions independently. **Level 2:** The questions are text only and the answers are symbol-supported. Have the student answer the questions by selecting a picture. **Level 1:** The questions are written in a symbol-supported sentence strip format. Have the student answer the questions by selecting from a narrowed field or errorless choice(s).
Review	• Revisit the learning goal. Talk with students about where they found the answers to the questions. Point out that answers to questions can usually be found in the text or pictures. • Use Standards Connection C to further discuss the text structure and purpose by identifying the structure and finding words that identify and support the author's intent.

Check Understanding ?

- **Level 3:** Can the student independently answer questions about the chapter?
- **Level 2:** Can the student answer questions about the chapter by selecting a picture?
- **Level 1:** Can the student answer questions about the chapter by selecting a picture? How many choices were presented?

Questions and Answers

scientist **test** **learned** **Ask** **Science**

Fill-In (Levels 3-1)

1. _____ is a way to learn new things. (Science)
2. A _____ works in science. (scientist)
3. Step 1: _____ a question. (Ask)
4. Step 3: Do an experiment or a _____. (test)
5. These scientists _____ new things. (learned)

Multiple-Choice (Levels 3-1)

1. What is this chapter about? (math, reading, science*)
2. Who works in science? (scientist*, dancer, cashier)
3. What do we do in step 1? (write, ask*, draw)
4. What do we do in step 3? (test*, skip, run)
5. What is important to know about this chapter?
   - Scientists work in a lab.
   - Science is only about animals.
   - Scientists follow steps to learn new things.*

Fill-In Advanced

1. Science means to _____. (know)
2. Science is a way to know about things in our _____. (world)
3. In science, we can learn about _____. (Earth, space, plants, animals, technology)
4. A scientist watches and _____ how the world works. (observes)
5. The _____ has five steps. (scientific method)

Multiple-Choice Advanced

6. What is a hypothesis? (guess*, choice, game)
7. What can a scientist make to show what has happened? (letters, charts*, pictures)
8. What is the last step in the scientific method? (find a conclusion*, ask a question, do an experiment)
9. How do scientists help others?
   - They ask a question.
   - They share what they learn.*
   - They wear a white coat.
10. Why do scientists do experiments?
    - to scare people
    - to measure and write things
    - to find answers to their questions*

Instructional Targets

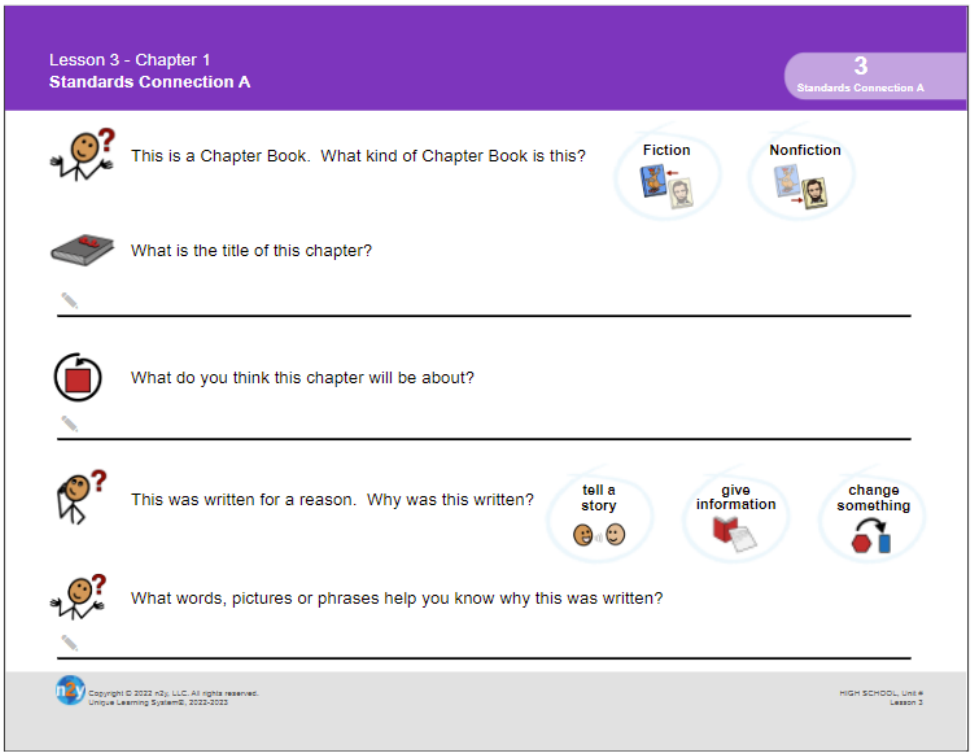
Reading Standards for Informational Text

- ***Craft and Structure:*** Identify and describe the intent or the purpose of a text (inform, persuade, etc.)

Differentiated Tasks

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• Identify the author's intent or purpose and words, phrases or features that support it.	• With support, identify the intent of the text as to inform, to persuade or to entertain.	• With support, identify the intent of the text from a narrowed field or errorless choice(s).

Use Standards Connection A to help students identify features in a text that help the reader know the author's purpose. Tell students to use the book features and pictures to discuss, locate and answer these questions.



Instructional Targets

Reading Standards for Informational Text
- ***Key Ideas and Details:*** Objectively summarize an informational text, including central idea and specific supporting details. Identify the central ideas(s), key details, and how they develop over the course of an informational text.

Standards for Speaking and Listening
- ***Presentation of Knowledge and Ideas:*** Present information in an organized manner appropriate to a task, an audience or a situation.

Standards for Language
- ***Knowledge of Language:*** Demonstrate conventions of language to communicate effectively when speaking or writing in varied contexts.

Differentiated Tasks

Level 3 Students will...

- Summarize the main idea and key details of a text.
- Determine the central idea/ideas of a text, using key details to identify how it develops.
- Communicate on a topic specific to the purpose and audience.
- Apply conventions of language to generate sentences specific to the purpose when speaking or writing.

Level 2 Students will...

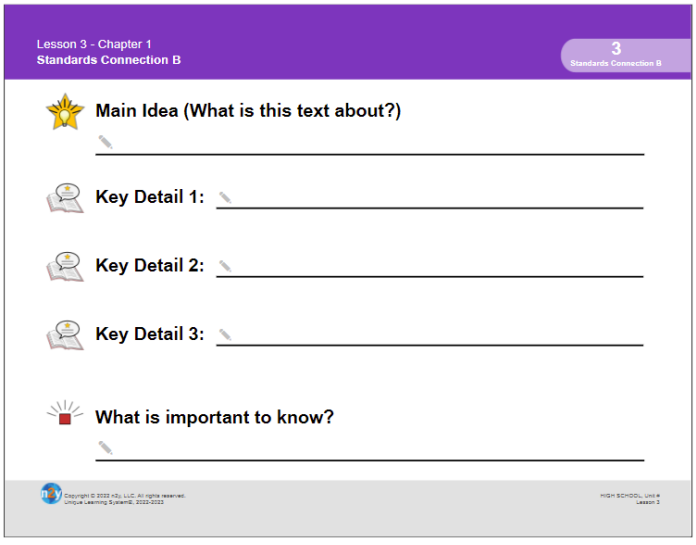
- Use picture supports to retell the main idea and key details from a text.
- Determine the key details to support a provided central idea.
- Communicate on a topic specific to the purpose and audience, using picture supports.
- Use conventions of language to generate a simple sentence when speaking or writing.

Level 1 Students will...

- Summarize key details from a text through an active participation response (e.g., voice output device, eye gaze choice board).
- Select the central idea from a narrowed field or errorless choice(s).
- Communicate basic information on a topic or experience, using communication technology and picture supports.
- Use language to share an idea with others.

Use Standards Connection B to identify the central idea of the text and summarize and sequence events or details as they occur.

Standards for Language are means of building communication skills. This extended activity, based on book reading, is an excellent tool for developing expressive communication. Incorporate augmentative systems (low tech and high tech) to encourage self-generated sentences and model language expansion.



Instructional Targets

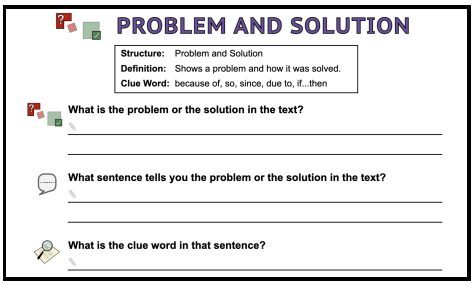
Reading Standards for Informational Text

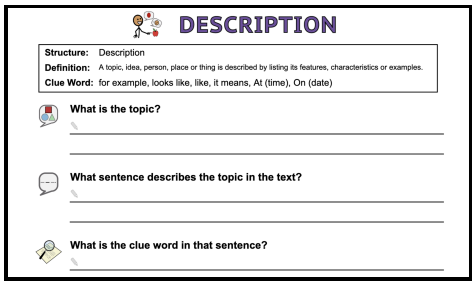
- ***Craft and Structure:*** Use structures of a text (paragraphs, chapters, etc.) to locate information as it supports the author's purpose or point of view in a text.

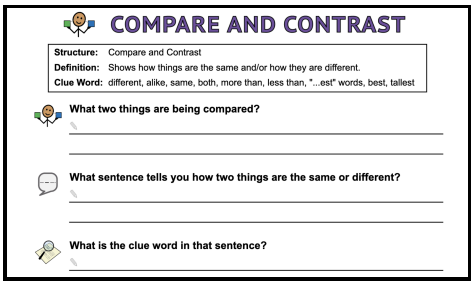
Differentiated Tasks

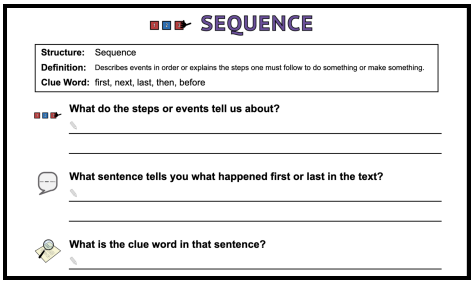
Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• Locate sentences in a text or find steps of a procedure that supports the author's purpose or point of view.	• Locate a sentence that identifies the author's purpose or point of view with support.	• Given a narrowed field or errorless choice(s), select a picture representing a sentence or a step of a procedure that identifies the author's purpose or point of view.

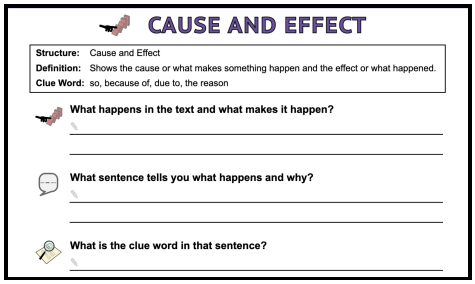
Select a passage in the text from this chapter that lends itself to one of the text structures described in Standards Connection C. Review the text structure description with students. Have students complete the appropriate page for the chosen structure.

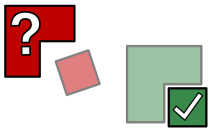






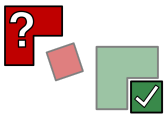






PROBLEM AND SOLUTION

Structure:	Problem and Solution
Definition:	Shows a problem and how it was solved.
Clue Word:	because of, so, since, due to, if...then



What is the problem or the solution in the text?

What sentence tells you the problem or the solution in the text?

What is the clue word in that sentence?

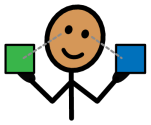
DESCRIPTION

Structure:	Description
Definition:	A topic, idea, person, place or thing is described by listing its features, characteristics or examples.
Clue Word:	for example, looks like, like, it means, At (time), On (date)

What is the topic?

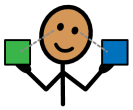
What sentence describes the topic in the text?

What is the clue word in that sentence?



COMPARE AND CONTRAST

Structure:	Compare and Contrast
Definition:	Shows how things are the same and/or how they are different.
Clue Word:	different, alike, same, both, more than, less than, "...est" words, best, tallest



What two things are being compared?

What sentence tells you how two things are the same or different?

What is the clue word in that sentence?

SEQUENCE

Structure:	Sequence
Definition:	Describes events in order or explains the steps one must follow to do something or make something.
Clue Word:	first, next, last, then, before

What do the steps or events tell us about?

What sentence tells you what happened first or last in the text?

What is the clue word in that sentence?

CAUSE AND EFFECT

Structure:	Cause and Effect
Definition:	Shows the cause or what makes something happen and the effect or what happened.
Clue Word:	so, because of, due to, the reason

What happens in the text and what makes it happen?

What sentence tells you what happens and why?

What is the clue word in that sentence?

Instructional Targets

Standards for Language
- ***Vocabulary Acquisition and Use:*** Use words acquired through academic and domain-specific sources when speaking and writing.

Employability
- ***Work Skills:*** Demonstrate basic employability skills, including work, social and hygiene habits.

Differentiated Tasks

Level 3 Students will...

- Independently use vocabulary words in conversation and in writing.
- Demonstrate consistent work skills that lead to employability.

Level 2 Students will...

- Select text or pictures of key vocabulary words as part of a discussion or writing with support.
- Demonstrate work skills with some support, including staying on task, following directions, responding to authority and asking for help.

Level 1 Students will...

- Make a selection to indicate a picture of a key vocabulary word within a text or to make a sentence.
- Actively respond to supported directions from a supervisor.

Topic Connection

In chapter 1 of ***What Is Science?***, students learn about the steps in the scientific method. When scientists do an experiment, they collect data and keep records. In this lesson, students will keep a record of the classroom jobs they have completed.

Topic Words

data	scientist
experiment	scientific method

Transition Words

directions	job	skills	task
employment	record	supervisor	work

* Power Words

Lesson at a Glance

Activity 1

Instructional Activities

Keeping a Job Record

See how these activities fit into the **Suggested Unit Pacing** .

ULS Materials and Resources

Job Record Sheet

Core Materials: A.M. Job List, P.M. Job List

Fill-In Cards

L³ Skills: Life Skills

Additional Materials

Activity 1 - Keeping a Job Record

Instructional Targets

Standards for Language

- ***Vocabulary Acquisition and Use:*** Use words acquired through academic and domain-specific sources when speaking and writing.

Employability

- ***Work Skills:*** Demonstrate basic employability skills, including work, social and hygiene habits.

Instructional Routine

Introduce	• Introduce the activity by asking a focus question about scientists. For example, ask, "What do scientists collect and record—data or pizza?" Discuss students' responses. • Talk about information and data we receive on a daily basis. Ask students how they keep everything organized. For instance, ask, "Who keeps a planner with important information in it?" • Remind students that scientists write down their data to learn more. Many people must write down information or keep records while working. Tell students that this week, they will complete their classroom jobs and keep a record to stay organized. For example, say, "Your job is to complete and keep a record of your classroom job for the week." • Review the learning goal with students: **I will keep a record of completing my classroom job.**
Model	• Brainstorm with students ways people record information and data for their job (photos, drawings, writings). Discuss why they record information (to remember, to share, to ensure a job is complete, etc.). • Display the Core Materials/A.M. Job list or Core Materials/P.M. Job list. Talk to students about why we have classroom jobs and why we want to keep a record of those jobs. For example, say, "We each have jobs in our classroom to help keep our room clean and running smoothly. We need to keep track of what jobs have been done." • Display the Job Record Sheet. Model how to select the job you will be completing that week. For example, say, "First I need to find my job for the week." Model other steps of filling out the Job Record Sheet. Tell the students that their job is to keep a record each day of their classroom job.
Provide Practice	***Provide the students with A.M. Job List, P.M. Job List, and the Job Record Sheet.*** **Level 3:** Have the student keep a record of a classroom job by completing the Job Record Sheet. **Level 2:** Have the student keep a record of a classroom job by completing the Job Record Sheet, with support. **Level 1:** Have the student actively respond by participating in completing the Job Record Sheet by selecting that they completed a classroom job.
Review	• Display a completed Job Record Sheet. Talk to students about how the records show what day each job was completed. • Remind students that we record data in order to gather information to use in the future. Discuss other information students could record to help them in the future.

Check Understanding

- **Level 3:** Can the student keep a record of completing a classroom job?
- **Level 2:** Can the student keep a record of completing a classroom job? How?
- **Level 1:** Can the student actively respond by selecting that they completed a classroom job?

Instructional Targets

Reading Standards for Informational Text

- ***Range and Level of Text Complexity:*** Read and use grade level and age-appropriate informational materials, including periodicals, articles, social studies and technical texts that are adapted to student reading level.
- ***Key Ideas and Details:*** Answer explicit questions and use support from text to explain the main ideas, and details of an informational text. Answer inferential questions and use support from text to explain the main ideas, details and inferences of an informational text.
- ***Craft and Structure:*** Identify and describe the intent or the purpose of a text (inform, persuade, etc.).

Differentiated Tasks

Level 3 Students will...

- Independently read informational materials, including social studies and technical texts that have been adapted to student reading level.
- Independently answer explicit questions about a text and write, speak or select an answer.
- Independently answer inferential questions about a text and write, speak or select an answer.
- Identify the author's intent or purpose and words, phrases or features that support it.

Level 2 Students will...

- Read supported and shared informational materials, including social studies and technical texts that have been adapted to student reading level.
- Select a picture or text in response to an explicit question about a text.
- Select a picture or text in response to an inferential question about a text.
- With support, identify the intent of the text as to inform, to persuade or to entertain.

Level 1 Students will...

- Actively participate in supported reading of informational materials, including social studies and technical texts that have been adapted to student ability level.
- Select a response to an explicit question from a narrowed field or errorless choice(s).
- Select a response to an inferential question from a narrowed field or errorless choice(s).
- With support, identify the intent of the text from a narrowed field or errorless choice(s).

Topic Connection

In this unit's Chapter Book, ***What Is Science?***, students learn about scientific inquiry and the scientific method. In this chapter, **Thomas Edison** , students will learn about how Thomas Edison asked questions and used the scientific method to solve a problem.

Topic Words

data	observe	science	solve
experiment	problem*	scientific method	test
guess*	question*	scientist	

Literacy Words

author	cover	read*
book	illustration/picture*	title
chapter	illustrator	

* Power Words

Benchmark Assessments

- Reading: Reading Level Assessment
- Reading: Reading with Symbols and all Benchmark Assessments in the Reading section of the GPS
- Early Learning: Phonemic Awareness Phoneme Blending
- Emerging Skills: Early Emerging Reading Rubric

Unit Checkpoint Assessments

- Level 2 and 3 Reading
- Level 1 Combined Content, Questions 1 and 2

An informal assessment of a verbal student's reading abilities may be obtained using the Unit Tools: Reading Observation.

Lesson at a Glance

	Activity 1	Activity 2	Activity 3
Instructional Activities	Read Aloud	Guided / Shared Reading	Answer Questions
See how these activities fit into the **Suggested Unit Pacing** .			
ULS Materials and Resources	**Chapter 2: Thomas Edison** (Level J/K) **Communication Board** **Standards Connection A**	**Chapter 2: Thomas Edison** (Level J/K, F/G or F/G Symbol-Supported) **Communication Board**	**Chapter 2: Thomas Edison** **Communication Board** **Comprehension Questions** (Fill-In and Multiple-Choice, Levels 3-1) **Advanced Questions** **Fill-In Cards** **Standards Connection B** **Standards Connection C**
	Instructional Guides: Active Participation Scripts **Instructional Guides: Instructional Tips** **SymbolStix PRIME**		
Additional Materials			

Instructional Targets

Reading Standards for Informational Text

- ***Range and Level of Text Complexity:*** Read and use grade level and age-appropriate informational materials, including periodicals, articles, social studies and technical texts that are adapted to student reading level.
- ***Key Ideas and Details:*** Answer explicit questions and use support from text to explain the main ideas, and details of an informational text. Answer inferential questions and use support from text to explain the main ideas, details and inferences of an informational text.
- ***Craft and Structure:*** Identify and describe the intent or the purpose of a text (inform, persuade, etc.).

Instructional Routine

or

Before Reading

- Use Lesson 15, Activity 3 to introduce and review the Topic Words: data, experiment, guess, observe, problem, question, science, scientific method, scientist, solve and test.
- Continue talking about science. Ask a focus question such as, "What is one of the steps scientists follow when they do an experiment?" Discuss students' responses.
- Display Chapter 2, **Thomas Edison** (Level J/K), and read the title.
- Preview the chapter. Point out illustrations of Thomas Edison. Discuss the illustrations of a young Thomas Edison with books. Point out that his desire to understand things may have led to him becoming a scientist. Then say, "As I read, it is your job to describe one of Thomas Edison's experiments."
- Review the learning goal with students: **I will describe one of Thomas Edison's experiments.**

During Reading

Model Fluent Reading

- Read aloud with fluency and expression.
- Call attention to how Thomas questioned the world by emphasizing the words "curious" and "why."

Comment on People, Ideas, Events and Features

- Comment on how the illustrations show one of Thomas Edison's experiments. Point to the illustration on page 17 and say, "Thomas did an experiment with light bulbs. He picked different metals to test and then collected data."
- Point out features that indicate the purpose of the text. For example, show the illustration on page 16 and say, "These are light bulbs being tested. Thomas Edison did tests on light bulbs and found a light bulb that stayed lit for a long time. Thomas Edison was a real scientist. Because the illustration and text tell us about Thomas Edison's real life and work, the purpose of this text is to inform."

Discussion Questions

- Read and discuss the questions at the bottom of each page in the chapter. Help students find evidence in the text to support their answer to explicit and inferential questions. For example, on page 19, the discussion question asks, “How did Thomas’ invention make your life better?” Model how to find the clues in the text to answer the question. Say, “The book says, Thomas invented a light bulb that would stay lit for a long time. He helped people light their houses. Light bulbs help me see in my house when it is dark. I think Thomas' invention made it easier for me to live at home."

After Reading

- Revisit the learning goal. Ask, "What is one of Thomas Edison's experiments?"

Level 3: Have the student independently describe one of Thomas Edison's experiments. Provide a prompt such as, "How did Thomas test a light bulb?"

Level 2: Have the student identify one item Thomas Edison experimented with. Provide a prompt such as, "Thomas tested a _____, to see if it could last longer."

Level 1: Have the student identify one item Thomas Edison experimented with by making a selection from a narrowed field or errorless choice(s). For example, display the symbol for 'light bulb' and ask "What did Thomas test?"

- Continue the discussion by talking about other inventions Thomas Edison made, such as the first movie camera or the phonograph.
- Use Standards Connection A to identify and discuss the author's purpose for writing this text.

Check Understanding

Level 3: Can the student independently describe one of Thomas Edison's experiments?
Level 2: Can the student identify one item Thomas Edison experimented with? How?
Level 1: Can the student identify one item Thomas Edison experimented with by making a selection from a narrowed field or errorless choice(s)?

Instructional Target

Reading Standards for Informational Text

- ***Range and Level of Text Complexity:*** Read and use grade level and age-appropriate informational materials, including periodicals, articles, social studies and technical texts that are adapted to student reading level.

This leveled Chapter Book is presented in three leveled formats: Level J/K, Level F/G and Level F/G Symbol-Supported. Select the level of book and the reading routine appropriate for each student.

Instructional Routine
Guided Reading or

Before Reading	• Introduce the chapter by having students share what they have learned about Thomas Edison. • Use the following Topic Words in conversation about the chapter: data, experiment, guess, observe, problem, question, science, scientific method, scientist, solve and test. Have students locate the words in the chapter. • Read the first three pages aloud, introducing students to the structure of the language. • Review the learning goal with students: **I will read a chapter.**
During Reading	• Listen as students read quietly to themselves. • Monitor fluency. • Model, prompt or support use of skills and strategies.
After Reading	• Revisit the learning goal and talk with students about the chapter. • Have students locate the High-Frequency Words: almost, ask, close, did, had, idea, knew, longer, made, not, what, who and work.

Instructional Routine
Shared Reading or

Before Reading	• Introduce the chapter by having students share what they have learned about Thomas Edison. • Use the following Topic Words in conversation about the chapter: data, experiment, guess, observe, problem, question, science, scientific method, scientist, solve and test. Have students locate the words in the chapter. • Review the learning goal with students: **I will read a chapter.**
During Reading	• Read aloud while students follow along. • Provide supports that allow students to join in the reading. Supports may include choral reading, echo reading or use of a voice output device or eye gaze board. • Monitor print concepts and fluency. • Model and support use of skills and strategies.
After Reading	• Revisit the learning goal and talk with students about the chapter. • Have students locate the High-Frequency Words: almost, ask, close, did, had, idea, knew, longer, made, not, what, who and work.

Check Understanding

- **Level 3:** Can the student independently read chapter books adapted to personal reading level?
- **Level 2:** Can the student read chapter books adapted to personal reading level with support?
- **Level 1:** Can the student actively participate in reading chapter books adapted to student ability level? How?

Activity 3 - Answer Questions

Instructional Target

Reading Standards for Informational Text

- ***Key Ideas and Details:*** Answer explicit questions and use support from text to explain the main ideas, and details of an informational text. Answer inferential questions and use support from text to explain the main ideas, details and inferences of an informational text.

Instructional Routine

? or

Introduce	• Introduce this activity by asking a focus question about the chapter. For example, ask, "What is one thing Thomas Edison invented?" Discuss students' responses. • Tell students they will now answer other questions about the chapter, **Thomas Edison**. Explain that the answers to these questions can be found in the chapter. Say, "I am going to ask you questions about the chapter, **Thomas Edison**. Your job is to answer the questions. You can use the chapter to help you." • Review the learning goal with students: **I will answer questions about the chapter.**
Model	• Review the chapter. Use Standards Connection B to aid in the review by sequencing information from the text with the main idea and key details. Model how to use the Marker Tool to highlight or circle important words and pictures to help remember key information in the text. • Display the Comprehension Questions. Multiple levels have been provided. Use the level that best meets your students' needs. Read the first question aloud. Model how to find the answer in the chapter by going back and reading the text. For explicit questions, point out how to find the answer to the question based on what the text says. For inferential questions, point out that the answer will not be directly in the text, but you can find the answer based on clues. Model how to find clues to answer an inferential question. • Model how to mark or select the correct answer based on the evidence found in the chapter. For explicit questions, point out the answer that matches a sentence in the text. For inferential questions, show how to select the answer based on the clues found in the text.
Provide Practice	***Choose the most appropriate activity format on the basis of each student's skills and needs.*** **Level 3:** The questions are text only. Have the student answer the questions independently. **Level 2:** The questions are text only and the answers are symbol-supported. Have the student answer the questions by selecting a picture. **Level 1:** The questions are written in a symbol-supported sentence strip format. Have the student answer the questions by selecting from a narrowed field or errorless choice(s).
Review	• Revisit the learning goal. Talk with students about where they found the answers to the questions. Point out that answers to questions can usually be found in the text or pictures. • Use Standards Connection C to further discussion about the text by identifying and describing words and sentences that support the text structure and purpose.

Check Understanding ?

- **Level 3:** Can the student independently answer questions about the chapter?
- **Level 2:** Can the student answer questions about the chapter by selecting a picture?
- **Level 1:** Can the student answer questions about the chapter by selecting a picture? How many choices were presented?

Questions and Answers

light bulb **Thomas Edison** **problem** **worked** **questions**

Fill-In (Levels 3-1)

1. _____ was born in 1847. (Thomas Edison)
2. Thomas asked lots of _____. (questions)
3. Thomas liked to know how things _____. (worked)
4. Thomas found a _____ with light bulbs. (problem)
5. Thomas' _____ helped many people. (light bulb)

Multiple-Choice (Levels 3-1)

1. Who is this chapter about? (teacher, Thomas Edison*, mom)
2. What did Thomas ask? (questions*, words, letters)
3. What did Thomas like to know about things? (how they worked*, their color, their size)
4. What did Thomas find with light bulbs? (house, car, problem*)
5. What is important to know about this chapter?
   - Thomas wanted to play.
   - Thomas did tests to make a new light bulb.*
   - Thomas did not like science.

Fill-In Advanced

1. Thomas was _____ and always asked questions. (curious)
2. He liked to read about _____. (science)
3. When Thomas was young, he got very sick and hurt his _____. (ears)
4. He worked hard to _____ problems by making new things. (solve)
5. Thomas heard about a light bulb that didn't last very _____. (long)

Multiple-Choice Advanced

6. What did Thomas do after he made a guess? (question, experiment*, nothing)
7. What did Thomas heat in the glass? (metal*, paper, cloth)
8. What did Thomas collect from his tests? (pictures, data*, wood)
9. What did Thomas do when he needed the light bulb to last longer?
   - He did nothing.
   - He made a sandwich and ate it.
   - He kept doing tests and trying new ideas.*
10. What would have happened if Thomas had stopped working?
   - He would not have found a light bulb that would stay lit.*
   - He would have found animals that needed help.
   - He would have found plants to study.

Instructional Targets

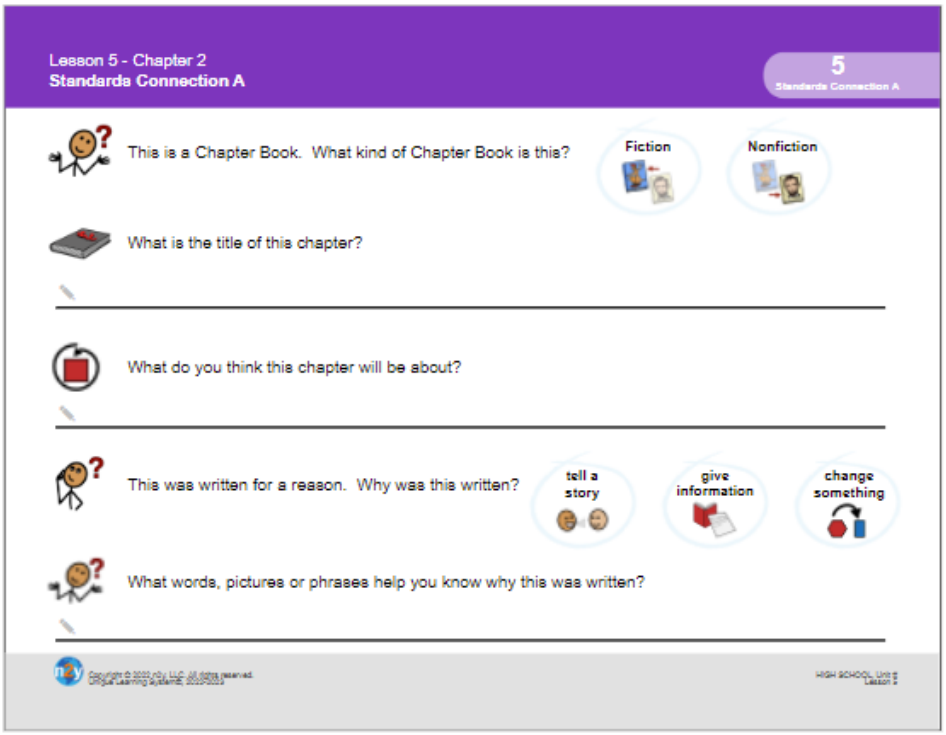
Reading Standards for Informational Text

- ***Craft and Structure:*** Identify and describe the intent or the purpose of a text (inform, persuade, etc.)

Differentiated Tasks

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• Identify the author's intent or purpose and words, phrases or features that support it.	• With support, identify the intent of the text as to inform, to persuade or to entertain.	• With support, identify the intent of the text from a narrowed field or errorless choice(s).

Use Standards Connection A to help students identify features in a text that help the reader know the author's purpose. Tell students to use the book features and pictures to discuss, locate and answer these questions.



Instructional Targets

Reading Standards for Informational Text

- ***Key Ideas and Details:*** Objectively summarize an informational text, including central idea and specific supporting details. Identify the central ideas(s), key details, and how they develop over the course of an informational text.

Standards for Speaking and Listening

- ***Presentation of Knowledge and Ideas:*** Present information in an organized manner appropriate to a task, an audience or a situation.

Standards for Language

- ***Knowledge of Language:*** Demonstrate conventions of language to communicate effectively when speaking or writing in varied contexts.

Differentiated Tasks

Level 3 Students will...

- Summarize the main idea and key details of a text.
- Determine the central idea/ideas of a text, using key details to identify how it develops.
- Communicate on a topic specific to the purpose and audience.
- Apply conventions of language to generate sentences specific to the purpose when speaking or writing.

Level 2 Students will...

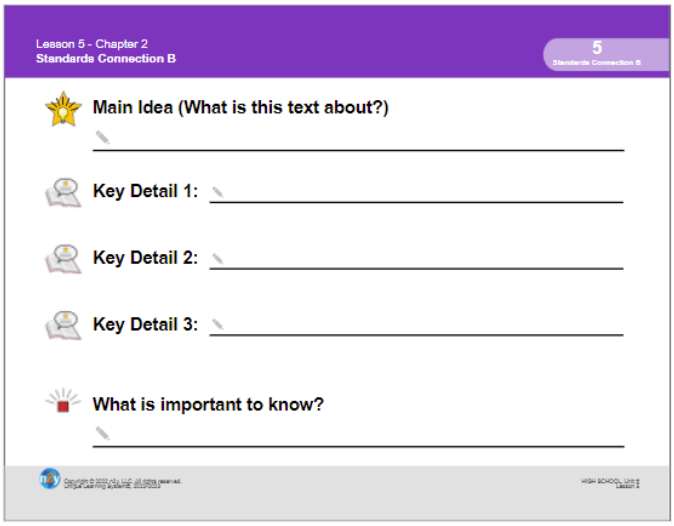
- Use picture supports to retell the main idea and key details from a text.
- Determine the key details to support a provided central idea.
- Communicate on a topic specific to the purpose and audience, using picture supports.
- Use conventions of language to generate a simple sentence when speaking or writing.

Level 1 Students will...

- Summarize key details from a text through an active participation responses (e.g., voice output device, eye gaze choice board).
- Select the central idea from a narrowed field or errorless choice(s).
- Communicate basic information on a topic or experience, using communication technology and picture supports.
- Use language to share an idea with others.

Use Standards Connection B to identify the central idea of the text and summarize and sequence events or details as they occur.

Standards for Language are means of building communication skills. This extended activity, based on book reading, is an excellent tool for developing expressive communication. Incorporate augmentative systems (low tech and high tech) to encourage self-generated sentences and model language expansion.



Instructional Targets

Reading Standards for Informational Text

- ***Craft and Structure:*** Use structures of a text (paragraphs, chapters, etc.) to locate information as it supports the the author's purpose or point of view in a text.

Differentiated Tasks

Level 3 Students will...

- Locate sentences in a text or find steps of a procedure that supports the author's purpose or point of view.

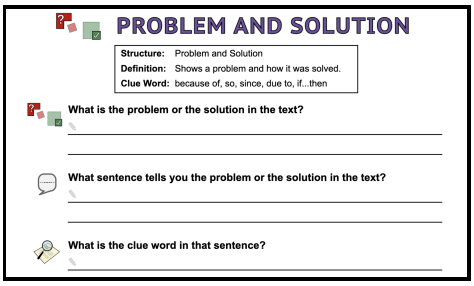
Level 2 Students will...

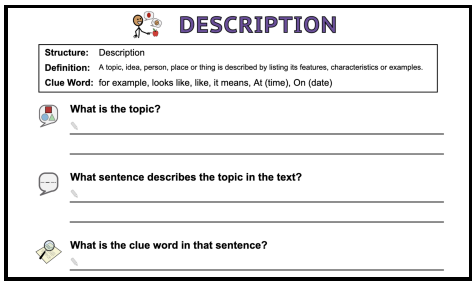
- Locate a sentence that identifies the author's purpose or point of view with support.

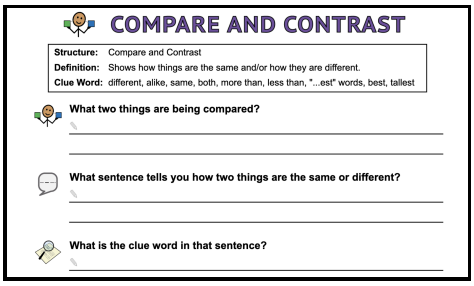
Level 1 Students will...

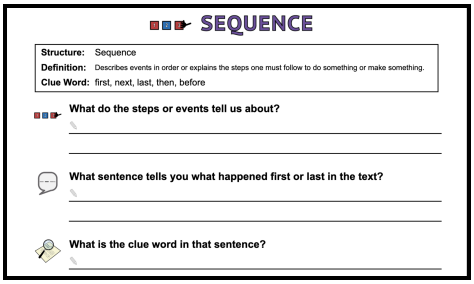
- Given a narrowed field or errorless choice(s), select a picture representing a sentence or a step of a procedure that identifies the author's purpose or point of view.

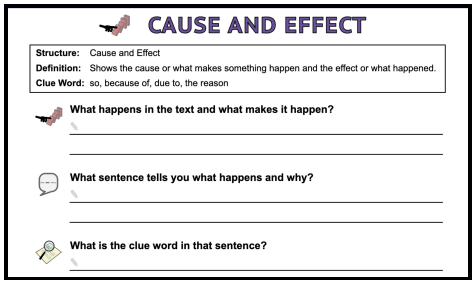
Select a passage in the text from this chapter that lends itself to one of the text structures described in Standards Connection C. Review the text structure description with students. Have students complete the appropriate page for the chosen structure.

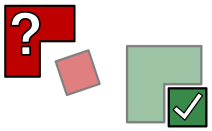






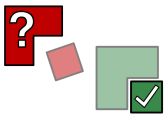






PROBLEM AND SOLUTION

Structure:	Problem and Solution
Definition:	Shows a problem and how it was solved.
Clue Word:	because of, so, since, due to, if...then



What is the problem or the solution in the text?

What sentence tells you the problem or the solution in the text?

What is the clue word in that sentence?

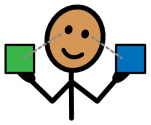
DESCRIPTION

Structure:	Description
Definition:	A topic, idea, person, place or thing is described by listing its features, characteristics or examples.
Clue Word:	for example, looks like, like, it means, At (time), On (date)

What is the topic?

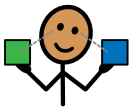
What sentence describes the topic in the text?

What is the clue word in that sentence?



COMPARE AND CONTRAST

Structure:	Compare and Contrast
Definition:	Shows how things are the same and/or how they are different.
Clue Word:	different, alike, same, both, more than, less than, "...est" words, best, tallest



What two things are being compared?

_____

_____

What sentence tells you how two things are the same or different?

_____

_____

What is the clue word in that sentence?

_____

SEQUENCE

Structure:	Sequence
Definition:	Describes events in order or explains the steps one must follow to do something or make something.
Clue Word:	first, next, last, then, before

What do the steps or events tell us about?

What sentence tells you what happened first or last in the text?

What is the clue word in that sentence?

CAUSE AND EFFECT

Structure:	Cause and Effect
Definition:	Shows the cause or what makes something happen and the effect or what happened.
Clue Word:	so, because of, due to, the reason

What happens in the text and what makes it happen?

What sentence tells you what happens and why?

What is the clue word in that sentence?

Instructional Targets

Standards for Language
- ***Vocabulary Acquisition and Use:*** Use words acquired through academic and domain-specific sources when speaking and writing.

Daily Living
Home Cleaning and Organization: Demonstrate knowledge of routine home maintenance and safety.

Differentiated Tasks

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• Independently use vocabulary words in conversation and in writing. • Identify and/or address basic home maintenance and safety issues.	• Select text or pictures of key vocabulary words as part of a discussion or writing with support. • Identify appropriate solutions to address basic home maintenance and safety issues.	• Make a selection to indicate a picture of a key vocabulary word within a text or to make a sentence. • Select appropriate solutions to address basic home maintenance and safety issues, from a narrowed field or errorless choice(s).

Topic Connection

In chapter 2 of ***What Is Science?*** , students read about Thomas Edison. Thomas Edison was a scientist who invented a light bulb that could stay lit for a long time. Thomas Edison's invention helped people light their homes. In this lesson, students learn about maintenance for their home lighting and how to change a light bulb.

Topic Words

science
scientist

Transition Words

home
maintain
maintenance
safety

* Power Words

Lesson at a Glance

Activity 1

Instructional Activities	Taking Care of Your Lights
	See how these activities fit into the **Suggested Unit Pacing** .
ULS Materials and Resources	**Home Lighting Tips Poster** **Steps to Change a Light Bulb Poster** **Home Lighting Scenarios** (Level 3, Level 1 & 2)
	L³ Skills: Life Skills
Additional Materials	Different types of light bulbs Ladder

Activity 1 - Taking Care of Your Lights

Instructional Targets

Standards for Language

- ***Vocabulary Acquisition and Use:*** Use words acquired through academic and domain-specific sources when speaking and writing.

Daily Living

- ***Home Cleaning and Organization:*** Demonstrate knowledge of routine home maintenance and safety.

Instructional Routine

Introduce	• Introduce the activity by asking a focus question about lights. For example, ask, "What goes inside of a light to make it shine—a light bulb or a penny?" Discuss students' responses. • Talk with students about how Thomas Edison invented a light bulb that could stay lit for a long time. Explain that light bulbs can burn out after they have been lit for a long time. Tell students that there are many ways to maintain the lights in their home, including replacing light bulbs when they go out. • Tell students they will be learning about ways to maintain the lights in their house and replace a light bulb. Say, "Today it is your job to identify how to maintain the lights in a home." • Review the learning goals with students: **I will identify how to maintain lights in a home.**
Model	• Display the Home Lighting Tips Poster. Read and explain each tip. For example, show students where to find information about the watts on a light, and where to look for this information on the light bulb package. Then say, "Check the watts or lumens when you replace a light bulb." • Display the Steps to Change a Light Bulb Poster. Read each step and model how to change a light bulb in your classroom. Point out important information from each step. For example, point to the base of a light bulb and explain that this connects with the energy source. Say, "It is important to find the right type of bulb, so that the base fits." Provide an unplugged lamp in the classroom for students to practice with. With assistance as needed, have students follow the steps to practice changing a light bulb in the classroom. • Display the Home Lighting Scenarios. Two levels are provided. Use the level that meets the needs of the majority of your students. Model how to use information from the lesson to complete the scenarios.
Provide Practice	***Provide students with the Home Lighting Tips Poster and the Home Lighting Scenarios.*** **Level 3:** Have the student address how to maintain lights in a home by completing the Home Lighting Scenarios. **Level 2:** Have the student identify how to maintain lights in a home by completing the Home Lighting Scenarios, with support. **Level 1:** Have the student participate in selecting how to maintain lights in a home by completing the Home Lighting Scenarios from a narrowed field or errorless choice(s).
Review	• Discuss the Home Lighting Scenarios and identify the correct solutions. • Ask students to share which of the home lighting tips they could also follow in their classroom.

Check Understanding

- **Level 3:** Can the student address how to maintain lights in a home?
- **Level 2:** Can the student identify how to maintain lights in a home? How?
- **Level 1:** Can the student participate in selecting how to maintain lights in a home from a narrowed field or errorless choice(s)?

Instructional Targets

Reading Standards for Informational Text

- ***Range and Level of Text Complexity:*** Read and use grade level and age-appropriate informational materials, including periodicals, articles, social studies and technical texts that are adapted to student reading level.
- ***Key Ideas and Details:*** Answer explicit questions and use support from text to explain the main ideas, and details of an informational text. Answer inferential questions and use support from text to explain the main ideas, details and inferences of an informational text.
- ***Craft and Structure:*** Identify and describe the intent or the purpose of a text (inform, persuade, etc.).

Differentiated Tasks

Level 3 Students will...

- Independently read informational materials, including social studies and technical texts that have been adapted to student reading level.
- Independently answer explicit questions about a text and write, speak or select an answer.
- Independently answer inferential questions about a text and write, speak or select an answer.
- Identify the author's intent or purpose and words, phrases or features that support it.

Level 2 Students will...

- Read supported and shared informational materials, including social studies and technical texts that have been adapted to student reading level.
- Select a picture or text in response to an explicit question about a text.
- Select a picture or text in response to an inferential question about a text.
- With support, identify the intent of the text as to inform, to persuade or to entertain.

Level 1 Students will...

- Actively participate in supported reading of informational materials, including social studies and technical texts that have been adapted to student ability level.
- Select a response to an explicit question from a narrowed field or errorless choice(s).
- Select a response to an inferential question from a narrowed field or errorless choice(s).
- With support, identify the intent of the text from a narrowed field or errorless choice(s).

Topic Connection

In this unit's Chapter Book, ***What Is Science?***, students learn about scientific inquiry, the scientific method and famous scientists. In this chapter, **James West**, students will learn how James West used the scientific method to make an electret microphone.

Topic Words

conclusion	guess*	question*	scientist
data	observe	science	solve
experiment	problem*	scientific method	test

Literacy Words

author	cover	read*
book	illustration/picture*	title
chapter	illustrator	

* Power Words

Benchmark Assessments

- Reading: Reading Level Assessment
- Reading: Reading with Symbols and all Benchmark Assessments in the Reading section of the GPS
- Early Learning: Phonemic Awareness Phoneme Blending
- Emerging Skills: Early Emerging Reading Rubric

Unit Checkpoint Assessments

- Level 2 and 3 Reading
- Level 1 Combined Content, Questions 1 and 2

An informal assessment of a verbal student's reading abilities may be obtained using the Unit Tools: Reading Observation.

Lesson at a Glance

	Activity 1	Activity 2	Activity 3
Instructional Activities	Read Aloud	Guided / Shared Reading	Answer Questions
See how these activities fit into the **Suggested Unit Pacing** .			
ULS Materials and Resources	**Chapter 3: James West** (Level J/K) **Communication Board** **Standards Connection A**	**Chapter 3: James West** (Level J/K, F/G or F/G Symbol-Supported) **Communication Board**	**Chapter 3: James West** **Communication Board** **Comprehension Questions** (Fill-In and Multiple-Choice, Levels 3-1) **Advanced Questions** **Fill-In Cards** **Standards Connection B** **Standards Connection C**
	Instructional Guides: Active Participation Scripts **Instructional Guides: Instructional Tips** **SymbolStix PRIME**		
Additional Materials			

Instructional Targets

Reading Standards for Informational Text

- ***Range and Level of Text Complexity:*** Read and use grade level and age-appropriate informational materials, including periodicals, articles, social studies and technical texts that are adapted to student reading level.
- ***Key Ideas and Details:*** Answer explicit questions and use support from text to explain the main ideas, and details of an informational text. Answer inferential questions and use support from text to explain the main ideas, details and inferences of an informational text.
- ***Craft and Structure:*** Identify and describe the intent or the purpose of a text (inform, persuade, etc.).

Instructional Routine

or

Before Reading

- Use Lesson 15, Activity 3 to review the Topic Words: conclusion, data, experiment, guess, observe, problem, question, science, scientific method, scientist, solve and test.
- Continue talking about science. Ask a focus question such as, "What can a scientist do to answer their question—try an experiment or wash their clothes?" Discuss students' responses.
- Display Chapter 3,**James West** (Level J/K), and read the title.
- Preview the chapter. Point out illustrations of electronics. Point out that James West wanted to know how electricity works. Later on, he was able to use his understanding of electricity and power to help people. Then say, "As I read today, it is your job to remember how James West used science to help people."
- Review the learning goal with students: **I will remember how James West used science to help people.**

During Reading

Model Fluent Reading

- Read aloud with fluency and expression.
- Call attention to the terms 'electronics', 'acoustic' and 'sound' to emphasize what type of science James West was interested in.

Comment on People, Ideas, Events and Features

- Comment on how the illustrations help you know how James West used science to help people. For example, note the illustration of the electret microphone on page 26 and say, "James West used an electret to make a small microphone. Then, show the illustration on page 28 and say, "The small microphone that James West made was used in telephones and hearing aids."
- Point out features that indicate the purpose of the text. For example, show the illustration on page 26 and say, "This shows James West thinking about how he could make a small microphone. James West was a real scientist. Because the illustration and text tell us about James West's real life and work, the purpose of this text is to inform."

Discussion Questions

- Read and discuss the questions at the bottom of each page in the chapter. Help students find evidence in the text to support their answer to explicit and inferential questions. For example, on page 27, the discussion question asks, “Why is it important to collect data when doing an experiment?” Model how to find the clues in the text to answer the question. Say, "The book says, James West collected data. I know scientists write down data to see what happened in the experiment. I think scientists need data to find the answer to their question."

After Reading

- Revisit the learning goal. Ask, "How did James West use science to help people?"

Level 3: Have the student independently describe how James West used science to help people. Provide a prompt such as, "What did James West make?"

Level 2: Have the student identify one way James West used science to help people. Provide a prompt such as, "James West made a small _____."

Level 1: Have the student identify one way James West used science to help people by making a selection from a narrowed field or errorless choice(s). For example, display the symbol for 'microphone'. Ask, "What did James West make to help people?"

- Continue the discussion by talking about some other items that use electricity.
- Use Standards Connection A to identify and discuss the author's purpose for writing this text.

Check Understanding

Level 3: Can the student independently describe how James West used science to help people?

Level 2: Can the student identify one way James West used science to help people? How?

Level 1: Can the student identify one way James West used science to help people by making a selection from a narrowed field or errorless choice(s)?

Instructional Targets

Reading Standards for Informational Text

- ***Range and Level of Text Complexity:*** Read and use grade level and age-appropriate informational materials, including periodicals, articles, social studies and technical texts that are adapted to student reading level.

This leveled Chapter Book is presented in three leveled formats: Level J/K, Level F/G and Level F/G Symbol-Supported. Select the level of book and the reading routine appropriate for each student.

Instructional Routine

Guided Reading

or

Before Reading	• Introduce the chapter by having students share what they have learned about James West. • Use the following Topic Words in conversation about the chapter: conclusion, data, experiment, guess, observe, problem, question, science, scientific method, scientist, solve and test. Have students locate the words in the chapter. • Read the first three pages aloud, introducing students to the structure of the language. • Review the learning goal with students: **I will read a chapter.**
During Reading	• Listen as students read quietly to themselves. • Monitor fluency. • Model, prompt or support use of skills and strategies.
After Reading	• Revisit the learning goal and talk with students about the chapter. • Have students locate the High-Frequency Words: ask, did, had, idea, knew, look, made, not, ran and work.

Instructional Routine

Shared Reading

or

Before Reading	• Introduce the chapter by having students share what they have learned about James West. • Use the following Topic Words in conversation about the chapter: conclusion, data, experiment, guess, observe, problem, question, science, scientific method, scientist, solve and test. Have students locate the words in the chapter. • Review the learning goal with students: **I will read a chapter.**
During Reading	• Read aloud while students follow along. • Provide supports that allow students to join in the reading. Supports may include choral reading, echo reading or use of a voice output device or eye gaze board. • Monitor print concepts and fluency. • Model and support use of skills and strategies.
After Reading	• Revisit the learning goal and talk with students about the chapter. • Have students locate the High-Frequency Words: ask, did, had, idea, knew, look, made, not, ran and work.

Check Understanding

- **Level 3:** Can the student independently read chapter books adapted to personal reading level?
- **Level 2:** Can the student read chapter books adapted to personal reading level with support?
- **Level 1:** Can the student actively participate in reading chapter books adapted to student ability level? How?

Instructional Target

Reading Standards for Informational Text

- ***Key Ideas and Details:*** Answer explicit questions and use support from text to explain the main ideas, and details of an informational text. Answer inferential questions and use support from text to explain the main ideas, details and inferences of an informational text.

Instructional Routine

Introduce	• Introduce this activity by asking a focus question about the chapter. For example, ask, "What did James West invent?" Discuss students' responses. • Tell students they will now answer other questions about the chapter, **James West**. Explain that the answers to these questions can be found in the chapter. Say, "I am going to ask you questions about the chapter, **James West**. Your job is to answer the questions. You can use the chapter to help you." • Review the learning goal with students: **I will answer questions about the chapter.**
Model	• Review the chapter. Use Standards Connection B to aid in the review by sequencing information from the text with the main idea and key details. Model how to use the Marker Tool to highlight or circle important words and pictures to help remember key information in the text. • Display the Comprehension Questions. Multiple levels have been provided. Use the level that best meets your students' needs. Read the first question aloud. Model how to find the answer in the chapter by going back and reading the text. For explicit questions, point out how to find the answer to the question based on what the text says. For inferential questions, point out that the answer will not be directly in the text, but you can find the answer based on clues. Model how to find clues to answer an inferential question. • Model how to mark or select the correct answer based on the evidence found in the chapter. For explicit questions, point out the answer that matches a sentence in the text. For inferential questions, show how to select the answer based on the clues found in the text.
Provide Practice	***Choose the most appropriate activity format on the basis of each student's skills and needs.*** **Level 3:** The questions are text only. Have the student answer the questions independently. **Level 2:** The questions are text only and the answers are symbol-supported. Have the student answer the questions by selecting a picture. **Level 1:** The questions are written in a symbol-supported sentence strip format. Have the student answer the questions by selecting from a narrowed field or errorless choice(s).
Review	• Revisit the learning goal. Talk with students about where they found the answers to the questions. Point out that answers to questions can usually be found in the text or pictures. • Use Standards Connection C to further discussion about the text by identifying and describing words and sentences that support the text structure and purpose.

Check Understanding

- **Level 3:** Can the student independently answer questions about the chapter?
- **Level 2:** Can the student answer questions about the chapter by selecting a picture?
- **Level 1:** Can the student answer questions about the chapter by selecting a picture? How many choices were presented?

Questions and Answers

James West **talk** **microphone** **scientific method** **experiment**

Fill-In (Levels 3-1)

1. _____ wanted to know how things worked. (James West)
2. He used the _____ to keep learning. (scientific method)
3. James needed a small _____. (microphone)
4. James did an _____ to test his guess. (experiment)
5. James helped people _____ to each other. (talk)

Multiple-Choice (Levels 3-1)

1. Who is this chapter about? (James West*, mom, doctor)
2. What did James use to keep learning? (guitar, game, scientific method*)
3. What did James need? (small microphone*, sleep, pencil)
4. How did James test his guess? (experiment*, jump, sleep)
5. What is important to know about this chapter?
   - James was a small boy.
   - James made a microphone to help people.*
   - James did not like to work hard.

Fill-In Advanced

1. James wanted to be a _____. (scientist)
2. James liked to experiment with _____ like radios and microphones. (electronics)
3. James wanted to know how _____ worked. (sound)
4. James wanted to use a microphone to make _____ better. (telephones)
5. The microphone could not use a battery for _____. (power)

Multiple-Choice Advanced

6. What did James test? (computers, ideas*, radios)
7. How did James solve the problem? (wrote papers, drew pictures, ran tests*)
8. What did James use the microphone in? (cars and trucks, telephones and hearing aids*, lights and cameras)
9. How could James' work help people?
   - It could help them communicate.*
   - It could help them sleep.
   - It could help them exercise.
10. How did James make a small microphone?
    - He worked on a team.
    - He followed the steps in the scientific method.*
    - He went to school.

Instructional Targets

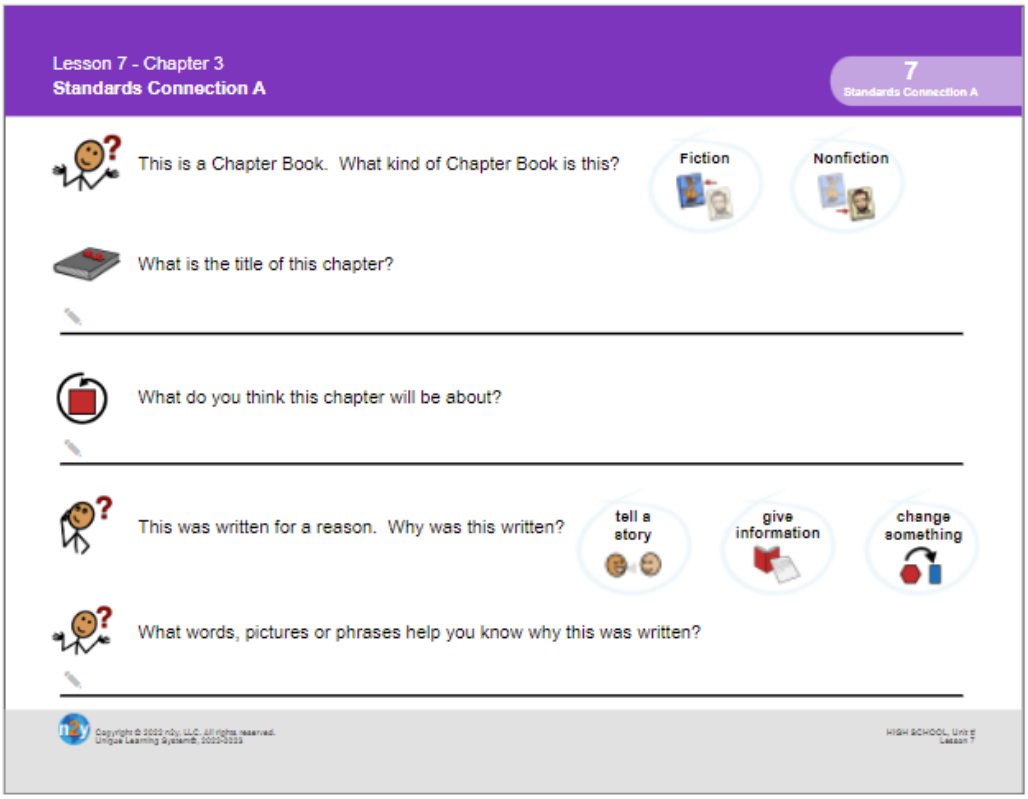
Reading Standards for Informational Text

- ***Craft and Structure:*** Identify and describe the intent or the purpose of a text (inform, persuade, etc.)

Differentiated Tasks

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• Identify the author's intent or purpose and words, phrases or features that support it.	• With support, identify the intent of the text as to inform, to persuade or to entertain.	• With support, identify the intent of the text from a narrowed field or errorless choice(s).

Use Standards Connection A to help students identify features in a text that help the reader know the author's purpose. Tell students to use the book features and pictures to discuss, locate and answer these questions.



Instructional Targets

Reading Standards for Informational Text

- ***Key Ideas and Details:*** Objectively summarize an informational text, including central idea and specific supporting details. Identify the central ideas(s), key details, and how they develop over the course of an informational text.

Standards for Speaking and Listening

- ***Presentation of Knowledge and Ideas:*** Present information in an organized manner appropriate to a task, an audience or a situation.

Standards for Language

- ***Knowledge of Language:*** Demonstrate conventions of language to communicate effectively when speaking or writing in varied contexts.

Differentiated Tasks

Level 3 Students will...

- Summarize the main idea and key details of a text.
- Determine the central idea/ideas of a text, using key details to identify how it develops.
- Communicate on a topic specific to the purpose and audience.
- Apply conventions of language to generate sentences specific to the purpose when speaking or writing.

Level 2 Students will...

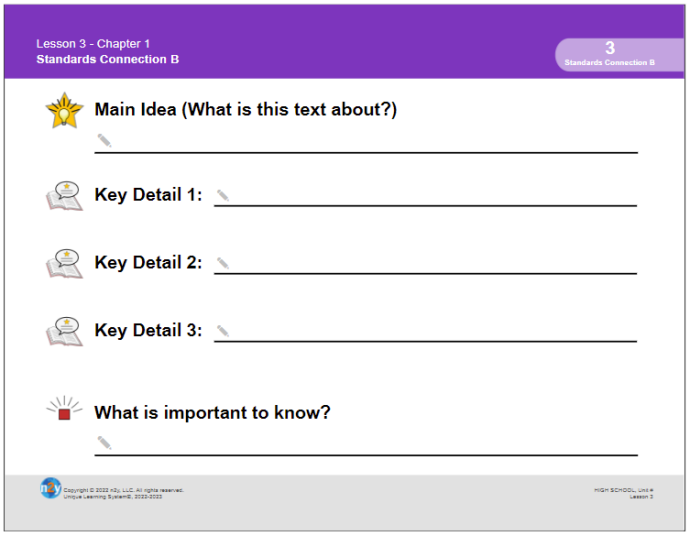
- Use picture supports to retell the main idea and key details from a text.
- Determine the key details to support a provided central idea.
- Communicate on a topic specific to the purpose and audience, using picture supports.
- Use conventions of language to generate a simple sentence when speaking or writing.

Level 1 Students will...

- Summarize key details from a text through an active participation responses (e.g., voice output device, eye gaze choice board).
- Select the central idea from a narrowed field or errorless choice(s).
- Communicate basic information on a topic or experience, using communication technology and picture supports.
- Use language to share an idea with others.

Use Standards Connection B to identify the central idea of the text and summarize and sequence events or details as they occur.

Standards for Language are means of building communication skills. This extended activity, based on book reading, is an excellent tool for developing expressive communication. Incorporate augmentative systems (low tech and high tech) to encourage self-generated sentences and model language expansion.



Instructional Targets

Reading Standards for Informational Text

- ***Craft and Structure:*** Use structures of a text (paragraphs, chapters, etc.) to locate information as it supports the the author's purpose or point of view in a text.

Differentiated Tasks

Level 3 Students will...

- Locate sentences in a text or find steps of a procedure that supports the author's purpose or point of view.

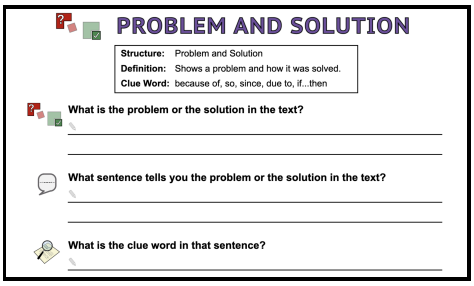
Level 2 Students will...

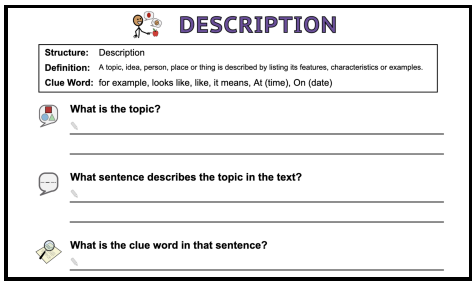
- Locate a sentence that identifies the author's purpose or point of view with support.

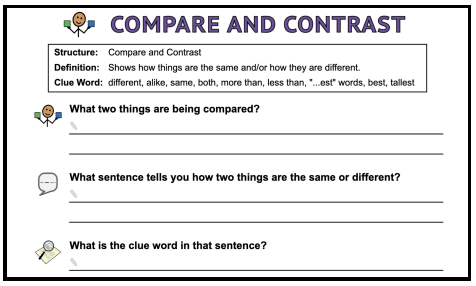
Level 1 Students will...

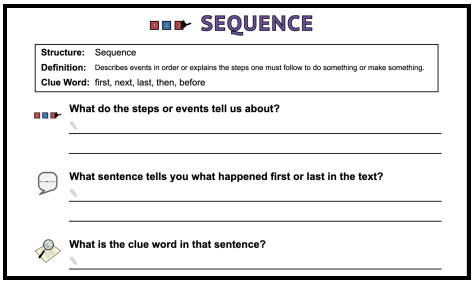
- Given a narrowed field or errorless choice(s), select a picture representing a sentence or a step of a procedure that identifies the author's purpose or point of view.

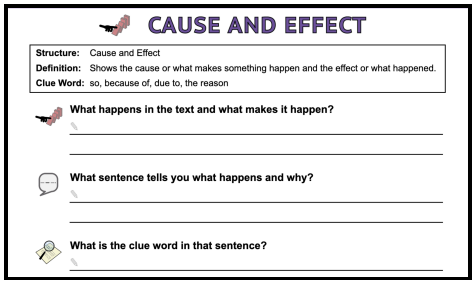
Select a passage in the text from this chapter that lends itself to one of the text structures described in Standards Connection C. Review the text structure description with students. Have students complete the appropriate page for the chosen structure.

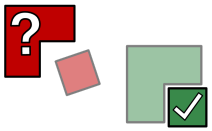






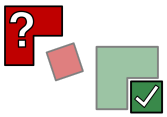






PROBLEM AND SOLUTION

Structure:	Problem and Solution
Definition:	Shows a problem and how it was solved.
Clue Word:	because of, so, since, due to, if...then



What is the problem or the solution in the text?

_____

_____

What sentence tells you the problem or the solution in the text?

_____

_____

What is the clue word in that sentence?

_____

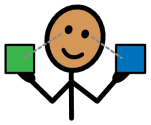
DESCRIPTION

Structure:	Description
Definition:	A topic, idea, person, place or thing is described by listing its features, characteristics or examples.
Clue Word:	for example, looks like, like, it means, At (time), On (date)

What is the topic?

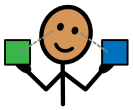
What sentence describes the topic in the text?

What is the clue word in that sentence?



COMPARE AND CONTRAST

Structure:	Compare and Contrast
Definition:	Shows how things are the same and/or how they are different.
Clue Word:	different, alike, same, both, more than, less than, "...est" words, best, tallest



What two things are being compared?

What sentence tells you how two things are the same or different?

What is the clue word in that sentence?

SEQUENCE

Structure:	Sequence
Definition:	Describes events in order or explains the steps one must follow to do something or make something.
Clue Word:	first, next, last, then, before

What do the steps or events tell us about?

What sentence tells you what happened first or last in the text?

What is the clue word in that sentence?

CAUSE AND EFFECT

Structure:	Cause and Effect
Definition:	Shows the cause or what makes something happen and the effect or what happened.
Clue Word:	so, because of, due to, the reason

What happens in the text and what makes it happen?

What sentence tells you what happens and why?

What is the clue word in that sentence?

Instructional Targets

Standards for Language
- ***Vocabulary Acquisition and Use:*** Use words acquired through academic and domain-specific sources when speaking and writing.

Daily Living
- ***Household Appliances and Tools:*** Responsibly use common household appliances (stove, washer/dryer, microwave, etc.) and/or tools.

Differentiated Tasks

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• Independently use vocabulary words in conversation and in writing. • Identify and/or demonstrate safety rules when using electrical appliances or tools.	• Select text or pictures of key vocabulary words as part of a discussion or writing with support. • Recognize and safely use electrical appliances or tools with support as needed.	• Make a selection to indicate a picture of a key vocabulary word within a text or to make a sentence. • Participate in selection and use of electrical appliances or tools with support as needed.

Topic Connection

In chapter 3 of ***What Is Science?***, students learn about James West, a scientist. James West wanted to learn about electronics. But he was not always careful, and as a young child, he got shocked when trying to fix a radio. In this lesson, students will learn how to safely use electricity and appliances. They will then use a toaster to make toast.

Topic Words

science
scientist

Transition Words

appliance
electricity
outlet
plug
safely

* Power Words

Lesson at a Glance

Activity 1

Instructional Activities	Using a Toaster Safely
	See how these activities fit into the **Suggested Unit Pacing** .
ULS Materials and Resources	**Safety Tips for Using Electricity Poster**
	L³ Skills: Life Skills
Additional Materials	toaster bread plastic knife butter or other toppings

Activity 1 - Using a Toaster Safely

Instructional Targets

Standards for Language

- ***Vocabulary Acquisition and Use:*** Use words acquired through academic and domain-specific sources when speaking and writing.

Daily Living

- ***Household Appliances and Tools:***Responsibly use common household appliances (stove, washer/dryer, microwave, etc.) and/or tools.

Instructional Routine

Introduce	• Introduce the activity by asking a focus question. For example, ask, "What can we use to make toast—refrigerator or a toaster?" Discuss student responses. • Talk with students about James West. James West was interested in electronics. As a young boy he tried to fix a radio and got shocked. He studied electricity and made a microphone. We use electricity for many things, but we need to use them carefully. • Tell students they will be learning how to safely use electricity and appliances. For example, say, "Your job is to use a toaster safely by following safety rules. • Review the learning goal with students: **I will follow rules to safely use a toaster.**
Model	• Display the Safety Tips for Using Electricity poster. Discuss each tip with the students. Model each tip for the students and what the tip means. For example, say, "The first tip says, 'Never use electricity near water.' This means that we should never use an appliance, such as a toaster or microwave, by water." Repeat with all other tips. • Model for students how to use a toaster to make toast. Follow each safety tip as you make the toast. For example, say, "The first safety tip said, 'Never use electricity near water.' I am going to set it over here away from the sink. I will make sure the counter is dry." Continue for all tips. • Tell students that their job is to follow all safety rules while making a piece of toast. Remind them to check the Safety Tips for Using Electricity Poster to remember all of the safety rules.
Provide Practice	***Provide students with the Safety Tips for Using Electricity Poster.*** **Level 3:** Have the student independently follow rules to safely use a toaster. **Level 2:** Have the student follow rules to safely use a toaster with support. **Level 1:** Have the student actively participate in following rules to safely use a toaster.
Review	• Review important rules for safely using electricity.

Check Understanding

- **Level 3:** Can the student independently demonstrate safety rules when using an electrical appliance?
- **Level 2:** Can the student safely use an electrical appliance with support? How?
- **Level 1:** Can the student actively participate in safely using an electrical appliance? How?

Instructional Targets

Reading Standards for Informational Text

- ***Range and Level of Text Complexity:*** Read and use grade level and age-appropriate informational materials, including periodicals, articles, social studies and technical texts that are adapted to student reading level.
- ***Key Ideas and Details:*** Answer explicit questions and use support from text to explain the main ideas, and details of an informational text. Answer inferential questions and use support from text to explain the main ideas, details and inferences of an informational text.
- ***Craft and Structure:*** Identify and describe the intent or the purpose of a text (inform, persuade, etc.).

Differentiated Tasks

Level 3 Students will...

- Independently read informational materials, including social studies and technical texts that have been adapted to student reading level.
- Independently answer explicit questions about a text and write, speak or select an answer.
- Independently answer inferential questions about a text and write, speak or select an answer.
- Identify the author's intent or purpose and words, phrases or features that support it.

Level 2 Students will...

- Read supported and shared informational materials, including social studies and technical texts that have been adapted to student reading level.
- Select a picture or text in response to an explicit question about a text.
- Select a picture or text in response to an inferential question about a text.
- With support, identify the intent of the text as to inform, to persuade or to entertain.

Level 1 Students will...

- Actively participate in supported reading of informational materials, including social studies and technical texts that have been adapted to student ability level.
- Select a response to an explicit question from a narrowed field or errorless choice(s).
- Select a response to an inferential question from a narrowed field or errorless choice(s).
- With support, identify the intent of the text from a narrowed field or errorless choice(s).

Topic Connection

In this unit's Chapter Book, ***What Is Science?*** students learn about scientific inquiry and the scientific method. In this chapter, **Mary Jackson**, students learn about Mary Jackson's life and how she helped send the first man into space.

Topic Words

data	problem*	scientific method	solve
experiment	question*	scientist	test
guess*	science		

Literacy Words

author	cover	read*
book	illustration/picture*	title
chapter	illustrator	

* Power Words

Benchmark Assessments

- Reading: Reading Level Assessment
- Reading: Reading with Symbols and all Benchmark Assessments in the Reading section of the GPS
- Early Learning: Phonemic Awareness Phoneme Blending
- Emerging Skills: Early Emerging Reading Rubric

Unit Checkpoint Assessments

- Level 2 and 3 Reading
- Level 1 Combined Content, Questions 1 and 2

An informal assessment of a verbal student's reading abilities may be obtained using the Unit Tools: Reading Observation.

Lesson at a Glance

	Activity 1	Activity 2	Activity 3
Instructional Activities	Read Aloud	Guided / Shared Reading	Answer Questions
See how these activities fit into the **Suggested Unit Pacing** .			
ULS Materials and Resources	**Chapter 2: Mary Jackson** (Level J/K) **Communication Board** **Standards Connection A**	**Chapter 2: Mary Jackson** (Level J/K, F/G or F/G Symbol-Supported) **Communication Board**	**Chapter 2: Mary Jackson** **Communication Board** **Comprehension Questions** (Fill-In and Multiple-Choice, Levels 3-1) **Advanced Questions** **Fill-In Cards** **Standards Connection B** **Standards Connection C**
	Instructional Guides: Active Participation Scripts **Instructional Guides: Instructional Tips** **SymbolStix PRIME**		
Additional Materials			

Instructional Targets

Reading Standards for Informational Text

- ***Range and Level of Text Complexity:*** Read and use grade level and age-appropriate informational materials, including periodicals, articles, social studies and technical texts that are adapted to student reading level.
- ***Key Ideas and Details:*** Answer explicit questions and use support from text to explain the main ideas, and details of an informational text. Answer inferential questions and use support from text to explain the main ideas, details and inferences of an informational text.
- ***Craft and Structure:*** Identify and describe the intent or the purpose of a text (inform, persuade, etc.).

Instructional Routine

? or

Before Reading

- Use Lesson 15, Activity 3 to review the Topic Words: data, experiment, guess, problem, science, scientific method, scientist, solve and test.
- Continue talking about science. Ask a focus question such as, "What is something scientists study—outer space or yoga? Discuss students' responses.
- Display Chapter 4, **Mary Jackson** (Level J/K), and read the title.
- Preview the chapter. Identify the illustration of Mary Jackson. Point out the illustration of Mary with the book about science. Talk with students about how Mary liked to learn about math and science. Then say, "As I read today, it is your job to remember one way Mary Jackson used the scientific method."
- Review the learning goal with students: **I will remember one way Mary Jackson used the scientific method.**

During Reading

Model Fluent Reading

- Read aloud with fluency and expression.
- Call attention to the phrase 'tried again'. Explain that scientists have to keep trying different things when their experiment does not work.

Comment on People, Ideas, Events and Features

- Comment on how the illustrations help you know about how Mary Jackson used the scientific method. For example, on page 36, say, "This illustration shows Mary making a guess. She guessed they could use a wind tunnel to see what would happen to a space shuttle as it traveled. In step 2 of the scientific method, scientists make a hypothesis. A hypothesis is a guess."
- Point out features that indicate the purpose of the text. For example, show the photograph on page 38 and say, "Mary Jackson helped send a space shuttle into space. Because the photograph is based on real-life events, the purpose of the text is to inform."

Discussion Questions

- Read and discuss the questions at the bottom of each page in the chapter. Help students find evidence in the text to support their answer to explicit and inferential questions. For example, on page 37, the discussion question asks, “Why is it important to keep trying when an experiment doesn’t work?” Model how to find the clues in the text to answer the question. Say, “The book says, sometimes it takes a long time to solve a problem. I know that it is important to keep trying when something is hard. I think if they keep trying, they can solve the problem."

After Reading

- Revisit the learning goal. Ask, "What is one way Mary Jackson used the scientific method?"

Level 3: Have the student independently describe one way Mary Jackson used the scientific method. Provide a prompt such as, "What step of the scientific method did Mary use?"

Level 2: Have the student identify one way Mary Jackson used the scientific method. Provide a prompt such as, "Mary made a _____ about the wind tunnel."

Level 1: Have the student identify one way Mary Jackson used the scientific method by making a selection from a narrowed field or errorless choice(s). For example, display the symbol for 'guess'. Ask, "What did Mary make about the wind tunnel?"

- Continue the discussion by discussing what things we know about space because we have sent people into space.
- Use Standards Connection A to identify and discuss the author's purpose for writing this text.

Check Understanding ?

Level 3: Can the student independently describe one way Mary Jackson used the scientific method?
Level 2: Can the student identify one way Mary Jackson used the scientific method? How?
Level 1: Can the student identify one way Mary Jackson used the scientific method by making a selection from a narrowed field or errorless choice(s)?

Instructional Target

Reading Standards for Informational Text

- ***Range and Level of Text Complexity:*** Read and use grade level and age-appropriate informational materials, including periodicals, articles, social studies and technical texts that are adapted to student reading level.

This leveled Chapter Book is presented in three leveled formats: Level J/K, Level F/G and Level F/G Symbol-Supported. Select the level of book and the reading routine appropriate for each student.

Instructional Routine
Guided Reading ? or

Before Reading	• Introduce the chapter by having students share what they have learned about Mary Jackson. • Use the following Topic Words, in conversation about the chapter: data, experiment, guess, problem, question, science, scientific method, scientist, solve and test. Have students locate the words in the chapter. • Read the first three pages aloud, introducing students to the structure of the language. • Review the learning goal with students: **I will read a chapter.**
During Reading	• Listen as students read quietly to themselves. • Monitor fluency. • Model, prompt or support use of skills and strategies. ?
After Reading	• Revisit the learning goal and talk with students about the chapter. • Have students locate the High-Frequency Words: almost, ask, did, knew, made, not, ran, seem and work.

Instructional Routine
Shared Reading ? or

Before Reading	• Introduce the chapter by having students share what they have learned about Mary Jackson. • Use the following Topic Words, in conversation about the chapter: data, experiment, guess, problem, question, science, scientific method, scientist, solve and test. Have students locate the words in the chapter. • Review the learning goal with students: **I will read a chapter.**
During Reading	• Read aloud while students follow along. • Provide supports that allow students to join in the reading. Supports may include choral reading, echo reading or use of a voice output device or eye gaze board. • Monitor print concepts and fluency. • Model and support use of skills and strategies. ?
After Reading	• Revisit the learning goal and talk with students about the chapter. • Have students locate the High-Frequency Words: almost, ask, did, knew, made, not, ran, seem and work.

Check Understanding ?

- **Level 3:** Can the student independently read chapter books adapted to personal reading level?
- **Level 2:** Can the student read chapter books adapted to personal reading level with support?
- **Level 1:** Can the student actively participate in reading chapter books adapted to student ability level? How?

Activity 3 - Answer Questions

Instructional Target

Reading Standards for Informational Text

- ***Key Ideas and Details:*** Answer explicit questions and use support from text to explain the main ideas, and details of an informational text. Answer inferential questions and use support from text to explain the main ideas, details and inferences of an informational text.

Instructional Routine

? or

Introduce	• Introduce this activity by asking a focus question about the chapter. For example, ask, "What did Mary Jackson learn about—space or the ocean?" Discuss students' responses. • Tell students they will now answer other questions about the chapter, **Mary Jackson** . Explain that the answers to these questions can be found in the chapter. Say, "I am going to ask you questions about the chapter, **Mary Jackson**. Your job is to answer the questions. You can use the chapter to help you." • Review the learning goal with students: **I will answer questions about the chapter.**
Model	• Review the chapter. Use Standards Connection B to aid in the review by sequencing information from the text with the main idea and key details. Model how to use the Marker Tool to highlight or circle important words and pictures to help remember key information in the text. • Display the Comprehension Questions. Multiple levels have been provided. Use the level that best meets your students' needs. Read the first question aloud. Model how to find the answer in the chapter by going back and reading the text. For explicit questions, point out how to find the answer to the question based on what the text says. For inferential questions, point out that the answer will not be directly in the text, but you can find the answer based on clues. Model how to find clues to answer an inferential question. • Model how to mark or select the correct answer based on the evidence found in the chapter. For explicit questions, point out the answer that matches a sentence in the text. For inferential questions, show how to select the answer based on the clues found in the text.
Provide Practice	***Choose the most appropriate activity format on the basis of each student's skills and needs.*** **Level 3:** The questions are text only. Have the student answer the questions independently. **Level 2:** The questions are text only and the answers are symbol-supported. Have the student answer the questions by selecting a picture. **Level 1:** The questions are written in a symbol-supported sentence strip format. Have the student answer the questions by selecting from a narrowed field or errorless choice(s).
Review	• Revisit the learning goal. Talk with students about where they found the answers to the questions. Point out that answers to questions can usually be found in the text or pictures. • Use Standards Connection C to further discussion about the text by identifying and describing words and sentences that support the text structure and purpose.

Check Understanding ?

- **Level 3:** Can the student independently answer questions about the chapter?
- **Level 2:** Can the student answer questions about the chapter by selecting a picture?
- **Level 1:** Can the student answer questions about the chapter by selecting a picture? How many choices were presented?

Questions and Answers

space **scientists** **Mary Jackson** **math** **problem**

Fill-In (Levels 3-1)

1. _____ was born in 1921. (Mary Jackson)
2. Mary learned about _____ and science. (math)
3. She guessed math would help solve the _____. (problem)
4. Mary worked with other _____. (scientists)
5. Mary helped send a man into _____. (space)

Multiple-Choice (Levels 3-1)

1. Who is this chapter about? (actress, Mary Jackson*, waitress)
2. What did Mary learn about? (math*, tree, hammer)
3. Who did Mary work with? (bakers, kids, scientists*)
4. What would math help solve? (problems*, trains, books)
5. What is important to know about this chapter?
   - Mary used math to help solve the problem.*
   - Mary did not like math.
   - Mary used a ruler to solve problems.

Fill-In Advanced

1. Mary liked to _____ and learn new things. (think)
2. Mary studied math and physical _____. (science)
3. Finally, Mary got a job working for the _____ program. (space)
4. They did experiments in a _____. (wind tunnel)
5. It wanted to send the space shuttle from _____ into space. (Earth)

Multiple-Choice Advanced

6. How did they figure out where the space shuttle would go? (math problems*, books, roads)
7. What did Mary do as they did experiments? (cooked food, collected data*, played music)
8. What did they send into space? (space shuttle*, dog, car)
9. How did they learn to send a man into space?
   - They cried.
   - They kept trying different experiments.*
   - They did nothing.
10. How did Mary help people?
    - Mary played games.
    - Mary found out more about space. *
    - Mary went to college.

Instructional Targets

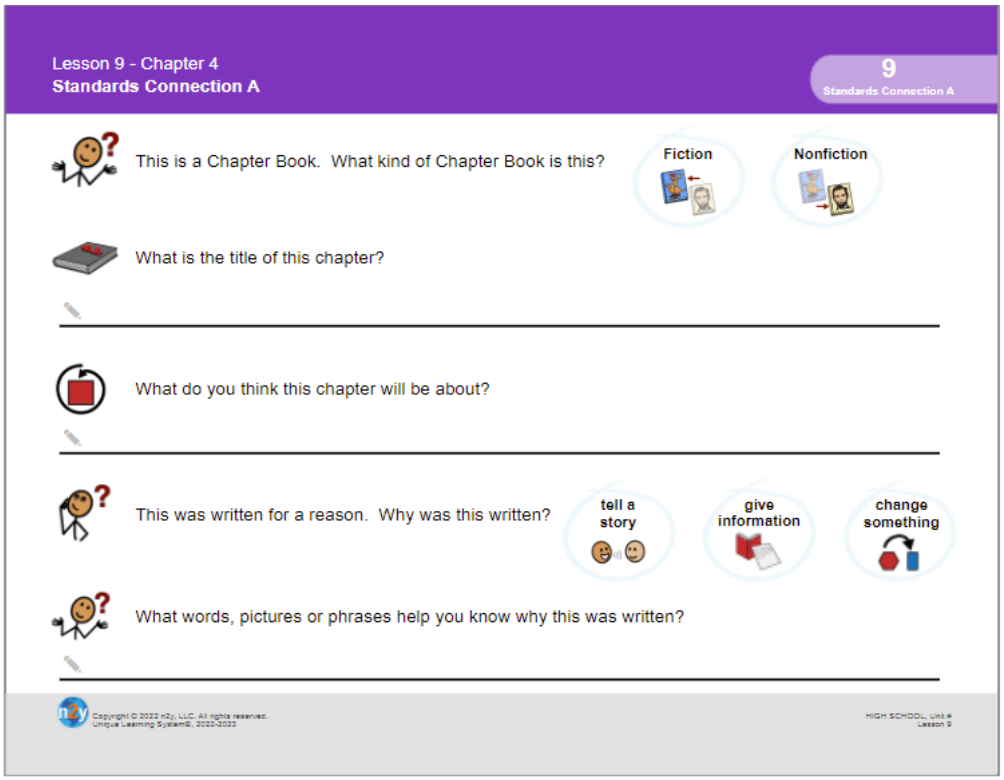
Reading Standards for Informational Text

- ***Craft and Structure:*** Identify and describe the intent or the purpose of a text (inform, persuade, etc.)

Differentiated Tasks

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• Identify the author's intent or purpose and words, phrases or features that support it.	• With support, identify the intent of the text as to inform, to persuade or to entertain.	• With support, identify the intent of the text from a narrowed field or errorless choice(s).

Use Standards Connection A to help students identify features in a text that help the reader know the author's purpose. Tell students to use the book features and pictures to discuss, locate and answer these questions.



Instructional Targets

Reading Standards for Informational Text
- ***Key Ideas and Details:*** Objectively summarize an informational text, including central idea and specific supporting details. Identify the central ideas(s), key details, and how they develop over the course of an informational text.

Standards for Speaking and Listening
- ***Presentation of Knowledge and Ideas:*** Present information in an organized manner appropriate to a task, an audience or a situation.

Standards for Language
- ***Knowledge of Language:*** Demonstrate conventions of language to communicate effectively when speaking or writing in varied contexts.

Differentiated Tasks

Level 3 Students will...

- Summarize the main idea and key details of a text.
- Determine the central idea/ideas of a text, using key details to identify how it develops.
- Communicate on a topic specific to the purpose and audience.
- Apply conventions of language to generate sentences specific to the purpose when speaking or writing.

Level 2 Students will...

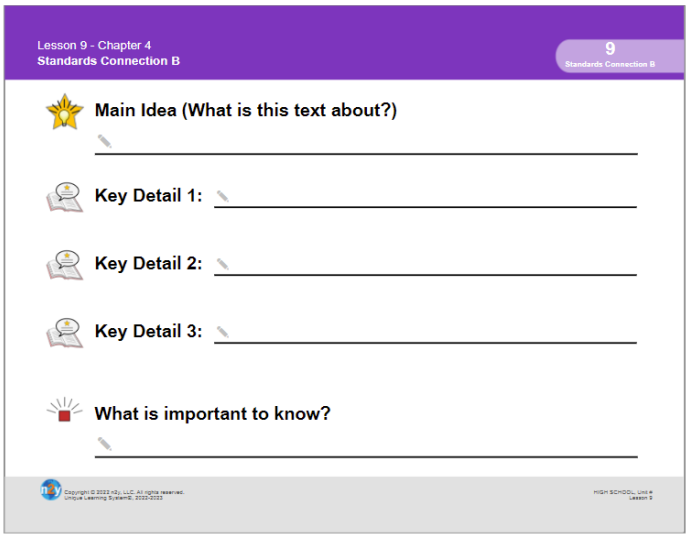
- Use picture supports to retell the main idea and key details from a text.
- Determine the key details to support a provided central idea.
- Communicate on a topic specific to the purpose and audience, using picture supports.
- Use conventions of language to generate a simple sentence when speaking or writing.

Level 1 Students will...

- Summarize key details from a text through an active participation responses (e.g., voice output device, eye gaze choice board).
- Select the central idea from a narrowed field or errorless choice(s).
- Communicate basic information on a topic or experience, using communication technology and picture supports.
- Use language to share an idea with others.

Use Standards Connection B to identify the central idea of the text and summarize and sequence events or details as they occur.

Standards for Language are means of building communication skills. This extended activity, based on book reading, is an excellent tool for developing expressive communication. Incorporate augmentative systems (low tech and high tech) to encourage self-generated sentences and model language expansion.



Instructional Targets

Reading Standards for Informational Text

- ***Craft and Structure:*** Use structures of a text (paragraphs, chapters, etc.) to locate information as it supports the the author's purpose or point of view in a text.

Differentiated Tasks

Level 3 Students will...

- Locate sentences in a text or find steps of a procedure that supports the author's purpose or point of view.

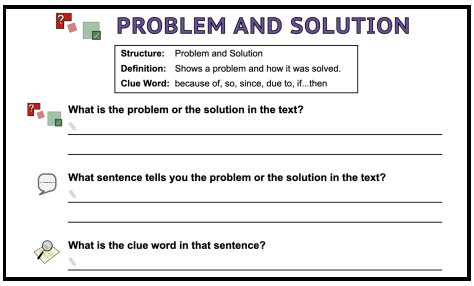
Level 2 Students will...

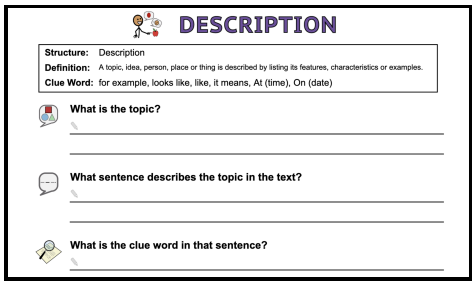
- Locate a sentence that identifies the author's purpose or point of view with support.

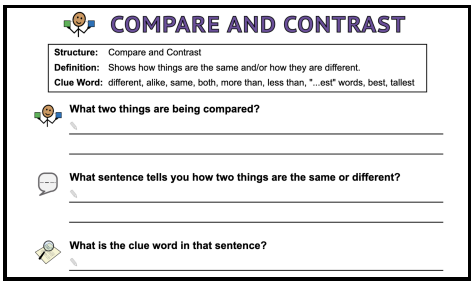
Level 1 Students will...

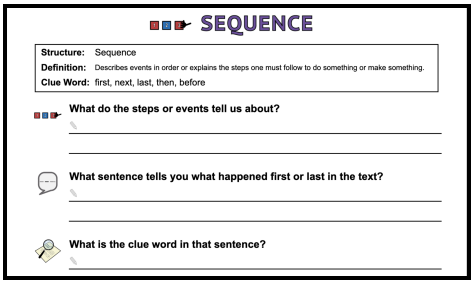
- Given a narrowed field or errorless choice(s), select a picture representing a sentence or a step of a procedure that identifies the author's purpose or point of view.

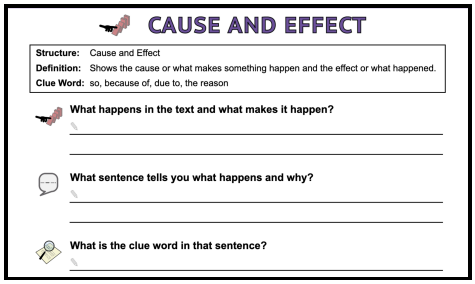
Select a passage in the text from this chapter that lends itself to one of the text structures described in Standards Connection C. Review the text structure description with students. Have students complete the appropriate page for the chosen structure.

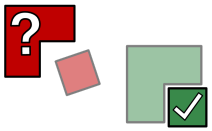






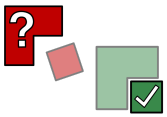






PROBLEM AND SOLUTION

Structure:	Problem and Solution
Definition:	Shows a problem and how it was solved.
Clue Word:	because of, so, since, due to, if...then



What is the problem or the solution in the text?

What sentence tells you the problem or the solution in the text?

What is the clue word in that sentence?

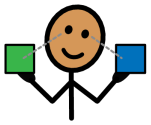
DESCRIPTION

Structure:	Description
Definition:	A topic, idea, person, place or thing is described by listing its features, characteristics or examples.
Clue Word:	for example, looks like, like, it means, At (time), On (date)

What is the topic?

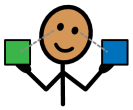
What sentence describes the topic in the text?

What is the clue word in that sentence?



COMPARE AND CONTRAST

Structure:	Compare and Contrast
Definition:	Shows how things are the same and/or how they are different.
Clue Word:	different, alike, same, both, more than, less than, "...est" words, best, tallest



What two things are being compared?

What sentence tells you how two things are the same or different?

What is the clue word in that sentence?

SEQUENCE

Structure:	Sequence
Definition:	Describes events in order or explains the steps one must follow to do something or make something.
Clue Word:	first, next, last, then, before

What do the steps or events tell us about?

What sentence tells you what happened first or last in the text?

What is the clue word in that sentence?

CAUSE AND EFFECT

Structure:	Cause and Effect
Definition:	Shows the cause or what makes something happen and the effect or what happened.
Clue Word:	so, because of, due to, the reason

What happens in the text and what makes it happen?

What sentence tells you what happens and why?

What is the clue word in that sentence?

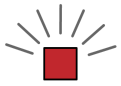
Main Idea (What is this text about?)

_____

Key Detail 1: _____

Key Detail 2: _____

Key Detail 3: _____



What is important to know?

_____

Lesson 10 - Life Skills Application 4
Asking Questions to Get Answers

10

Instructional Targets

Standards for Language
- ***Vocabulary Acquisition and Use:*** Use words acquired through academic and domain-specific sources when speaking and writing.

Personal Life
- ***Problem Solving:*** Apply problem-solving skills to issues related to daily living situations.

Differentiated Tasks

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• Independently use vocabulary words in conversation and in writing. • Solve problems involving real-life daily situations based on personal values, beliefs and experiences.	• Select text or pictures of key vocabulary words as part of a discussion or writing with support. • With support, identify and select appropriate solutions to real-life daily problems.	• Make a selection to indicate a picture of a key vocabulary word within a text or to make a sentence. • Select an option within a daily living situation or scenario.

Topic Connection

In chapter 4 of ***What Is Science?***, students read about Mary Jackson, a scientist. Scientists ask many questions. Mary Jackson asked questions about how to send a person into space. In this lesson, students will solve problems by asking questions to gain information.

Topic Words			Transition Words		
question*	science	scientist	problem	solve	solution

* Power Words

Lesson at a Glance

Activity 1

Instructional Activities

Asking Questions

See how these activities fit into the **Suggested Unit Pacing**.

ULS Materials and Resources

Question Words Poster

Question Word Scenarios
(Level 3, Level 1 & 2)

Fill-In Picture/Word Cards

Picture/Word Cards
Who?
What?
When?
Where?
Why?
How?

Transition Passport: Personal Life / Everyday Communication/Asking a Question

L³ Skills: Life Skills

Additional Materials

Instructional Targets

Standards for Language
- ***Vocabulary Acquisition and Use:*** Use words acquired through academic and domain-specific sources when speaking and writing.

Personal Life
- ***Problem Solving:*** Apply problem-solving skills to issues related to daily living situations.

Instructional Routine

? or

Introduce	• Introduce the activity by asking a focus question about scientists. For example, ask, "What do scientists do when they want to learn new information—ask a question or take a nap?" Discuss students' responses. • Explain that scientists are curious and ask many questions. Asking questions is how scientists learn new things. In science we ask questions and perform experiments to get answers. • Tell students they will be exploring how they can learn information by asking questions. Tell students, "Your job is to solve problems by asking questions." • Review the learning goals with students: **I will solve problems by asking questions.**
Model	• Display the Question Words Poster. Review the main question words and what they mean. Discuss when to use each word. • Practice using the question words to gain information. Have the students use the proper question word to learn about another student. For example, they might ask, "Where did you go this weekend?" • Display the Question Word Scenarios. Two levels are provided. Use the one that meets the majority of your students' needs. Read the first scenario and model how to select a question word to use. For example, say, "Hmmm, someone called for me while I was not home. If I want to find out the person that called, I should ask 'who' to find out who called."
Provide Practice	***Provide students with the Question Words Poster and Question Word Scenarios.*** **Level 3:** Have the student solve problems by asking questions to complete the Question Word Scenarios. **Level 2:** Have the student solve problems by identifying a question word to complete the Question Word Scenarios, with support. **Level 1:** Have the student participate in solving a problem by selecting a question word from a narrowed field or errorless choice(s) a to complete the Question Word Scenarios.
Review	• Review the completed Question Word Scenarios. Emphasize that people gain important information by asking questions. • To extend this lesson, have students ask higher-level thinking questions using the words why and how.

Check Understanding ?

- **Level 3:** Can the student solve problems by asking questions in the Question Word Scenarios?
- **Level 2:** Can the student solve problems by identifying a question word in the Question Word Scenarios? How?
- **Level 1:** Can the student participate in solving a problem by selecting a question word in the Question Word Scenarios? How?

Lesson 11 - Chapter 5
Stephen Hawking

11

Instructional Targets

Reading Standards for Informational Text

- ***Range and Level of Text Complexity:*** Read and use grade level and age-appropriate informational materials, including periodicals, articles, social studies and technical texts that are adapted to student reading level.
- ***Key Ideas and Details:*** Answer explicit questions and use support from text to explain the main ideas, and details of an informational text. Answer inferential questions and use support from text to explain the main ideas, details and inferences of an informational text.
- ***Craft and Structure:*** Identify and describe the intent or the purpose of a text (inform, persuade, etc.).

Differentiated Tasks

Level 3 Students will...

- Independently read informational materials, including social studies and technical texts that have been adapted to student reading level.
- Independently answer explicit questions about a text and write, speak or select an answer.
- Independently answer inferential questions about a text and write, speak or select an answer.
- Identify the author's intent or purpose and words, phrases or features that support it.

Level 2 Students will...

- Read supported and shared informational materials, including social studies and technical texts that have been adapted to student reading level.
- Select a picture or text in response to an explicit question about a text.
- Select a picture or text in response to an inferential question about a text.
- With support, identify the intent of the text as to inform, to persuade or to entertain.

Level 1 Students will...

- Actively participate in supported reading of informational materials, including social studies and technical texts that have been adapted to student ability level.
- Select a response to an explicit question from a narrowed field or errorless choice(s).
- Select a response to an inferential question from a narrowed field or errorless choice(s).
- With support, identify the intent of the text from a narrowed field or errorless choice(s).

Topic Connection

In this unit's Chapter Book, ***What Is Science?***, students learn about the scientific method and famous scientists. In this chapter, **Stephen Hawking**, students will learn what Stephen Hawking taught us about black holes and space.

Topic Words

conclusion	guess*	question*	scientist
data	observe	science	solve
experiment	problem*	scientific method	test

Literacy Words

author	cover	read*
book	illustration/picture*	title
chapter	illustrator	

* Power Words

Benchmark Assessments

- Reading: Reading Level Assessment
- Reading: Reading with Symbols and all Benchmark Assessments in the Reading section of the GPS
- Early Learning: Phonemic Awareness Phoneme Blending
- Emerging Skills: Early Emerging Reading Rubric

Unit Checkpoint Assessments

- Level 2 and 3 Reading
- Level 1 Combined Content, Questions 1 and 2

An informal assessment of a verbal student's reading abilities may be obtained using the Unit Tools: Reading Observation.

Lesson at a Glance

	Activity 1	Activity 2	Activity 3
Instructional Activities	Read Aloud	Guided / Shared Reading	Answer Questions
See how these activities fit into the **Suggested Unit Pacing** .			
ULS Materials and Resources	**Chapter 5: Stephen Hawking** (Level J/K) **Communication Board** **Standards Connection A**	**Chapter 5: Stephen Hawking** (Level J/K, F/G or F/G Symbol-Supported) **Communication Board**	**Chapter 5: Stephen Hawking** **Communication Board** **Comprehension Questions** (Fill-In and Multiple-Choice, Levels 3-1) **Advanced Questions** **Fill-In Cards** **Standards Connection B** **Standards Connection C**
	Instructional Guides: Active Participation Scripts **Instructional Guides: Instructional Tips** **SymbolStix PRIME**		
Additional Materials			

Instructional Targets

Reading Standards for Informational Text

- ***Range and Level of Text Complexity:*** Read and use grade level and age-appropriate informational materials, including periodicals, articles, social studies and technical texts that are adapted to student reading level.
- ***Key Ideas and Details:*** Answer explicit questions and use support from text to explain the main ideas, and details of an informational text. Answer inferential questions and use support from text to explain the main ideas, details and inferences of an informational text.
- ***Craft and Structure:*** Identify and describe the intent or the purpose of a text (inform, persuade, etc.).

Instructional Routine

? or

Before Reading

- Use Lesson 15, Activity 3 to review the Topic Words: conclusion, data, experiment, guess, observe, problem, question, science, scientific method, scientist, solve and test.
- Continue talking about science. Ask a focus question such as, "What can you study in science?" Discuss students' responses.
- Display Chapter 5, **Stephen Hawking** (Level J/K), and read the title.
- Preview the chapter. Point out the picture of Stephen Hawking. Discuss that a black hole can be found in space. Then say, "As I read, it is your job to remember how Stephen Hawking learned about black holes."
- Review the learning goal with students: **I will remember how Stephen Hawking learned about black holes.**

During Reading

Model Fluent Reading

- Read aloud with fluency and expression.
- Call attention to the words 'problem' and 'experiment' as you read.

Comment on People, Ideas, Events and Features

- Comment on how the illustrations help you to see what types of experiments Stephen Hawking did. For example, on page 47 of the chapter, say, "Stephen used math to help him learn more. He had to do different experiments. He used math problems and information from other scientists." Explain that sometimes we can't run a test or observe something, so scientists do something else to experiment.
- Point out features that indicate the purpose of the text. For example, show the photograph on page 44 and say, "Stephen Hawking learned as much as he could about space and black holes. Because the illustration and text tell us about Stephen Hawking's real life and work, the purpose of this text is to inform."

Discussion Questions

- Read and discuss the questions at the bottom of each page in the chapter. Help students find evidence in the text to support their answer to explicit and inferential questions. For example, on page 49, the discussion question asks, “What is important to know about Stephen Hawking?" Model how to find the clues in the text to answer the question. Say, “The book says, Stephen helped us learn about space. I think it's important to know how he helped people. Because of Stephen Hawking we know more about space and how the Earth began."

After Reading

- Revisit the learning goal. Ask, "How did Stephen Hawking learn about black holes?"

Level 3: Have the student independently identify how Stephen Hawking learned about black holes. Provide prompts, such as, "How did Stephen test his guess?"

Level 2: Have the student identify how Stephen Hawking learned about black holes with support. Picture supports such as the Communication Board or the story illustrations may be used as needed.

Level 1: Have the student identify how Stephen Hawking learned about black holes by making a selection from a narrowed field or errorless choice(s). For example, display the symbol for 'experiment'. Ask, "What did Stephen Hawking do?"

- Continue the discussion by talking about things the students may want to learn about in space.
- Use Standards Connection A to identify and discuss the author's purpose for writing this text.

Check Understanding ?

Level 3: Can the student independently identify how Stephen Hawking learned about black holes?

Level 2: Can the student identify how Stephen Hawking learned about black holes? How?

Level 1: Can the student identify how Stephen Hawking learned about black holes by making a selection from a narrowed field or errorless choice(s)?

Instructional Target

Reading Standards for Informational Text

- ***Range and Level of Text Complexity:*** Read and use grade level and age-appropriate informational materials, including periodicals, articles, social studies and technical texts that are adapted to student reading level.

This leveled Chapter Book is presented in three leveled formats: Level J/K, Level F/G and Level F/G Symbol-Supported. Select the level of book and the reading routine appropriate for each student.

Instructional Routine

Guided Reading

or

Before Reading	• Introduce the chapter by having students share what they have learned about Stephen Hawking. • Use the following Topic Words in conversation about the chapter: conclusion, data, experiment, guess, observe, problem, question, science, scientific method, scientist, solve and test. Have students locate the words in the chapter. • Read the first three pages aloud, introducing students to the structure of the language. • Review the learning goal with students: **I will read a chapter.**
During Reading	• Listen as students read quietly to themselves. • Monitor fluency. • Model, prompt or support use of skills and strategies.
After Reading	• Revisit the learning goal and talk with students about the chapter. • Have students locate the High-Frequency Words: ask, did, had, idea, look, made, not, seem and work.

Instructional Routine

Shared Reading

or

Before Reading	• Introduce the chapter by having students share what they have learned about Stephen Hawking. • Use the following Topic Words in conversation about the chapter: conclusion, data, experiment, guess, observe, problem, question, science, scientific method, scientist, solve and test. Have students locate the words in the chapter. • Review the learning goal with students: **I will read a chapter.**
During Reading	• Read aloud while students follow along. • Provide supports that allow students to join in the reading. Supports may include choral reading, echo reading or use of a voice output device or eye gaze board. • Monitor print concepts and fluency. • Model and support use of skills and strategies.
After Reading	• Revisit the learning goal and talk with students about the chapter. • Have students locate the High-Frequency Words: ask, did, had, idea, look, made, not, seem and work.

Check Understanding

- **Level 3:** Can the student independently read chapter books adapted to personal reading level?
- **Level 2:** Can the student read chapter books adapted to personal reading level with support?
- **Level 1:** Can the student actively participate in reading chapter books adapted to student ability level? How?

Activity 3 - Answer Questions

Instructional Target

Reading Standards for Informational Text

- ***Key Ideas and Details:*** Answer explicit questions and use support from text to explain the main ideas, and details of an informational text. Answer inferential questions and use support from text to explain the main ideas, details and inferences of an informational text.

Instructional Routine

? or

Introduce	• Introduce this activity by asking a focus question about the chapter. For example, ask, "What did Stephen Hawking learn about—animals or black holes?" Discuss students' responses. • Tell students they will now answer other questions about the chapter, **Stephen Hawking** . Explain that the answers to these questions can be found in the chapter. Say, "I am going to ask you questions about the chapter, **Stephen Hawking**. Your job is to answer the questions. You can use the chapter to help you." • Review the learning goal with students: **I will answer questions about the chapter.**
Model	• Review the chapter. Use Standards Connection B to aid in the review by sequencing information from the text with the main idea and key details. Model how to use the Marker Tool to highlight or circle important words and pictures to help remember key information in the text. • Display the Comprehension Questions. Multiple levels have been provided. Use the level that best meets your students' needs. Read the first question aloud. Model how to find the answer in the chapter by going back and reading the text. For explicit questions, point out how to find the answer to the question based on what the text says. For inferential questions, point out that the answer will not be directly in the text, but you can find the answer based on clues. Model how to find clues to answer an inferential question. • Model how to mark or select the correct answer based on the evidence found in the chapter. For explicit questions, point out the answer that matches a sentence in the text. For inferential questions, show how to select the answer based on the clues found in the text.
Provide Practice	***Choose the most appropriate activity format on the basis of each student's skills and needs.*** **Level 3:** The questions are text only. Have the student answer the questions independently. **Level 2:** The questions are text only and the answers are symbol-supported. Have the student answer the questions by selecting a picture. **Level 1:** The questions are written in a symbol-supported sentence strip format. Have the student answer the questions by selecting from a narrowed field or errorless choice(s).
Review	• Revisit the learning goal. Talk with students about where they found the answers to the questions. Point out that answers to questions can usually be found in the text or pictures. • Use Standards Connection C to further discussion about the text by identifying and describing words and sentences that support the text structure and purpose.

Check Understanding ?

- **Level 3:** Can the student independently answer questions about the chapter?
- **Level 2:** Can the student answer questions about the chapter by selecting a picture?
- **Level 1:** Can the student answer questions about the chapter by selecting a picture? How many choices were presented?

Questions and Answers

math **computer** **learn** **Stephen Hawking** **stars**

Fill-In (Levels 3-1)

1. _____ liked learning. (Stephen Hawking)
2. Stephen liked to look at the _____. (stars)
3. Stephen used a _____ to talk. (computer)
4. He did _____ problems to learn about black holes. (math)
5. He helped us _____ about space. (learn)

Multiple-Choice (Levels 3-1)

1. Who is this chapter about? (police officer, chef, Stephen Hawking*)
2. What did Stephen like to look at? (stars*, roads, grass)
3. What did Stephen use to talk? (picture, computer*, book)
4. What did Stephen use to learn about black holes? (poems, animals, math*)
5. What is important to know about this chapter?
   - Stephen read books.
   - Stephen went into space.
   - Stephen helped people learn about black holes.*

Fill-In Advanced

1. Stephen was _____, but he did not like school. (smart)
2. Stephen had a hard time walking and _____. (talking)
3. He still had _____ and wanted to share them. (ideas)
4. Stephen knew black holes were in space and they _____ everything in. (pulled)
5. He asked a _____, “Do things in a black hole ever come out?” (question)

Multiple-Choice Advanced

6. What did Stephen do after he had an idea? (made a guess*, ate an apple, went to school)
7. What did Stephen study? (computers, animals, black holes*)
8. What experiments did Stephen do? (did math problems*, grew plants, went inside a black hole)
9. Why did Stephen do experiments about space?
   - He liked to listen to the radio.
   - He was interested in learning more about it.*
   - He did not like animals.
10. How was Stephen Hawking a scientist?
    - He went to school and learned about math.
    - He watched people play sports.
    - He used the scientific method to learn about space.*

Instructional Targets

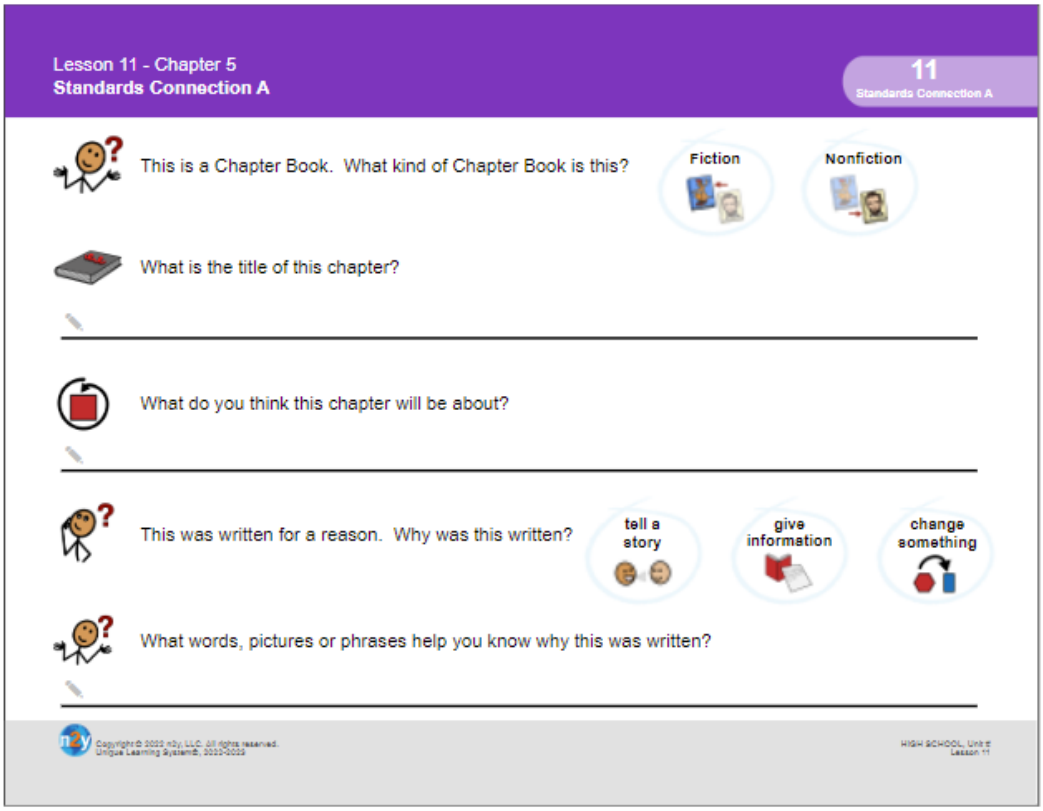
Reading Standards for Informational Text

- ***Craft and Structure:*** Identify and describe the intent or the purpose of a text (inform, persuade, etc.)

Differentiated Tasks

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• Identify the author's intent or purpose and words, phrases or features that support it.	• With support, identify the intent of the text as to inform, to persuade or to entertain.	• With support, identify the intent of the text from a narrowed field or errorless choice(s).

Use Standards Connection A to help students identify features in a text that help the reader know the author's purpose. Tell students to use the book features and pictures to discuss, locate and answer these questions.



Instructional Targets

Reading Standards for Informational Text
- ***Key Ideas and Details:*** Objectively summarize an informational text, including central idea and specific supporting details. Identify the central ideas(s), key details, and how they develop over the course of an informational text.

Standards for Speaking and Listening
- ***Presentation of Knowledge and Ideas:*** Present information in an organized manner appropriate to a task, an audience or a situation.

Standards for Language
- ***Knowledge of Language:*** Demonstrate conventions of language to communicate effectively when speaking or writing in varied contexts.

Differentiated Tasks

Level 3 Students will...

- Summarize the main idea and key details of a text.
- Determine the central idea/ideas of a text, using key details to identify how it develops.
- Communicate on a topic specific to the purpose and audience.
- Apply conventions of language to generate sentences specific to the purpose when speaking or writing.

Level 2 Students will...

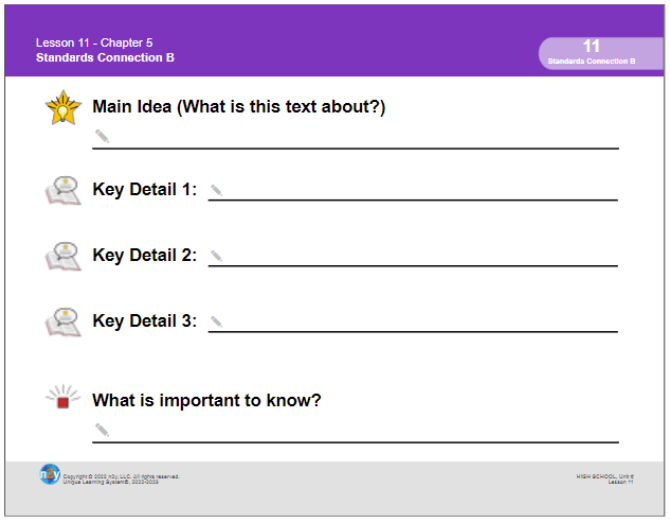
- Use picture supports to retell the main idea and key details from a text.
- Determine the key details to support a provided central idea.
- Communicate on a topic specific to the purpose and audience, using picture supports.
- Use conventions of language to generate a simple sentence when speaking or writing.

Level 1 Students will...

- Summarize key details from a text through an active participation responses (e.g., voice output device, eye gaze choice board).
- Select the central idea from a narrowed field or errorless choice(s).
- Communicate basic information on a topic or experience, using communication technology and picture supports.
- Use language to share an idea with others.

Use Standards Connection B to identify the central idea of the text and summarize and sequence events or details as they occur.

Standards for Language are means of building communication skills. This extended activity, based on book reading, is an excellent tool for developing expressive communication. Incorporate augmentative systems (low tech and high tech) to encourage self-generated sentences and model language expansion.



Instructional Targets

Reading Standards for Informational Text

- ***Craft and Structure:*** Use structures of a text (paragraphs, chapters, etc.) to locate information as it supports the the author's purpose or point of view in a text.

Differentiated Tasks

Level 3 Students will...

- Locate sentences in a text or find steps of a procedure that supports the author's purpose or point of view.

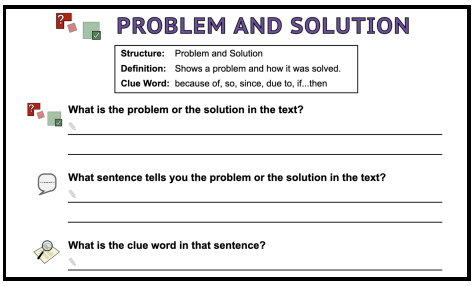
Level 2 Students will...

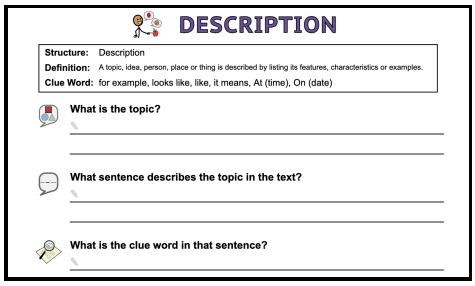
- Locate a sentence that identifies the author's purpose or point of view with support.

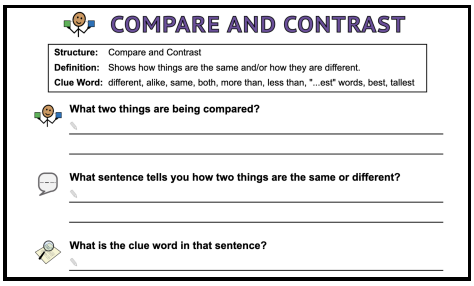
Level 1 Students will...

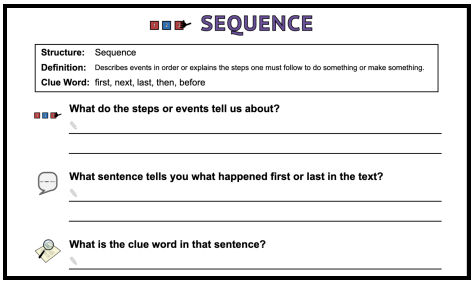
- Given a narrowed field or errorless choice(s), select a picture representing a sentence or a step of a procedure that identifies the author's purpose or point of view.

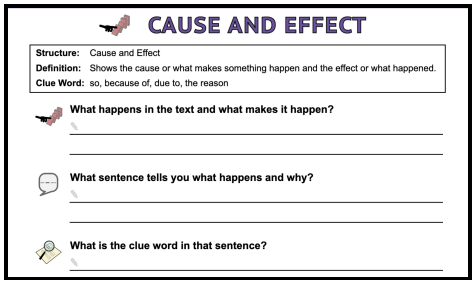
Select a passage in the text from this chapter that lends itself to one of the text structures described in Standards Connection C. Review the text structure description with students. Have students complete the appropriate page for the chosen structure.

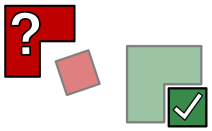






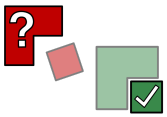






PROBLEM AND SOLUTION

Structure:	Problem and Solution
Definition:	Shows a problem and how it was solved.
Clue Word:	because of, so, since, due to, if...then



What is the problem or the solution in the text?

What sentence tells you the problem or the solution in the text?

What is the clue word in that sentence?

DESCRIPTION

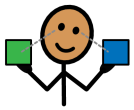
Structure:	Description
Definition:	A topic, idea, person, place or thing is described by listing its features, characteristics or examples.
Clue Word:	for example, looks like, like, it means, At (time), On (date)

What is the topic?

What sentence describes the topic in the text?

What is the clue word in that sentence?

Structure:	Compare and Contrast
Definition:	Shows how things are the same and/or how they are different.
Clue Word:	different, alike, same, both, more than, less than, "...est" words, best, tallest



What two things are being compared?

What sentence tells you how two things are the same or different?

What is the clue word in that sentence?

SEQUENCE

Structure:	Sequence
Definition:	Describes events in order or explains the steps one must follow to do something or make something.
Clue Word:	first, next, last, then, before

What do the steps or events tell us about?

What sentence tells you what happened first or last in the text?

What is the clue word in that sentence?

CAUSE AND EFFECT

Structure:	Cause and Effect
Definition:	Shows the cause or what makes something happen and the effect or what happened.
Clue Word:	so, because of, due to, the reason

What happens in the text and what makes it happen?

What sentence tells you what happens and why?

What is the clue word in that sentence?

Instructional Targets

Standards for Language
- ***Vocabulary Acquisition and Use:*** Use words acquired through academic and domain-specific sources when speaking and writing.

Personal Life
- ***Communication:*** Effectively ask and respond to questions within community, daily living and vocational activities.

Differentiated Tasks

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• Independently use vocabulary words in conversation and in writing. • Share information and opinions, ask and answer questions and make comments during a discussion.	• Select text or pictures of key vocabulary words as part of a discussion or writing with support. • Share information, ask and answer questions and make comments using picture supports during a discussion.	• Make a selection to indicate a picture of a key vocabulary word within a text or to make a sentence. • Participate in discussions using communication technology and picture supports.

Topic Connection

In chapter 5 of ***What Is Science?***, students read about Stephen Hawking, a scientist. Stephen Hawking used a computer to communicate because he was unable to speak. Stephen was still able to ask questions and use the scientific method. In this lesson, students will practice asking questions and making comments through text message.

Topic Words

question*
science
scientific method
scientist

Transition Words

answer
ask
comment
communicate
conversation
discussion
question

* Power Words

Lesson at a Glance

Activity 1

Instructional Activities

Communicating With a Text

See how these activities fit into the **Suggested Unit Pacing**.

ULS Materials and Resources

Tips for Texting Poster

Texting Scenarios
(Level 3, Level 1 & 2)

Fill-In Picture/Word Cards

L³ Skills: Life Skills

Additional Materials

Activity 1 - Communicating With a Text

Instructional Targets

Standards for Language

- ***Vocabulary Acquisition and Use:*** Use words acquired through academic and domain-specific sources when speaking and writing.

Personal Life

- ***Communication:*** Effectively ask and respond to questions within community, daily living and vocational activities.

Instructional Routine

Introduce	• Introduce this activity by asking a focus question about communication. For example, ask, "What are some ways you can talk to other people?" Discuss student responses. • Remind students that there are many ways to communicate with others. Stephen Hawking was unable to talk using his voice, but he was able to talk with a computer. Someone can share information by texting, sending emails, using pictures or more. • Tell students they will be asking a question or making a comment to continue a discussion via text message. • Review the learning goal with students: **I will ask and respond to questions in text messages.**
Model	• Display the Tips for Texting Poster. Read through each tip on the poster, and give examples for each step. For example, say, "The first tip is 'Text at appropriate times.' This means that we should only text during the day. But, we should not text during school, during work, or when we are with other people." Discuss the remaining tips on the poster. • Display the Texting Scenarios activity. Two levels are provided. Use the level most appropriate for your students. Model how to complete the activity. For example, say, "First, read the conversation. Next, think about a question or a comment you could say back. Remember to stay on topic. This text says, 'What are you doing this weekend? I'm going skiing.' Now I will ask a question or make a comment about skiing. I could say, 'Where are you going skiing?'." • Tell students that they will need to read each text conversation, and determine a question or comment that they could text back. • Note: If you have the available technology, have students practice messaging each other on tablets or phones.
Provide Practice	***Provide students with the Tips for Texting Poster and the Texting Scenarios activity.*** **Level 3:** Have the student ask and respond to questions in text messages by completing the Texting Scenarios activity. **Level 2:** Have the student ask and respond to questions in text messages by completing the Texting Scenarios activity, with support. **Level 1:** Have the student participate in asking and responding to questions in text messages by making a selection while completing the Texting Scenarios activity.
Review	• Review the Tips for Texting Poster. Emphasize important tips that your students may struggle to remember, such as, texting at appropriate times or asking parents before sending pictures. • Remind students that texting is a great way to communicate, but we must be responsible when texting.

Check Understanding

- **Level 3:** Can the student ask and respond to questions in text messages?
- **Level 2:** Can the student ask and respond to questions in text messages? How?
- **Level 1:** Can the student participate in asking and responding to questions in text messages by making a selection?

Lesson 13 - Chapter 6
Jane Goodall

13

Instructional Targets

Reading Standards for Informational Text

- ***Range and Level of Text Complexity:*** Read and use grade level and age-appropriate informational materials, including periodicals, articles, social studies and technical texts that are adapted to student reading level.
- ***Key Ideas and Details:*** Answer explicit questions and use support from text to explain the main ideas, and details of an informational text. Answer inferential questions and use support from text to explain the main ideas, details and inferences of an informational text.
- ***Craft and Structure:*** Identify and describe the intent or the purpose of a text (inform, persuade, etc.).

Differentiated Tasks

Level 3 Students will...

- Independently read informational materials, including social studies and technical texts that have been adapted to student reading level.
- Independently answer explicit questions about a text and write, speak or select an answer.
- Independently answer inferential questions about a text and write, speak or select an answer.
- Identify the author's intent or purpose and words, phrases or features that support it.

Level 2 Students will...

- Read supported and shared informational materials, including social studies and technical texts that have been adapted to student reading level.
- Select a picture or text in response to an explicit question about a text.
- Select a picture or text in response to an inferential question about a text.
- With support, identify the intent of the text as to inform, to persuade or to entertain.

Level 1 Students will...

- Actively participate in supported reading of informational materials, including social studies and technical texts that have been adapted to student ability level.
- Select a response to an explicit question from a narrowed field or errorless choice(s).
- Select a response to an inferential question from a narrowed field or errorless choice(s).
- With support, identify the intent of the text from a narrowed field or errorless choice(s).

Topic Connection

In this unit's Chapter Book, ***What Is Science?***, students learn about scientific inquiry and famous scientists. In this chapter, **Jane Goodall** , students will learn about Jane Goodall's contributions to science dealing with animals.

Topic Words

conclusion	problem*	scientific method
data	question*	scientist
observe	science	

Literacy Words

author	cover	read*
book	illustration/picture*	title
chapter	illustrator	

* Power Words

Benchmark Assessments

- Reading: Reading Level Assessment
- Reading: Reading with Symbols and all Benchmark Assessments in the Reading section of the GPS
- Early Learning: Phonemic Awareness Phoneme Blending
- Emerging Skills: Early Emerging Reading Rubric

Unit Checkpoint Assessments

- Level 2 and 3 Reading
- Level 1 Combined Content, Questions 1 and 2

An informal assessment of a verbal student's reading abilities may be obtained using the Unit Tools: Reading Observation.

Lesson at a Glance

	Activity 1	Activity 2	Activity 3
Instructional Activities	Read Aloud	Guided / Shared Reading	Answer Questions
See how these activities fit into the **Suggested Unit Pacing** .			
ULS Materials and Resources	**Chapter 6: Jane Goodall** (Level J/K) **Communication Board** **Standards Connection A**	**Chapter 6: Jane Goodall** (Level J/K, F/G or F/G Symbol-Supported) **Communication Board**	**Chapter 6: Jane Goodall** **Communication Board** **Comprehension Questions** (Fill-In and Multiple-Choice, Levels 3-1) **Advanced Questions** **Fill-In Cards** **Standards Connection B** **Standards Connection C**
	Instructional Guides: Active Participation Scripts **Instructional Guides: Instructional Tips** **SymbolStix PRIME**		
Additional Materials	**Website:** www.janegoodall.org		

Instructional Targets

Reading Standards for Informational Text

- ***Range and Level of Text Complexity:*** Read and use grade level and age-appropriate informational materials, including periodicals, articles, social studies and technical texts that are adapted to student reading level.
- ***Key Ideas and Details:*** Answer explicit questions and use support from text to explain the main ideas, and details of an informational text. Answer inferential questions and use support from text to explain the main ideas, details and inferences of an informational text.
- ***Craft and Structure:*** Identify and describe the intent or the purpose of a text (inform, persuade, etc.).

Instructional Routine

? or

Before Reading

- Use Lesson 15, Activity 3 to review the Topic Word: conclusion, data, observe, problem, question, science, scientific method and scientist.
- Continue talking about scientists. Ask a focus question such as, "What can scientists study—animals or cake?" Discuss students' responses.
- Display Chapter 6, **Jane Goodall** (Level J/K), and read the title.
- Preview the chapter. Identify Jane Goodall as a scientist. Point out the chimpanzee in the illustration. Discuss why there might be an illustration of a chimpanzee. Then say, "As I read today, it is your job to remember how Jane Goodall learned about chimpanzees."
- Review the learning goal with students: **I will remember how Jane Goodall learned about chimpanzees.**

During Reading

Model Fluent Reading

- Read aloud with fluency and expression.
- Call attention to what Jane Goodall taught us about chimpanzees by emphasizing the words 'hugs', 'kisses' and 'tools' as you read.

Comment on People, Ideas, Events and Features

- Comment on how the illustrations help you know how Jane Goodall learned about chimpanzees. For example, show pages 56 and 57 of the book and say, "Jane Goodall watched the chimps every day. She collected data. She wrote down the things she saw them do."
- Point out features that indicate the purpose of the text. For example, the illustration on page 53 is of Jane in Africa. Explain that Jane actually went to Africa. Highlight the words in the text that give information about the illustration. For example, say, "The text on page 54 says 'She made a camp in Africa. At her camp, she watched chimpanzees.'" Both the text and the illustration are giving information of real events, so the purpose of the text is to inform.

Discussion Questions

- Read and discuss the questions at the bottom of each page in the chapter. Help students find evidence in the text to support their answer to explicit and inferential questions. For example, on page 57, the discussion question asks, “Why did Jane collect data?” Model how to find the clues in the text to answer the question. Say, “The book says, Jane wrote down things she saw the chimps do. She looked at her data and made a conclusion. I know data gives you an answer to your question. I think Jane collected data to learn more about chimps."

After Reading

- Revisit the learning goal. Ask, "How did Jane Goodall learn about chimpanzees?

Level 3: Have the student independently describe how Jane Goodall learned about chimpanzees. Provide prompts such as, "What did Jane do every day to learn about the chimps?"

Level 2: Have the student identify one way Jane Goodall learned about chimpanzees. Use questions or the following sentence frame: "Jane ____ the chimps every day." or "Jane ____ down the things she saw the chimps do."

Level 1: Have the student identify one way Jane Goodall learned about chimpanzees by making a selection from a narrowed field or errorless choice(s). For example, display the symbol for 'watch'. Ask, "What did Jane do every day?"

- Continue the discussion by exploring the Jane Goodall Institute web site (www.janegoodall.org).
- Use Standards Connection A to identify and discuss the author's purpose for writing this text.

Check Understanding ?

Level 3: Can the student independently describe how Jane Goodall learned about chimpanzees?

Level 2: Can the student identify one way Jane Goodall learned about chimpanzees? How?

Level 1: Can the student identify one way Jane Goodall learned about chimpanzees by making a selection from a narrowed field or errorless choice(s)?

Instructional Target

Reading Standards for Informational Text

- ***Range and Level of Text Complexity:*** Read and use grade level and age-appropriate informational materials, including periodicals, articles, social studies and technical texts that are adapted to student reading level.

This leveled Chapter Book is presented in three leveled formats: Level J/K, Level F/G and Level F/G Symbol-Supported. Select the level of book and the reading routine appropriate for each student.

Instructional Routine
Guided Reading

Before Reading	• Introduce the chapter by having students share what they have learned about Jane Goodall. • Use the following Topic Words in conversation about the chapter: conclusion, data, observe, problem, question, science, scientific method and scientist. Have students locate the words in the chapter. • Read the first three pages aloud, introducing students to the structure of the language. • Review the learning goal with students: **I will read a chapter.**
During Reading	• Listen as students read quietly to themselves. • Monitor fluency. • Model, prompt or support use of skills and strategies.
After Reading	• Revisit the learning goal and talk with students about the chapter. • Have students locate the High-Frequency Words: ask, close, did, had, idea, knew, look, made, not and work.

Instructional Routine
Shared Reading

Before Reading	• Introduce the chapter by having students share what they have learned about Jane Goodall. • Use the following Topic Words in conversation about the chapter: conclusion, data, observe, problem, question, science, scientific method and scientist. Have students locate the words in the chapter. • Review the learning goal with students: **I will read a chapter.**
During Reading	• Read aloud while students follow along. • Provide supports that allow students to join in the reading. Supports may include choral reading, echo reading or use of a voice output device or eye gaze board. • Monitor print concepts and fluency. • Model and support use of skills and strategies.
After Reading	• Revisit the learning goal and talk with students about the chapter. • Have students locate the High-Frequency Words: ask, close, did, had, idea, knew, look, made, not and work.

Check Understanding

- **Level 3:** Can the student independently read chapter books adapted to personal reading level?
- **Level 2:** Can the student read chapter books adapted to personal reading level with support?
- **Level 1:** Can the student actively participate in reading chapter books adapted to student ability level? How?

Instructional Target

Reading Standards for Informational Text

- ***Key Ideas and Details:*** Answer explicit questions and use support from text to explain the main ideas, and details of an informational text. Answer inferential questions and use support from text to explain the main ideas, details and inferences of an informational text.

Instructional Routine

? or

Introduce	• Introduce this activity by asking a focus question about the chapter. For example, ask, "What did Jane Goodall study—animals or plants?" Discuss students' responses. • Tell students they will now answer other questions about the chapter, **Jane Goodall** . Explain that the answers to these questions can be found in the chapter. Say, "I am going to ask you questions about the chapter, **Jane Goodall** . Your job is to answer the questions. You can use the chapter to help you." • Review the learning goal with students: **I will answer questions about the chapter.**
Model	• Review the chapter. Use Standards Connection B to aid in the review by sequencing information from the text with the main idea and key details. Model how to use the Marker Tool to highlight or circle important words and pictures to help remember key information in the text. • Display the Comprehension Questions. Multiple levels have been provided. Use the level that best meets your students' needs. Read the first question aloud. Model how to find the answer in the chapter by going back and reading the text. For explicit questions, point out how to find the answer to the question based on what the text says. For inferential questions, point out that the answer will not be directly in the text, but you can find the answer based on clues. Model how to find clues to answer an inferential question. • Model how to mark or select the correct answer based on the evidence found in the chapter. For explicit questions, point out the answer that matches a sentence in the text. For inferential questions, show how to select the answer based on the clues found in the text.
Provide Practice	***Choose the most appropriate activity format on the basis of each student's skills and needs.*** **Level 3:** The questions are text only. Have the student answer the questions independently **Level 2:** The questions are text only and the answers are symbol-supported. Have the student answer the questions by selecting a picture. **Level 1:** The questions are written in a symbol-supported sentence strip format. Have the student answer the questions by selecting from a narrowed field or errorless choice(s).
Review	• Revisit the learning goal. Talk with students about where they found the answers to the questions. Point out that answers to questions can usually be found in the text or pictures. • Use Standards Connection C to further discussion about the text by identifying and describing words and sentences that support the text structure and purpose

Check Understanding ?

- **Level 3:** Can the student independently answer questions about the chapter?
- **Level 2:** Can the student answer questions about the chapter by selecting a picture?
- **Level 1:** Can the student answer questions about the chapter by selecting a picture? How many choices were presented?

Questions and Answers

Africa **Jane Goodall** **animals** **chimps** **smart**

Fill-In (Levels 3-1)

1. _____ liked to learn about animals. (Jane Goodall)
2. Jane read books about _____. (animals)
3. Jane wanted to go to _____. (Africa)
4. She could not get close to the _____. (chimps)
5. Jane learned that chimps are _____. (smart)

Multiple-Choice (Levels 3-1)

1. Who is this chapter about? (Jane Goodall*, James West, Mary Jackson)
2. What did Jane read books about? (jobs, animals*, clothes)
3. Where did Jane want to go? (home, Africa*, school)
4. What could Jane not get close to? (elephants, trees, chimps*)
5. What is important to know about this chapter?
   - Jane did not like animals.
   - Jane taught people about animals.*
   - Jane wanted to stay home.

Fill-In Advanced

1. Jane saved her _____ to go to Africa. (money)
2. Jane made a _____ in Africa to watch chimpanzees. (camp)
3. Jane gave all of the chimps _____. (names)
4. While _____ the chimps Jane had a problem. (observing)
5. Jane asked a question, “How can I get _____ to the chimps?” (close)

Multiple-Choice Advanced

6. Why wouldn’t the chimps let Jane get close? (They were happy. They were scared.* They were hungry.)
7. How did Jane get close to the chimps? (rolled down a hill, drove up to them, got closer each day*)
8. What did Jane do as she watched the chimps? (read a book, collected data*, nothing)
9. Why did the chimps let Jane get closer?
   - Jane smelled good.
   - They started to trust her.*
   - They wanted to hug her.
10. How did Jane learn so much about the chimps?
    - She spent a lot of time studying and observing them.*
    - She watched them take a bath.
    - She took them home and fed them.

Instructional Targets

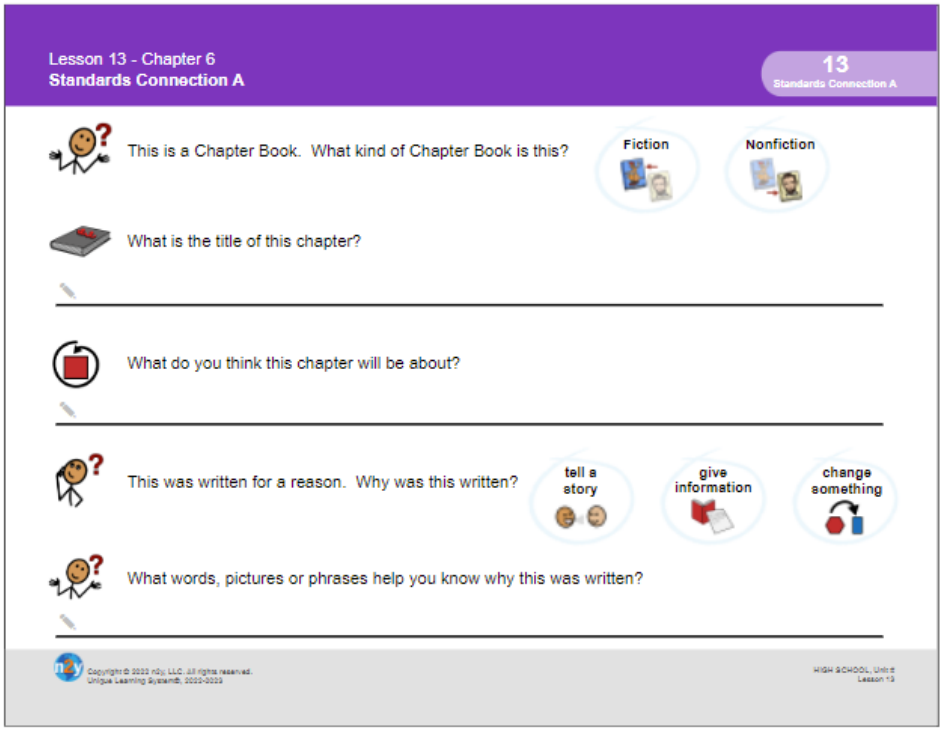
Reading Standards for Informational Text

- ***Craft and Structure:*** Identify and describe the intent or the purpose of a text (inform, persuade, etc.)

Differentiated Tasks

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• Identify the author's intent or purpose and words, phrases or features that support it.	• With support, identify the intent of the text as to inform, to persuade or to entertain.	• With support, identify the intent of the text from a narrowed field or errorless choice(s).

Use Standards Connection A to help students identify features in a text that help the reader know the author's purpose. Tell students to use the book features and pictures to discuss, locate and answer these questions.



Instructional Targets

Reading Standards for Informational Text
- ***Key Ideas and Details:*** Objectively summarize an informational text, including central idea and specific supporting details. Identify the central ideas(s), key details, and how they develop over the course of an informational text.

Standards for Speaking and Listening
- ***Presentation of Knowledge and Ideas:*** Present information in an organized manner appropriate to a task, an audience or a situation.

Standards for Language
- ***Knowledge of Language:*** Demonstrate conventions of language to communicate effectively when speaking or writing in varied contexts.

Differentiated Tasks

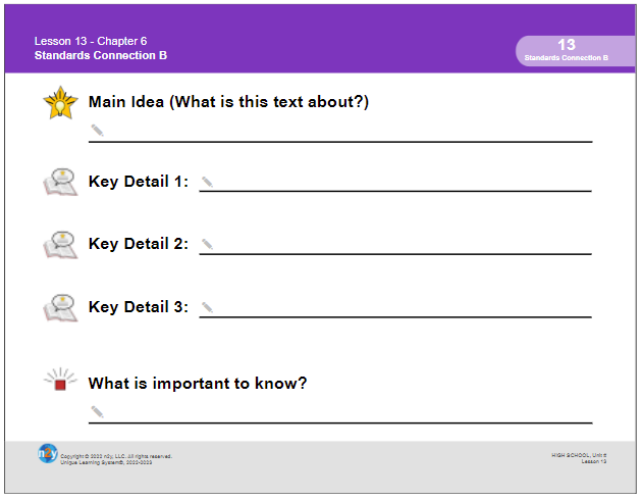
Level 3 Students will...
- Summarize the main idea and key details of a text.
- Determine the central idea/ideas of a text, using key details to identify how it develops.
- Communicate on a topic specific to the purpose and audience.
- Apply conventions of language to generate sentences specific to the purpose when speaking or writing.

Level 2 Students will...
- Use picture supports to retell the main idea and key details from a text.
- Determine the key details to support a provided central idea.
- Communicate on a topic specific to the purpose and audience, using picture supports.
- Use conventions of language to generate a simple sentence when speaking or writing.

Level 1 Students will...
- Summarize key details from a text through an active participation responses (e.g., voice output device, eye gaze choice board).
- Select the central idea from a narrowed field or errorless choice(s).
- Communicate basic information on a topic or experience, using communication technology and picture supports.
- Use language to share an idea with others.

Use Standards Connection B to identify the central idea of the text and summarize and sequence events or details as they occur.

Standards for Language are means of building communication skills. This extended activity, based on book reading, is an excellent tool for developing expressive communication. Incorporate augmentative systems (low tech and high tech) to encourage self-generated sentences and model language expansion.



Instructional Targets

Reading Standards for Informational Text

- ***Craft and Structure:*** Use structures of a text (paragraphs, chapters, etc.) to locate information as it supports the the author's purpose or point of view in a text.

Differentiated Tasks

Level 3 Students will...

- Locate sentences in a text or find steps of a procedure that supports the author's purpose or point of view.

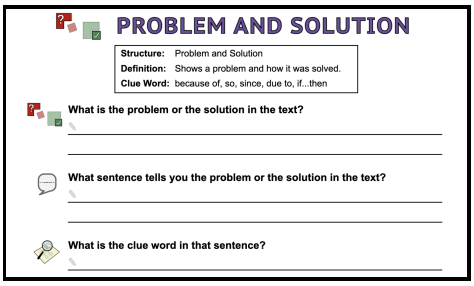
Level 2 Students will...

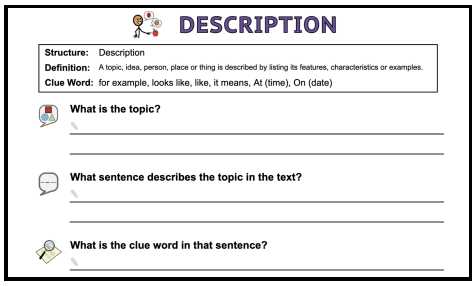
- Locate a sentence that identifies the author's purpose or point of view with support.

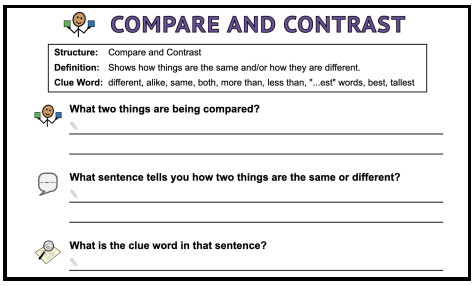
Level 1 Students will...

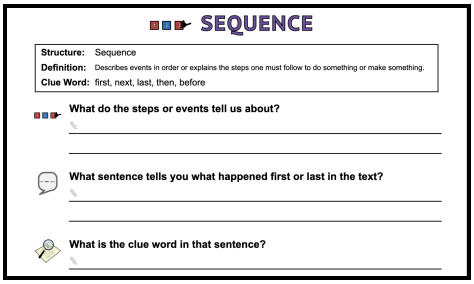
- Given a narrowed field or errorless choice(s), select a picture representing a sentence or a step of a procedure that identifies the author's purpose or point of view.

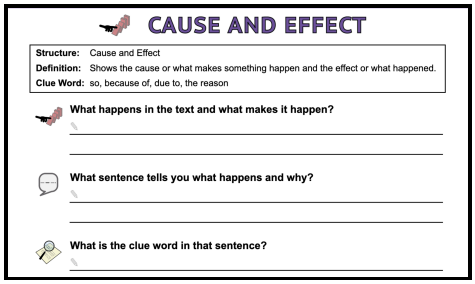
Select a passage in the text from this chapter that lends itself to one of the text structures described in Standards Connection C. Review the text structure description with students. Have students complete the appropriate page for the chosen structure.

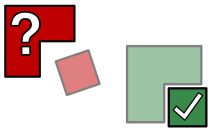






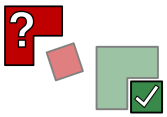






PROBLEM AND SOLUTION

Structure:	Problem and Solution
Definition:	Shows a problem and how it was solved.
Clue Word:	because of, so, since, due to, if...then



What is the problem or the solution in the text?

What sentence tells you the problem or the solution in the text?

What is the clue word in that sentence?

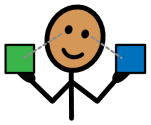
DESCRIPTION

Structure:	Description
Definition:	A topic, idea, person, place or thing is described by listing its features, characteristics or examples.
Clue Word:	for example, looks like, like, it means, At (time), On (date)

What is the topic?

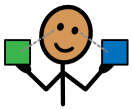
What sentence describes the topic in the text?

What is the clue word in that sentence?



COMPARE AND CONTRAST

Structure:	Compare and Contrast
Definition:	Shows how things are the same and/or how they are different.
Clue Word:	different, alike, same, both, more than, less than, "...est" words, best, tallest



What two things are being compared?

_____

_____

What sentence tells you how two things are the same or different?

_____

_____

What is the clue word in that sentence?

_____

SEQUENCE

Structure:	Sequence
Definition:	Describes events in order or explains the steps one must follow to do something or make something.
Clue Word:	first, next, last, then, before

What do the steps or events tell us about?

What sentence tells you what happened first or last in the text?

What is the clue word in that sentence?

CAUSE AND EFFECT

Structure:	Cause and Effect
Definition:	Shows the cause or what makes something happen and the effect or what happened.
Clue Word:	so, because of, due to, the reason

What happens in the text and what makes it happen?

What sentence tells you what happens and why?

What is the clue word in that sentence?

Volunteering for the Animal Shelter

Instructional Targets

Standards for Language

- ***Vocabulary Acquisition and Use:*** Use words acquired through academic and domain-specific sources when speaking and writing.

Employability

- ***Job Awareness:*** Recognize and participate in job training opportunities in the community.

Differentiated Tasks

Level 3 Students will...

- Independently use vocabulary words in conversation and in writing.
- Participate in and review community job training opportunities.

Level 2 Students will...

- Select text or pictures of key vocabulary words as part of a discussion or writing with support.
- Participate in supported community job training opportunities.

Level 1 Students will...

- Make a selection to indicate a picture of a key vocabulary word within a text or to make a sentence.
- Engage in school and classroom supported participation jobs.

Topic Connection

In chapter 6 of ***What Is Science?***, students read about the scientist Jane Goodall. Jane Goodall observed chimpanzees in Africa. From her data, we learned more about animals. In this lesson, students will have the opportunity to learn animal safety techniques and participate in job training opportunities related to working with animals.

Topic Words

data	science
observe	scientist

Transition Words

community	opportunity	training
job	skills	work

* Power Words

Lesson at a Glance

	Activity 1	Activity 2
Instructional Activities	Working With Animals	Preparing to Volunteer at the Animal Shelter
	See how these activities fit into the **Suggested Unit Pacing** .	
ULS Materials and Resources	**Animal Safety Rules Poster** **Animal Safety Scenarios** **Fill-In Cards**	**Jobs for the Animal Shelter Survey**
	L³ Skills: Life Skills	
Additional Materials		

Instructional Targets

Standards for Language
- ***Vocabulary Acquisition and Use:*** Use words acquired through academic and domain-specific sources when speaking and writing.

Employability
- ***Job Awareness:*** Recognize and participate in job training opportunities in the community.

Instructional Routine

Introduce	• Introduce the activity by asking a focus question about animals. For example, ask, "What do animals need—food or clothing?" Discuss the students' responses. • Talk with students about Dr. Jane Goodall's work with animals. Her work helped us to learn about chimpanzees. Discuss how Jane Goodall was very careful when she worked with the chimpanzees. She knew how to treat them. • Tell students they will be reviewing safety rules people should follow when working with animals. For example, say, "You will be learning about safety rules when working with animals. Your job is to remember a safety rule when working with animals." • Review the learning goal with students: **I will remember one safety rule when working with animals.**
Model	• Display the Animal Safety Poster. Discuss each rule. Talk about how the rules are in place to keep both the animals and the people around them safe. • Explain the reasoning behind each rule. For example, ask, "Why do you think we should not feed an animal without permission?" Talk about how some foods may be poisonous to certain animals and make them sick. • Display the Animal Safety Scenarios. Read the first scenario aloud. Model how to correctly fill out the Animal Safety Scenarios by referring to the Animal Safety Poster.
Provide Practice	***Provide each student with the Animal Safety Rules Poster and the Animal Safety Scenarios.*** **Level 3:** Have the student participate in job training opportunities by identifying safety rules when working with animals by filling in the Animal Safety Scenarios. **Level 2:** Have the student participate in job training opportunities by identifying one safety rule when working with animals by filling in the Animal Safety Scenarios with support. **Level 1:** Have the student participate in identifying one safety rule when working with animals by making a selection on the Animal Safety Scenarios from a narrowed field or errorless choice(s).
Review	• Display and review the answers to the Animal Safety Scenarios. • Discuss when these safety rules should be used and applied (at home with pets, meeting a pet on the street, at the zoo, etc.)

Check Understanding

- **Level 3:** Can the student participate in job training opportunities by identifying safety rules when working with animals?
- **Level 2:** Can the student participate in job training opportunities by identifying one safety rule when working with animals? How?
- **Level 1:** Can the student participate in identifying one safety rule when working with animals by making a selection from a narrowed field or errorless choice(s)?

Activity 2 - Preparing to Volunteer at the Animal Shelter

Instructional Targets

Standards for Language
- ***Vocabulary Acquisition and Use:*** Use words acquired through academic and domain-specific sources when speaking and writing.

Employability
- ***Job Awareness:*** Recognize and participate in job training opportunities in the community.

Instructional Routine

Introduce	• Introduce the activity by asking a focus question about animals. For example, ask, "Who is someone that works with animals—a teacher or a zookeeper?" Discuss the students' responses. • Remind students that Jane Goodall worked with the chimpanzees. Discuss how we too can help animals by volunteering at a local animal shelter. Talk about how we can volunteer at different places to gain experience for different jobs. • Tell students they will be discussing various animal volunteer opportunities and picking one to complete. For example, say, "You will be learning about volunteer jobs at the animal shelter. Your job is to decide which job you are interested in to participate in job training." • Review the learning goal with students: **I will participate in job training for an animal shelter job.**
Model	• Display the Jobs for the Animal Shelter Survey and describe the jobs. • Explain that when you participate in job training, you will be given responsibilities or things you must do. When looking for job training you can volunteer or shadow someone who has a job. Explain that you should look for job training opportunities that you will enjoy. Everyone will want to try different jobs. • Discuss the responsibilities of volunteering at the local animal shelter. Model filling out the Jobs for the Animal Shelter Survey by placing check marks next to the jobs that interest you. • Select one of the jobs that does not require working directly with animals and model how to complete the job in the classroom. Have students practice participating in the job in the classroom.
Provide Practice	***Provide each student with the Jobs for the Animal Shelter Survey.*** **Level 3:** Have the student participate in job training for an animal shelter job by completing the Jobs for the Animal Shelter Survey and practicing the job in the classroom. **Level 2:** Have the student participate in job training for an animal shelter job by completing the Jobs for the Animal Shelter Survey and practicing the job in the classroom, with support. **Level 1:** Have the student actively participate in job training by practicing a school or classroom job, with support.
Review	• Review the Jobs for the Animal Shelter Survey and discuss why students chose certain jobs over others. • If possible, set up a field trip to visit the local animal shelter or host a shelter or organization as a guest speaker. • Carry out one of the volunteering activities, such as making a dog toy, for students to fully participate in a volunteer or job training activity.

Check Understanding

- **Level 3:** Can the student participate in job training for an animal shelter job?
- **Level 2:** Can the student participate in job training for an animal shelter job? How?
- **Level 1:** Can the student actively participate in job training by practicing a school or classroom job?

Instructional Targets

Standards for Language

- ***Vocabulary Acquisition and Use:*** Use words acquired through academic and domain-specific sources when speaking and writing. Use reference materials (dictionaries [printed/online], glossaries) to determine the meaning and part of speech of unknown words. Use reference materials (dictionaries [printed/online], thesauruses) to determine the synonym for a word. Use reference materials (dictionaries [online/printed], glossaries) to determine the pronunciation of unknown words.

Differentiated Tasks

Level 3 Students will...

- Independently use vocabulary words in conversation and in writing.
- Use reference materials, such as a glossary, or a dictionary, to verify the meaning and part of speech of an unknown word.
- Use reference materials, such as a thesaurus or dictionary, to find a synonym for a word.
- Use reference materials, such as a glossary or a dictionary, to find the pronunciation of an unknown word.

Level 2 Students will...

- Select text or pictures of key vocabulary words as part of a discussion or writing with support.
- Select pictures or words in a dictionary to verify a definition and part of speech of a word.
- Select a picture or word whose meaning is similar to that of another word.
- Find the correct pronunciation of a word when presented with a glossary or a dictionary.

Level 1 Students will...

- Make a selection to indicate a picture of a key vocabulary word within a text or to make a sentence.
- Given a narrowed field or errorless choice(s), make a selection to indicate a picture of a word that is in the dictionary.
- Given a narrowed field or errorless choice(s), make a selection to indicate a picture of a word whose meaning is similar to that of another word.
- Given a narrowed field or errorless choice(s), make a selection to indicate a picture of a word with pronunciation that is in a dictionary.

Topic Connection

In this unit, students are learning about science, scientists and the scientific method. In this lesson, students will learn High-Frequency Words and vocabulary words that will help them read, write and talk about these topics.

High-Frequency Word Lists

List 1: did*, had*, not*, what*, who*, work*
List 2: five*, look*, made*, ran, seem, too*
List 3: almost*, ask*, close, idea*, knew, longer

Topic Words

conclusion	observe	scientific method
data	problem*	scientist
experiment	question*	solve
guess*	science	test

* Power Words

Benchmark Assessments

- Initial Letters
- Word Recognition List 1
- Word Recognition List 2
- Word Recognition List 3
- Letter ID - Uppercase
- Letter ID - Lowercase
- Letter Match

Unit Checkpoint Assessments

- Level 3 - 2, Word Recognition

Lesson at a Glance

	Activity 1.1-1.3	Activity 2.1-2.3	Activity 3.1-3.4	Activity 4
Instructional Activities	High-Frequency Words	Review High-Frequency Words	Defining Vocabulary	Play Vocabulary Game
ULS Materials and Resources	**High Frequency Word Maps** (Level 3, Level 1 & 2) **High-Frequency Word Cards** **List 1.1:** did, had, not, what, who, work **List 1.2:** five, look, made, ran, seem, too **List 1.3:** almost, ask, close, idea, knew, longer	**Sentence Completion Cards** (Level 3, Level 1 & 2) **High-Frequency Word Cards** **List 2.1:** did, had, not, what, who, work **List 2.2:** five, look, made, ran, seem, too **List 2.3:** almost, ask, close, idea, knew, longer	**Vocabulary Word Maps** (Level 3, Level 1 & 2) **Glossary** **Word Definition Cards** **Group 3.1:** science, scientist, scientific method **Group 3.1:** problem, question, guess **Group 3.1:** observe, test, experiment **Group 3.1:** solve, data, conclusion	**Vocabulary Word Maps** **Quiz Game Board** **Answer Key** **Money Amount Cover Cards** **Picture/Word Answer Cards** **"What Is" Answer Board**

See how these activities fit into the **Suggested Unit Pacing**.

SymbolStix PRIME
Instructional Guides: Vocabulary
Instructional Tools: Dolch/Fry Word Lists
Instructional Guides: Word Study
L³ Skills: Language Arts Skills
Word Journal Cover and Tabs

Additional Materials

Classroom/Student Word Journal

Activity 1.1-1.3 - High-Frequency Words

Instructional Target

Reading Standards for Language

- ***Vocabulary Acquisition and Use:*** Use words acquired through academic and domain-specific sources when speaking and writing.

Instructional Routine

? or

Introduce	• Introduce the activity by asking a focus question about the common words. For example, ask, "What is a word you see a lot when reading—did or potato?" Discuss students' responses. • Tell students that they will be learning some new words that are used a lot when reading and writing. Say, "We are going to learn some new words. Today, your job is to identify and use the word." • Review the learning goal with students: **I will identify and use words.**
Model	• Use a High-Frequency Word in a sentence. Emphasize the word in the sentence. For example, "He liked to look at the stars." When possible, write the sentence and underline the High-Frequency Word. Define the word. For example, 'look' means to use your eyes to see something." • Display the High-Frequency Word Card for the word. Say and spell the word. For example, display 'look' and say, "This word is 'look', l-o-o-k, look." Movement and/or chanting/singing can be used to encourage memory of each word. • Point out familiar letter-sounds or word parts in the word. For example, point to the 'l' and say, "This is the letter 'l'. The sound for 'l' is /l/." • Display the High-Frequency Word Map for the word. Click on the speaker to hear the word. Model how to write or select the word, select a matching picture and how to use or find the word in a sentence. • Continue the same procedure with the remaining words from List 1, List 2 and List 3. (Lists should be chosen based on individual student's ability. New words from lists can be introduced at a pace that is acceptable to class and individual student needs.)
Provide Practice	***Provide students with the High Frequency Word Maps.*** **Level 3:** Have the student independently identify and use targeted High-Frequency Words in conversation and in writing by completing the High Frequency Word Maps. **Level 2:** Have the student select text or pictures of key High-Frequency Words as part of a discussion or writing to complete the High Frequency Word Maps with support. **Level 1:** Have the student identify a picture of a key High-Frequency Word within a text by making a selection from a narrowed field or errorless choice(s).
Review	• Display targeted High-Frequency Words and have students add the words to their Word Journal behind the High-Frequency Word Tab. A Word Journal Cover and Word Tabs can be found in Teacher Reference Materials. • Prompt students to locate and read these words in the stories and to use these words in their daily communication and writing. • Consider adding words to a class word wall or a student word journal for students to refer back to.

Check Understanding ?

- **Level 3:** Can the student independently identify and use High-Frequency Words in conversation and in writing?
- **Level 2:** Can the student select text or pictures of High-Frequency Words as part of a discussion or writing?
- **Level 1:** Can the student identify a picture of a High-Frequency Word within a text by making a selection from a narrowed field or errorless choice(s)?

Activity 2.1-2.3 - Review High-Frequency Words

Instructional Target

Reading Standards for Language

- ***Vocabulary Acquisition and Use:*** Use words acquired through academic and domain-specific sources when speaking and writing.

Instructional Routine

? or

Introduce	***Spend approximately 10 minutes per day reviewing High-Frequency Words.*** • Introduce the activity by asking a focus question about the High-Frequency Words. For example, ask, "Which word did we learn this week—'look' or 'hot'?" Discuss students' responses. If keeping a word wall or student word journal, have students find the new words they have learned. • Tell students they are going to use High-Frequency Words to complete a sentence. Say, "Today, your job is to use High-Frequency Words to complete a sentence." • Review the learning goal with students: **I will use High-Frequency Words to complete a sentence.**
Model	• Display and review a word from List 1, List 2 or List 3 in the Word Journal. For example, display the word card for 'did'. Say, "This is the word 'did', d-i-d, 'did'." Have students read or repeat the word. If movement or chanting/singing was used to initially introduce the word, remember to use it to provide auditory, visual and tactual cues to students as needed. • Review the meaning of the word, and point out sounds in the word. Use the word in the a sentence. Have students share what sounds they remember are in the word, or give an example sentence. • Display a Sentence Completion Card. Read the sentence and point out the blank. Tell students that a High-Frequency Word will finish the sentence. Model how to select the correct word to complete the sentence. Read the sentence again with the word in its place to make sure the sentence makes sense. Use the Marker Tool to write the word in the blank to show the completed sentence. • Continue reviewing High-Frequency Words using the steps above.
Provide Practice	***Provide students with the Sentence Completion Cards.*** **Level 3:** Have the student independently use High-Frequency Words to complete a sentence. **Level 2:** Have the student select text or pictures of High-Frequency Words to complete a sentence with support. **Level 1:** Have the student select a High-Frequency Word from a narrowed field or errorless choice(s) to make a sentence.
Review	• Continue working with the High-Frequency Word Journal by reviewing previously taught High-Frequency Words. • Point out when targeted High-Frequency Words are used in conversation. • Additional word study activities are provided in the **Instructional Guides: Word Study** .

Check Understanding ?

- **Level 3:** Can the student independently use High-Frequency Words to complete a sentence?
- **Level 2:** Can the student select text or pictures of High-Frequency Words to complete a sentence with support?
- **Level 1:** Can the student select a High-Frequency Word from a narrowed field or errorless choice(s) to make a sentence?

Instructional Targets

Reading Standards for Language

- ***Vocabulary Acquisition and Use:*** Use reference materials (dictionaries [printed/online], glossaries) to determine the meaning and part of speech of unknown words. Use reference materials (dictionaries [printed/online], thesauruses) to determine the synonym for a word. Use reference materials (dictionaries [online/printed], glossaries) to determine the pronunciation of unknown words.

Instructional Routine

? or

Introduce

- Introduce the activity by asking a focus question about reference materials. For example, ask, "Where can we look to find out what a word means—a dictionary or a watch?" Discuss students' responses.
- Tell students that you have new vocabulary words to learn. Say, "We are going to learn some new words. Today, your job is to find the word(s), what the word(s) mean and other things about the word."
- Review the learning goal with students: **I will define words (I will tell others what a word means).**

Model

- Display the Glossary Page. Explain to students that there are resources we can use to learn about a word. Using the Glossary Page, show students how they can find what a word means, how to say the word and what part of speech. For example, point to a word and say, "A dictionary or glossary can tell us the definition of the word. Under the word is the definition. This word is 'solve'. The glossary says solve means to find out an answer."
  Talk about other resources a student could use to learn about a word such as a dictionary, a thesaurus or online resources.
- Point out the written pronunciation and the speaker. Tell students that they can learn how to say the word by clicking on the speaker or using the written pronunciation to sound out the word. Model each option for the students.
- Display the Vocabulary Word Map for a word. Read the word. Pick the picture that best represents the word. Model how to use the glossary or another resource to complete the Vocabulary Word Map. For example, say, "This word is 'question'. I need to find a definition for question. I can look in the glossary for a definition. A question is something asked to find out information."
- Note: Vocabulary Word Maps are grouped based on the Quiz Game Board categories.

Provide Practice

Provide students with the Vocabulary Word Maps and the glossary or other reference materials.

Level 3: Have the student use reference materials, such as a glossary or dictionary, to find the meaning, part of speech, synonym and pronunciation of a word to complete a Vocabulary Word Map.

Level 2: Have the student select a word or picture when using a dictionary or glossary to find the meaning, part of speech, similar meaning word and pronunciation of a word.

Level 1: Have the student identify a picture of a word in a dictionary by making a selection from a narrowed field or errorless choice(s). Have the student identify a picture of a word whose meaning is similar to that of another word by making a selection from a narrowed field or errorless choice(s).

Review

- Review and display targeted vocabulary words in the classroom. Consider having students make a word journal by keeping the Vocabulary Word Maps in a binder or folder.
- Prompt students to locate and review meaning of the unit vocabulary words in various lessons.
- Point out when unit vocabulary is used in conversation.

Check Understanding ?

- **Level 3:** Can the student use reference materials, such as a glossary or dictionary, to find the meaning, part of speech, synonym and pronunciation of a word?
- **Level 2:** Can the student select a word or picture when using a dictionary or glossary to find the meaning, part of speech, similar meaning word and pronunciation of a word?
- **Level 1:** Can the student identify a picture of a word in a dictionary by making a selection from a narrowed field or errorless choice(s)? Can the student identify a picture of a word whose meaning is similar to that of another word by making a selection from a narrowed field or errorless choice(s)?

Instructional Targets

Reading Standards for Language

- ***Vocabulary Acquisition and Use:*** Use words acquired through academic and domain-specific sources when speaking and writing.

Instructional Routine

? or

Introduce	• Introduce the activity by asking a focus question about the unit vocabulary words. For example, ask, "What is a scientific test done to answer a question?" Discuss students' responses. • Review the unit vocabulary words and their meanings, using Vocabulary Word Card, Glossary or Vocabulary Word Maps. • Tell students that they will play a game with the unit vocabulary. For example, say, "We are going to play a game with our new vocabulary words. Today, your job is to name (define) a word described." • Review the learning goal with students: **I will name a word being described.**
Model	• Model choosing a category and point amount. • Read, have a student read or use text to speech to read the description aloud. • Model the correct answer form (What is..., How is..., etc.) or the selection of an answer card. Use the "What Is" Answer Board as a visual.
Provide Practice	***Remind students that they will take turns choosing a category. Depending on group level, students can take turns or "buzz in" to answer. Provide students with Picture/Word Answer Cards to use as visual supports as needed.*** **Level 3:** Have student identify/match a vocabulary word to its definition. Have the student use the word in a phrase to answer. **Level 2:** Have student match the targeted vocabulary word to its definition using Picture/Word Answer Cards. **Level 1:** Have student identify the vocabulary word from a single option or errorless choice. If desired, indicate the winner of the game as the person with the most points.
Review	• Review targeted vocabulary words. • Prompt students to locate and review meaning of the unit vocabulary words in various lessons. • Encourage students to use the vocabulary words in conversations. Point out when unit vocabulary is used.

Check Understanding ?

- **Level 3:** Can the student determine the meaning of a word? Can the student use a targeted word in a sentence?
- **Level 2:** Can the student match a word to its meaning?
- **Level 1:** Can the student select a representation of a named word from a single option or errorless choice?

Instructional Targets

Standards for Language
- ***Conventions of Standard English:*** Apply conventions of grammar when speaking or writing. Apply correct capitalization and punctuation in sentences. Use correct spelling in writing sentences.

Standards for Writing
- ***Production and Distribution:*** With some guidance and support, plan, edit and revise writing with a focus on the purpose of the document.

Differentiated Tasks

Level 3 Students will...
- Demonstrate conventions of grammar in spoken and written language.
- Demonstrate conventions of written language, including appropriate capitalization and ending punctuation.
- Demonstrate use of common spelling conventions in written language.
- Plan, edit and revise writing to strengthen written sentences.

Level 2 Students will...
- Create simple sentence forms in a grammatically correct order when speaking or writing.
- With support, identify beginning capital letters and ending punctuation in a written sentence.
- Spell familiar words with letter-sound matches.
- With support, use pictures and text to plan, edit and revise a written sentence idea.

Level 1 Students will...
- With picture supports, combine two or more words during a shared writing or speaking activity.
- With support, locate capital letters and ending punctuation in a sentence.
- With support, choose a correctly spelled word (could be errorless choice).
- Given errorless choices of pictures, make a selection of pictures to plan, edit and revise a sentence idea.

Topic Connection

Throughout this unit, students learn about science and the scientific method. Students also learn about famous scientists that asked questions, did experiments and made conclusions to solve problems. In this lesson, students will edit written documents featuring scientists or science events.

Topic Words

conclusion	question*	scientist
experiment	science	solve
problem*	scientific method	

Editing Words

author	edit	report
book report	exclamation point	revise
capital letter	heading	sentence
capitalization	order	spell
closing	period	title
comma	punctuation	
current event	question mark	

* Power Words

Benchmark Assessments
- Writing: Writing Probe

Lesson at a Glance

	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5
Instructional Activities	Book Report	Current Events	Letter	Report With Facts	Opinion
See how these activities fit into the **Suggested Unit Pacing** .					
ULS Materials and Resources	**Editing Document 1: Book Report** **Standards Connection**	**Editing Document 2: Current Events** **Standards Connection**	**Editing Document 3: Letter** **Standards Connection**	**Editing Document 4: Report With Facts** **Standards Connection**	**Editing Document 5: Opinion** **Standards Connection**
	L³ Skills: Language Arts Skills				
Additional Materials			**Word Journal**	**Word Journal**	**Word Journal**

Instructional Targets

Standards for Language

- ***Conventions of Standard English:*** Apply conventions of grammar when speaking or writing. Apply correct capitalization and punctuation in sentences. Use correct spelling in writing sentences.

Standards for Writing

- ***Production and Distribution of Writing:*** With some guidance and support, plan, edit and revise writing with a focus on the purpose of the document.

Instructional Routine

? or

Introduce	• Introduce the activity by asking a focus question about editing. For example, ask, "What should all sentences start with—a question mark or a capital letter?" Discuss students' answers. • Introduce key vocabulary terms such as punctuation, capitalization, revise and edit. • Introduce rules for capitalization, including names of people and places. • Explain how and why periods are used in writing. • Tell students that they will be editing a book report. For example, say, "Capital letters and periods are important. Your job is to help find missing capital letters and periods in a book report." • Review the learning goals with students: **Level 3: I will add capital letters and periods when editing sentences.** **Level 2: I will name the beginning capital letter and ending punctuation while editing a sentence.** **Level 1: I will find capital letters and periods in a sentence.**
Model	• Display a sentence without a capital letter or a period. • Ask, "What is missing from this sentence?" • Discuss the missing capital letters and periods and why they are needed. • Use the Marker Tool to correct the sentence. • Display the Standards Connection and model checking edits. • Repeat as needed.
Provide Practice	***Provide each student with Editing Document 1: Book Report and Standards Connection.*** **Level 3:** Have the student identify where a capital letter and period are needed in each sentence. Have the student correct/add capital letter and ending punctuation to each sentence. **Level 2:** With assistance, have the student correct/add capital letter and punctuation to a sentence. Then have the student identify which letter of a word in the sentence has a capital letter. Next, have the student locate and identify the ending punctuation of the sentence by name (period, question mark, etc.). Provide visuals and other supports as needed. **Level 1:** Have the student participate in correcting/adding capital letters and punctuation to a sentence through a narrowed field or errorless choice(s). For example, present a sentence, read the sentence pointing to each word. Stop at the end of the sentence and ask, "What is needed at the end of this sentence—a period?" Present a symbol of a period and have the student select the period using their active response mode. Provide student with a corrected sentence from the Book Report. With support, have the student participate in locating words with capital letters and ending punctuation. Have students review and check their work by using the Standards Connection.
Review	• Review Editing Document 1: Book Report with students.

Check Understanding ?

- **Level 3:** Can the student apply correct capitalization and punctuation when editing a piece of writing?
- **Level 2:** With support, can the student participate in editing a written sentence? Can the student identify a capital letter in a word? Can the student identify the ending punctuation of asentence?
- **Level 1:** Can the student participate in locating capital letters and ending punctuation in sentences with support? Can the student participate in the editing process by making selections from a narrowed field or errorless choice(s)?

Instructional Targets

Standards for Language

- ***Conventions of Standard English:*** Apply conventions of grammar when speaking or writing. Apply correct capitalization and punctuation in sentences. Use correct spelling in writing sentences.

Standards for Writing

- ***Production and Distribution of Writing:*** With some guidance and support, plan, edit and revise writing with a focus on the purpose of the document.

Instructional Routine

? or

Introduce

- Introduce the activity by asking a focus question about editing. For example, ask, "What should the sentences in a paragraph do—confuse you or tell a story?" Discuss students' answers.
- Review key vocabulary terms, such as punctuation, capitalization, revise and edit.
- Explain why paragraphs need to be in correct order. Tell students that they will be given a Current Events article. Their job will be to correct mistakes in capitalization and punctuation and to put the story in the correct order. When we change the order of a written document, it is called revising.
- Review the learning goals with students:

  Level 3: I will edit a paragraph and put the sentences in order.
  Level 2: I will identify capital letters and punctuation. I will put sentences in order.
  Level 1: I will find capital letters and periods in a sentence. I will help put sentences in order.

Model

- Display the Current Events document. Focus on the sentence that is marked as the first sentence (indicated with the number 1) and ask, "What is missing from this sentence?"
- Use the Marker Tool to correct the sentence. Model the use of the Standards Connection to check your work.
- Read the first two lines of the Editing Document and ask, "Is this paragraph in order? Does it have steps?" Discuss how a paragraph that tells a sequence of events needs to be in order.
- Explain how to find the correct order by thinking, "What happened first, next or last?" Tell students the number one, next to the sentence you have corrected, indicates that it is the first sentence in the document.

Provide Practice

Provide each student with Editing Document 2: Current Events and the Standards Connection.

Level 3: Have the student identify where a capital letter and period are needed in each sentence. Have the student correct/add capital letter and ending punctuation to each sentence. Read or have student read and then number each sentence in the correct order.

Level 2: With assistance, have the student correct/add capital letter and punctuation to a sentence. Then have the student identify which letter of a word in the sentence has a capital letter. Next, have the student locate and identify the ending punctuation of the sentence by name (period, question mark, etc.). Read the article in its current order. Discuss the current order and if it makes sense. With assistance, have the student number or place the sentences in the correct order to show sequencing.

Level 1: Have the student participate in correcting/adding capital letters and punctuation to a sentence through a narrowed field or errorless choice(s). Provide student with a corrected sentence from the Current Events article. With support, have student participate in locating words with capital letters and ending punctuation. Then have the student participate in placing the sentence in order.

Have students review and check their work by using the Standards Connection.

Review

- Review Editing Document 2: Current Events with students.

Check Understanding ?

- **Level 3:** Can the student apply correct capitalization and punctuation when editing a piece of writing? Can the student revise the order of the sentences to show proper sequencing?
- **Level 2:** With support, can the student participate in editing a written sentence? Can the student identify a capital letter in a word? Can the student identify the ending punctuation of a sentence? Can the student revise the order of a paragraph with support?
- **Level 1:** Can the student participate in locating capital letters and ending punctuation in sentences with support? Can the student participate in the editing process by making selections from a narrowed field or errorless choice(s)?

Instructional Targets

Standards for Language

- ***Conventions of Standard English:*** Apply conventions of grammar when speaking or writing. Apply correct capitalization and punctuation in sentences. Use correct spelling in writing sentences.

Standards for Writing

- ***Production and Distribution of Writing:*** With some guidance and support, plan, edit and revise writing with a focus on the purpose of the document.

Instructional Routine

? or

Introduce

- Introduce the activity by asking a focus question about editing. For example, ask, "Why is it important to spell things correctly—spelling words correctly helps people read better or spelling words correctly helps people hear better?" Discuss students' answers.
- Review key vocabulary terms such as punctuation, capitalization and letter, and introduce the words comma, heading, closing and spelling.
- Review rules for capitalization, including names of people and places. Review rules for period usage.
- Introduce the importance of spelling correctly. Introduce the comma, and its common use as a pause in a thought.
- Tell students that they will be given a Letter to review. Their job will be to correct mistakes in capitalization, punctuation and spelling.
- Review the learning goals with students:

Level 3: I will correct capital letters, punctuation and misspelled words when editing sentences.
Level 2: I will identify beginning capital letters and ending punctuation when editing sentences.
Level 1: I will find capital letters, periods and question marks in a sentence.

Model

- Display the Letter document. Ask, "What is wrong with this letter?"
- Discuss the missing capital letters and punctuation. Use the Marker Tool to model correcting the letter by adding a missing comma. Then explain why commas are important to a letter.
- Search for and model correcting a misspelled word. Model use of the Word Journal to help find the correct spelling.

Provide Practice

Provide each student with Editing Document 3: Letter, individual Word Journals and Standards Connection.

Level 3: Have the student identify and correct misspelled words in the letter. Encourage the use of resources such as their Word Journal to provide assistance. Then have the student correct/add capital letters, commas and ending punctuation.

Level 2: With support, have the student correct/add capital letters and ending punctuation. Once the sentence is corrected, have the student identify capital letters and ending punctuation by name. Then, with support, have the student correct spelling errors. Encourage use of the student's Word Journal or other supports.

Level 1: Have the student participate in correcting/adding capital letters and ending punctuation and in correcting spelling errors. Then provide the student with a corrected sentence from the Editing Document. With support, have the student locate capital letters, periods and question marks, which may be from a narrowed field or errorless choice(s).

Have students review and check their work by using the Standards Connection.

Review

- Review Editing Document 3 with students.

Check Understanding ?

- **Level 3:** Can the student correct errors in capitalization and punctuation when editing a piece of writing? Can the student identify and correct misspelled words?
- **Level 2:** With support, can the student participate in editing a written sentence? With support, can the student identify and correct misspelled words?
- **Level 1:** Can the student participate in the editing process by making selections from a narrowed field or errorless choice(s)?

Instructional Targets

Standards for Language

- ***Conventions of Standard English:*** Apply conventions of grammar when speaking or writing. Apply correct capitalization and punctuation in sentences. Use correct spelling in writing sentences.

Standards for Writing

- ***Production and Distribution of Writing:*** With some guidance and support, plan, edit and revise writing with a focus on the purpose of the document.

Instructional Routine

? or

Introduce	• Introduce the activity by asking a focus question about editing. For example, ask, "What should you do if a written sentence does not sound correct—change the sentence or leave it alone?" Discuss students' answers. • Review key vocabulary terms, such as punctuation, capitalization, report, period, question mark and spelling. • Review rules for capitalization, including names of people and places, punctuation usage including periods and question marks, as well as the importance of correct spelling. • Explain that sometimes a sentence may not be worded correctly and needs to be changed. Tell students their job will be to correct mistakes in a Report With Facts. While editing, they should listen for sentences that do not sound correct and change those sentences. • Review the learning goals with students: **Level 3-2: I will edit a report and change sentences that do not sound right.** **Level 1: I will make choices to help edit a report.**
Model	• Display the Report With Facts document. Choose one of the sentences that could be edited to "sound better" to use when modeling. • Ask, "What is wrong with this sentence?" Discuss the missing capital letters and periods and why they are needed. Use the Marker Tool to correct any capitalization, punctuation and spelling mistakes. • Ask, "Is this sentence in order? Does it sound right? Can it be rewritten to sound better?" Discuss how the words in a sentence need to be in the correct order. Explain how to find the correct order by thinking, "How can I change this to make it sound better?" Use the Marker Tool to correct the sentence word order. • Repeat as needed.
Provide Practice	***Provide each student with Editing Document 4: Report With Facts, individual Word Journals and Standards Connection.*** **Level 3:** Have the student identify where a capital letter and period are needed in each sentence. Have the student correct/add capital letter and ending punctuation to each sentence. Have the student identify and correct misspelled words. Have student revise any sentence with poor word order. **Level 2:** Read the sentence and have the student make edits and improvements with support. Encourage the use of the Word Journal when correcting misspelled words. Then have the student identify the capitalized letters and the punctuation in the corrected sentence. **Level 1:** Have the student participate in editing the document through a narrowed field or errorless choice(s). Once corrected have the student participate in locating capital letters and ending punctuation with support. Have students review and check their work by using Standards Connection.
Review	• Review Editing Document 4: Report With Facts with students.

Check Understanding ?

Level 3: Can the student apply correct capitalization and punctuation when editing a piece of writing? Can the student identify and correct misspelled words? Can the student revise the order of a sentence to demonstrate proper word order?

Level 2: Can the student identify the letter in a word that needs to be capitalized in a sentence? Can the student identify the ending punctuation of a sentence? Can the student correct misspelled words with support? Can the student revise a sentence to improve word order with support?

Level 1: Can the student participate in the editing process by making selections from a narrowed field or errorless choice(s)? Can the student participate in locating a capital letter with support? Can the student participate in locating punctuation in a sentence with support?

Instructional Targets

Standards for Language

- ***Conventions of Standard English:*** Apply conventions of grammar when speaking or writing. Apply correct capitalization and punctuation in sentences. Use correct spelling in writing sentences.

Standards for Writing

- ***Production and Distribution of Writing:*** With some guidance and support, plan, edit and revise writing with a focus on the purpose of the document.

Instructional Routine

? or

Introduce

- Introduce the activity by asking a focus question about editing. For example, ask, "What punctuation should be added to the end of a question—an exclamation point or a question mark?" Discuss students' answers.
- Review key vocabulary terms such as punctuation, capitalization, opinion, period, question mark, exclamation point and spelling.
- Review rules for capitalization, including names of people and places.
- Review the importance of spelling correctly.
- Review the rules for punctuation usage, including periods, question marks and exclamation points.
- Explain to students that in this activity they will practice using everything they know about editing. Tell students their job will be to correct the mistakes in the Opinion document.
- Review the learning goals with students:

  Level 3: I will add capital letters, periods, question marks and exclamation points and fix spelling when editing sentences.
  Level 2: I will name the beginning capital letter and ending punctuation and fix misspelled words.
  Level 1: I will find capital letters, periods and question marks in a sentence.

Model

- Display the An Opinion document. Choose one of the sentences with missing capitalization, punctuation, misspelled words and poor word order. Ask, "What is wrong with this sentence?"
- Discuss the missing capital letters and periods and why they are needed. Use the Marker Tool to correct any capitalization, punctuation and spelling mistakes. Use the Standards Connection to check your work.
- Repeat as needed.

Provide Practice

Provide each student with Editing Document 5: An Opinion, individual Word Journals and the Standards Connection.

Level 3: Have student identify where capital letters, periods, question marks and exclamation points are needed in each sentence. Have student correct/add capital letters and ending punctuation to each sentence. Have student identify and correct misspelled words. Have student revise any sentence with poor word order.

Level 2: Read the sentence and have the student make edits and improvements with support. Encourage the use of the Word Journal when correcting misspelled words. Then have the student identify the capitalized letters and the punctuation in the corrected sentence.

Level 1: Have student participate in editing the document through a narrowed field or errorless choice(s). Once corrected, have student participate in locating capital letters and ending punctuation with support.

Have students review and check their work by using the Standards Connection.

Review

- Review Editing Document 5: An Opinion with students.

Check Understanding ?

Level 3: Can the student apply correct capitalization and punctuation when editing a piece of writing? Can the student identify and correct misspelled words? Can the student revise the order of a sentence to demonstrate proper word order?

Level 2: Can the student identify the letter in a word that needs to be capitalized in a sentence? Can the student identify the ending punctuation of a sentence? Can the student correct misspelled words with support? Can the student revise a sentence to improve word order with support?

Level 1: Can the student participate in the editing process by making selections from a narrowed field or errorless choice(s)? Can the student participate in locating a capital letter with support? Can the student participate in locating punctuation in a sentence with support?

Instructional Targets

Standards for Writing
- ***Production and Distribution of Writing:*** With some guidance and support, plan, edit and revise writing with a focus on the purpose of the document.

Standards for Language
- ***Conventions of Standard English:*** Apply conventions of grammar when speaking or writing. Apply correct capitalization and punctuation in sentences. Use correct spelling in writing sentences.

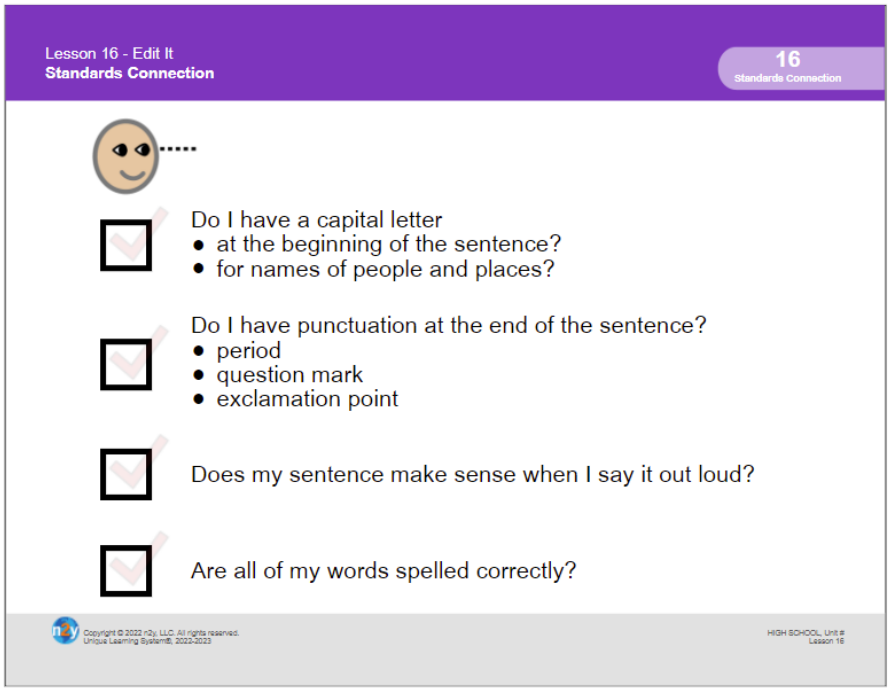
Differentiated Tasks

Level 3 Students will...
- Plan, edit and revise writing to strengthen written sentences.
- Demonstrate conventions of grammar in spoken and written language.
- Demonstrate conventions of written language, including appropriate capitalization and ending punctuation.
- Demonstrate use of common spelling conventions in written language.

Level 2 Students will...
- With support, use pictures and text to plan, edit and revise a written sentence idea.
- Create simple sentence forms in a grammatically correct order when speaking or writing.
- With support, identify beginning capital letters and ending punctuation in a written sentence.
- Spell familiar words with letter-sound matches.

Level 1 Students will...
- Given errorless choices of pictures, make a selection of pictures to plan, edit and revise a sentence idea.
- With picture supports, combine two or more words during a shared writing or speaking activity.
- With support, locate capital letters and ending punctuation in a sentence.
- With support, choose a correctly spelled word (could be errorless choice).

A shared checklist is a way to review and revise writing.
In the writing conference, guide students to review a written text and revise it as needed.



Instructional Targets

Standards for Language
- ***Knowledge of Language:*** Demonstrate conventions of language to communicate effectively when speaking or writing in varied contexts.

Standards for Speaking and Listening
- ***Comprehension and Collaboration:*** Identify information from multiple sources that contribute to making a decision.

Standards for Writing
- ***Range of Writing:*** Participate routinely in supported writing activities, using conventional formats.

Differentiated Tasks

Level 3 Students will...

- Apply conventions of language to generate sentences specific to the purpose when speaking or writing.
- Obtain information from two or more sources to reach a personal decision.
- Write routinely for a range of discipline-specific tasks, purposes and audiences.

Level 2 Students will...

- Use conventions of language to generate a simple sentence when speaking or writing.
- Gather and compare information from two sources.
- Participate routinely in supported writing activities for a range of discipline-specific tasks, purposes and audiences.

Level 1 Students will...

- Use language to share an idea with others.
- Make a choice when presented with two informational choices.
- Actively participate in shared writing and communication activities for a range of discipline-specific tasks, purposes and audiences.

Topic Connection

Throughout this unit, students learn about the scientific method and famous scientists who solved problems by using the scientific method. Students are able to use the scientific method to participate in a science fair. In this lesson, students will fill out a form to participate in a science fair.

Topic Words

problem*	scientific method	solve
science	scientist	

Literacy Words

audience	sentence	speak
purpose	source	write*

* Power Words

Benchmark Assessments

- Writing: Writing Probe
- Early Learning: Emerging Writing
- Emerging Skills: Early Emerging Writing Rubric

Lesson at a Glance

Activity 1

Instructional Activities

Science Fair Project Form

See how these activities fit into the **Suggested Unit Pacing** .

ULS Materials and Resources

Science Fair Project Submission Form

Standards Connection
(Lesson 16)

L³ Skills: **Language Arts Skills**

Additional Materials

Activity 1 - Science Fair Project Form

Instructional Targets

Standards for Language
- ***Knowledge of Language:*** Demonstrate conventions of language to communicate effectively when speaking or writing in varied contexts.

Standards for Speaking and Listening
- ***Comprehension and Collaboration:*** Identify information from multiple sources that contribute to making a decision.

Standards for Writing
- ***Range of Writing:*** Participate routinely in supported writing activities, using conventional formats.

Instructional Routine

Introduce	• Introduce the activity by asking a focus question about a science fair project. For example, ask, "What do you do if you are participating in a science fair—cook or do an experiment?" • Explain to students that scientists conduct experiments to find out information. During a school science fair students conduct experiments to gain information. Students can study any topic they are interested in. • Tell students that they will complete a submission form for a science fair. For example, say, "Your job is to complete a science fair project submission form." • Review the learning goal with students: **I will complete a science fair project submission form.**
Model	• Display the Science Fair Project Submission Form. Model how to select a science fair project and fill out the form for that information. • Brainstorm with students a list of projects they could complete for a science fair. For example, say, "During the science fair, students pick something they want to learn about like the weather. What other things do you want to learn about?" • Model how to fill in the Science Fair Project Submission Form by going through each part. For example, say, "The first line says 'Name.' I will write my name in this blank." • Refer to the Standards Connection in Lesson 16 and then check the card for correct spelling.
Provide Practice	***Provide each student with the Science Fair Project Submission Form and any alternative forms of writing needed.*** **Level 3:** Have student complete the Science Fair Project Submission Form. Encourage the student to use resources to look up information they may not know. **Level 2:** Have student complete the Science Fair Project Submission Form with support. Encourage the student to use resources to compare information to ensure the information is correct. **Level 1:** Have student complete the Science Fair Project Submission Form by selecting from a narrowed field or errorless choice(s). For example, present the student's name for the signature line and ask, "What is your name?" Encourage the student to select their last name using their preferred response mode. Then have the student participate in adding the information to the form.
Review	• Discuss what project each student will be completing, and what information they shared about it.

Check Understanding

- **Level 3:** Can the student use appropriate information to complete a writing activity?
- **Level 2:** Can the student compare appropriate information to complete a writing activity with support?
- **Level 1:** Can the student actively participate in a writing activity by making a selection from a narrowed field or errorless choice(s)?

Science Fair Project Submission Form

Name: _____

Grade: _____

Name of School: _____

Name of Teacher: _____

Title of Project: _____

Project Area of Science:

- Biology (plants/animals)
- Physics (movement/energy)
- Technology (machines/robots)
- Chemistry (matter/reactions)
- Earth and Space Science (rocks/space)

_____ Yes, I would like to present my project to the judges.

Best time for me to present (choose one):

9:00 a.m. - 11:00 a.m. 11:00 a.m. - 1:00 p.m. 1:00 p.m. - 3:00 p.m.

_____ No, I would like to be a part of the science fair but not have my project judged.

Instructional Targets

Standards for Writing
- ***Text Types and Purposes:*** Generate informative paragraphs, including a topic sentence, supporting facts or details and a concluding sentence.

Standards for Language
- ***Conventions of Standard English:*** Apply conventions of grammar when speaking or writing. Apply correct capitalization and punctuation in sentences. Use correct spelling in writing sentences.
- ***Production and Distribution of Writing:*** Use technology, including the internet, to compose a paragraph.

Standards for Speaking and Listening
- ***Comprehension and Collaboration:*** Initiate and participate in grade level and age-appropriate discussion on diverse topics to:
  - Express an opinion.
  - Share ideas and information.
  - Ask and respond to questions relevant to the topic.

Differentiated Tasks

Level 3 Students will...
- Create one or more paragraphs, including a topic sentence with supporting facts, details and a concluding sentence.
- Demonstrate conventions of grammar in spoken and written sentence forms.
- Demonstrate conventions of written language, including appropriate capitalization and ending punctuation.
- Demonstrate use of common spelling conventions in written language.
- Select and use digital tools, including the internet, to generate a paragraph.
- Share information and opinions, ask and answer questions and make comments during a group discussion.

Level 2 Students will...
- Select pictures with text to create a written document containing factual sentences on a topic.
- Create simple sentence forms in a grammatically correct order when speaking or writing.
- With support, identify beginning capital letters and ending punctuation in a written sentence.
- Spell familiar words with letter-sound matches.
- With support, use digital tools, including the internet, to generate multiple sentences.
- Use picture supports to share information and opinions, ask and answer questions and make comments during group discussions.

Level 1 Students will...
- Given a narrowed field or errorless choice(s) of pictures, make a selection to communicate facts on a given topic.
- With picture supports, combine two or more words during a shared writing or speaking activity.
- With support, locate capital letters and ending punctuation in a sentence.
- With support, choose a correctly spelled word from a narrowed field or errorless choice(s).
- With support and adaptive tools, use digital tools to create a sentence.
- Participate in conversational exchanges, using communication technology and picture supports.

Topic Connection

Throughout this unit, students learn about scientific inquiry, scientists and the scientific method. In this lesson, students will write a newsletter for family and friends to report what they have learned about in this unit.

Topic Words

conclusion	observe	scientific method
data	problem*	scientist
experiment	question*	solve
guess*	science	test

* Power Words

Literacy Words

brainstorm, newsletter, paragraph, topic

Benchmark Assessments

- Writing: Writing Probe
- Early Learning: Emerging Writing
- Emerging Skills: Early Emerging Writing Rubric

Lesson at a Glance

	Activity 1	Activity 2	Activity 3	Activity 4
Instructional Activities	Brainstorming	Planning a Paragraph	Writing a Paragraph	Sharing a Paragraph
See how these activities fit into the **Suggested Unit Pacing** .				
ULS Materials and Resources	**Unit Preview** **Brainstorming Web** (Level 3, Level 1 & 2) **Fill-In Picture/Word Cards**	**Topic Paragraph Planner Steps 1-4** **Level 3:** (Text Only) **Level 2:** (Single Symbol-Support) **Level 1:** (Single Symbol-Support)	**Topic Paragraph Planner Steps 1-5** Standards Connection (Lesson 16)	**Completed Topic Paragraph Planner** **Standards Connection A** (Lesson 18) **Standards Connection B** (Lesson 18)
	SymbolStix PRIME **L³ Skills:** Language Arts Skills			
Additional Materials				

Instructional Target

Standards for Speaking and Listening

- ***Comprehension and Collaboration:*** Initiate and participate in grade level and age-appropriate discussion on diverse topics to:
  - Express an opinion.
  - Share ideas and information.
  - Ask and respond to questions relevant to the topic.

Instructional Routine

? or

Introduce	• Introduce the activity by asking a focus question about written communication. For example, ask, "How can we let people know about what is going on in our classroom—go to the cafeteria or write a newsletter?" • Tell students that they will be creating a class newsletter to report to family and friends what they have learned in this unit. Each student will contribute a single paragraph to the newsletter. • Discuss with students that a newsletter is a way to inform others about happenings. • Tell students they will brainstorm different ideas for the newsletter. For example, say, "Your job is to think of a topic you would like to write about." • Review the learning goal with students: **I will choose a topic to write a paragraph for the newsletter.**
Model	• Display the Unit Preview. Review the lessons and activities described based on what has been completed and what will be completed from the unit. For example, say, "This is our second week talking about High School Science Fair. Let's look at the Unit Preview to review what we have learned and what other topics we will explore during this unit." • Display the Brainstorming Web. Use the leveled format that best meets the needs of the majority of students. • Model filling in the Brainstorming Web by asking questions and having a discussion. For example, ask, "What are some activities we have completed? What are some activities from the Unit Preview that you are looking forward to completing?"
Provide Practice	***Provide students with the Unit Preview and the Brainstorming Web. Have students use dictation or other alternative forms to complete the web as needed.*** **Level 3:** Have the student suggest paragraph topics about activities or events that have happened in this unit. Have the student record and explore the topic using the Brainstorming Web. **Level 2:** Have the student suggest paragraph topics with support. Have the student record and explore the chosen topic using the Brainstorming Web. **Level 1:** Have the student share topics by selecting a paragraph topic of interest from a narrowed field or errorless choice(s).
Review	• Have the students select a topic on which to focus his or her paragraph.

Check Understanding ?

- **Level 3:** Can the student suggest relevant events or topics?
- **Level 2:** Can the student suggest relevant events or topics with support?
- **Level 1:** Can the student suggest an event or topic from a narrowed field or errorless choice(s)?

Instructional Targets

Standards for Writing

- ***Text Types and Purposes:*** Generate informative paragraphs, including a topic sentence, supporting facts or details and a concluding sentence.

Standards for Language

- ***Conventions of Standard English:*** Apply conventions of grammar when speaking or writing. Apply correct capitalization and punctuation in sentences. Use correct spelling in writing sentences.

Instructional Routine

? or

Introduce	• Introduce the activity by asking a focus question about written communication. For example, ask, "What do we call the subject of a paragraph—topic or book?" • Tell students that they will plan out the paragraph for the newsletter. Discuss why a planning process is necessary for writing. Explain to the students that their job is to plan what they would like to write in their paragraph. • Review the learning goal with students: **I will plan out a paragraph for the newsletter.**
Model	• Choose and display a Topic Paragraph Planner and read aloud. The planner is provided in three levels. Display the level that meets the majority of the students' needs. • Model how to fill out this planner by creating a title for the event or topic, identifying the main idea, sequencing the events and describing a reaction. • Complete Steps 1-4 of the Topic Paragraph Planner.
Provide Practice	***Provide students with the appropriate Topic Paragraph Planner and any alternative forms of writing needed.*** **Level 3:** Have the student complete Steps 1-4. **Level 2:** Have the student complete Steps 1-4 with supports. Visual supports may be found in unit illustrations, unit symbols, or in SymbolStix PRIME. **Level 1:** Have the student complete Steps 1-4 by selecting from a narrowed field or errorless choice(s). For example, display the symbol for 'scientist' and ask, "Who works in science to learn new things?" Have the student use their active participation mode to select the choice. Have student participate in adding the selection to the planner. Visual supports may be found in unit illustrations, unit symbols, or in SymbolStix PRIME.
Review	• Review Steps 1-4 with each student. Check for completion of each section.

Check Understanding ?

- **Level 3:** Can the student organize thoughts for a paragraph by completing the Topic Paragraph Planner individually?
- **Level 2:** Can the student complete the Topic Paragraph Planner with support?
- **Level 1:** Can the student make a choice from a narrowed field or errorless choice(s) to complete the Topic Paragraph Planner?

Instructional Targets

Standards for Writing

- ***Text Types and Purposes:*** Generate informative paragraphs, including a topic sentence, supporting facts or details and a concluding sentence.

Standards for Language

- ***Conventions of Standard English:*** Apply conventions of grammar when speaking or writing. Apply correct capitalization and punctuation in sentences. Use correct spelling in writing sentences.
- ***Production and Distribution of Writing:*** Use technology, including the internet, to compose a paragraph.

Instructional Routine

? or

Introduce	• Introduce the activity by asking a focus question about written communication. For example, ask, "What do sentences start with—a question mark or a capital letter?" • Tell students that they will be writing a paragraph for the newsletter. Remind students that sentences in a paragraph must start with a capital letter. • Explain to students that they will be using the Topic Paragraph Planner to write a paragraph. For example, say, "Your job is to use your Topic Paragraph Planner to write a paragraph." • Review the learning goals with students: **I will write a paragraph for the newsletter.** **I will use capital letters and ending punctuation in my newsletter.**
Model	• Display a completed Topic Paragraph Planner Steps 1-4. • Model how to craft the paragraph by using the steps from the Topic Paragraph Planner. Show students how to take the information from each step and use it in the paragraph. • Model how to edit for capital letters and end punctuation. For example, say, "Do each of my sentences start with a capital letter?" • Model checking for word order and organization. For example, read a sentence aloud. Say, "Does my sentence sound right? Can I change the order of words to make it sound better?" Show students ways to change the order and organization of the sentence if necessary. • Model the use of alternative forms of writing used in the classroom to complete the paragraph.
Provide Practice	***Provide appropriate Topic Paragraph Planner Steps 1-5 and any writing alternatives, such as dictation, adaptive keyboards and eye gaze, to fit students' needs and abilities. Visual supports may be found using unit illustrations, unit symbols or SymbolStix PRIME.*** **Level 3:** Have the student write a paragraph based off the information in Steps 1-4. Encourage the student to use correct capitalization and end punctuation. **Level 2:** Have the student use supports to create simple sentences in order to write a paragraph using Steps 1-4. Have the student add ending punctuation, providing assistance as needed. **Level 1:** Have the student select from a narrowed field or errorless choice(s) to complete sentences. Assist student in locating capital letters and punctuation in the sentences.
Review	• Check or have students check for correct capitalization and punctuation. A checklist for revising writing is provided in the Lesson 16 Standards Connection. • Review each student's paragraph. Identify sentences where word order and organization inhibit the flow of the paragraph. Show the student ways in which to change the order and organization for better flow of the paragraph.
Extend	• Put the students' paragraphs together to form a newsletter or newspaper. Add pictures and captions when applicable.

Check Understanding ?

- **Level 3:** Can the student write a paragraph with a main and concluding sentence and details in full sentences? Can the student use correct organization, spelling, capitalization and end punctuation?
- **Level 2:** Can the student use supports to write a paragraph with details on a topic in full sentences? Can the student identify capital letters and end punctuation? Can the student write sentences in the correct order?
- **Level 1:** Can the student make selections to form a paragraph by creating 2-word sentences? Can the student locate capital letters and end punctuation?

Instructional Target

Standards for Speaking and Listening

- ***Comprehension and Collaboration:*** Initiate and participate in grade level and age-appropriate discussion on diverse topics to:
  - Express an opinion.
  - Share ideas and information.
  - Ask and respond to questions relevant to the topic.

Instructional Routine

Introduce	• Introduce the activity by asking a focus question about sharing communications. For example, ask, "How can we let others know about our newsletter—go to the library or share the newsletter with others?" • Tell students that they will be sharing their newsletter paragraphs with their classmates. Using the Lesson 18 Standards Connection, discuss technology that can be used to share the newsletter. Explain that adding pictures and using technology can make the newsletter paragraphs more interesting to readers. Tell students that their job will be to share their newsletter paragraphs with others. • Review the learning goal with students: **I will share my paragraph with others.**
Model	• Display a completed newsletter paragraph. • Consider using recommendations in the Lesson 18 Standards Connection A to incorporate use of technology and increase reader's interest. • Model how to share the paragraph by either reading the paragraph aloud, giving a brief description of the paragraph or using one of the recommendations in the Lesson 18 Standards Connection A. • Model how to listen to the paragraph being shared in order to summarize the information. Use Standards Connection B as a guide. • Discuss appropriate ways to respond to others' paragraphs by asking questions or making comments.
Provide Practice	***Encourage students to use suggestions in the Lesson 18 Standards Connection A to aid in sharing their newsletter paragraph. Aid students in using desired technology.*** **Level 3:** Have the student share their newsletter paragraph. Have the student comment and respond to others' paragraphs. **Level 2:** Have the student use visual supports to share their newsletter paragraph. Have the student comment and respond to others' paragraphs. **Level 1:** Have the student use their communication mode and visual supports to share their newsletter paragraph. Have the student comment and respond to others' paragraphs.
Review	• Discuss how the newsletter will be sent home for students to share with their family and friends. • Use Standards Connection A to show what they included in their paragraph and what they used to share their presentation.
Extend	• To extend this lesson, model how to describe and summarize information from a speaker's presentation. Use Standards Connection B as a guide.

Check Understanding

Level 3: Can the student share information and make comments about a topic?

Level 2: Can the student use visual supports to share a newsletter paragraph? Can the student comment or respond to a topic?

Level 1: Can the student use their communication mode and visual supports to share a newsletter paragraph? Can the student use their communication mode to comment or respond to a newsletter paragraph?

Instructional Targets

Standards of Speaking and Listening

- ***Presentation of Knowledge and Ideas:*** Present information in an organized manner appropriate to a task, audience or situation. Integrate media to enhance a presentation. Adapt communication using formal or informal language to effectively communicate in a variety of contexts and tasks.

Differentiated Tasks

Level 3 Students will...

- Communicate on a topic specific to the purpose and audience.
- Select and use multimedia components to enhance a presentation.
- Communicate using formal or informal language specific to the task or topic.

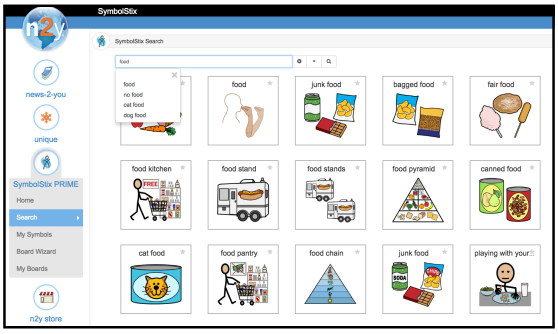
Level 2 Students will...

- Communicate on a topic specific to the purpose and audience, using picture supports.
- With support, add multimedia components to a presentation.
- Effectively communicate in a variety of contexts and tasks.

Level 1 Students will...

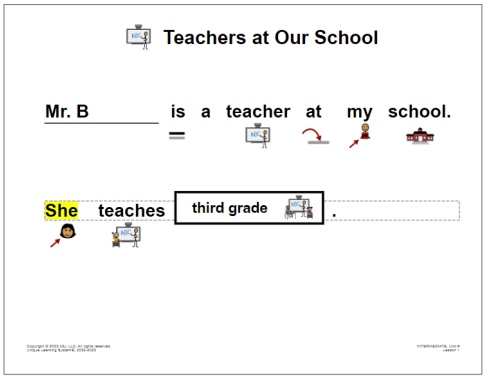
- Communicate basic information on a topic or experience, using communication technology and picture supports.
- Participate in creating multimedia components to support a presentation.
- Communicate by using supported modes of expression.

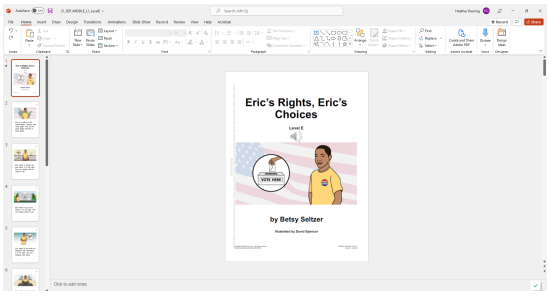
Use the newsletter reports as a springboard for oral reports to the class. This activity will extend the writing process and build oral communication. Consider ways to make the presentation interactive by using multimedia tools such as audio, still images, animation, etc. Use the checklist to ensure appropriate components, such as main idea and details, were included in the report and identify the media chosen to enhance the presentation of the Newsletter and Activity Report.



Expand the topic by finding digital pictures. Pictures may be found on websites such as **SymbolStix PRIME**. These pictures may be used in other digital projects as well. For example, encourage students to insert pictures into a word processing program, a digital slide show or another format that allows for text entry. Generate sentences to go with these pictures. Students may combine all created pages to make a new book.

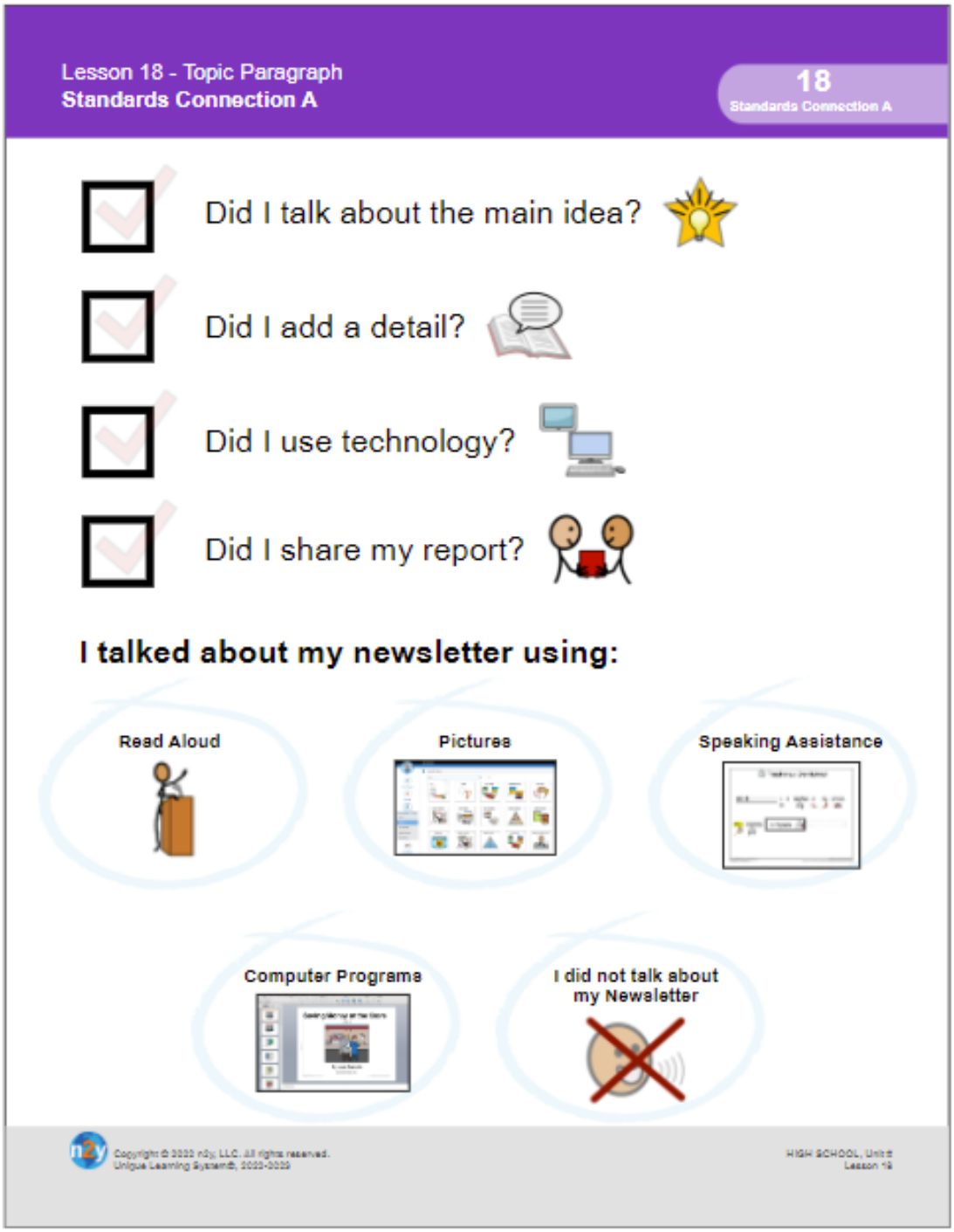
Can you make sentences talk? Have students use text boxes (indicated by pencil icon) to enter words, phrases or sentences about a topic. Students can then listen to the generated text using the Unique Learning System's text-to-speech feature by clicking the "Speak" button located in the Navigation Bar. Encourage students to make edits and additions after listening to the generated text.





Microsoft® PowerPoint® is a presentation tool that has multimedia features. Add pictures and text to a slide, animate the pictures or text and even add recorded speech messages to the slide. Combine all slides to make a class report. Want to make the PowerPoint® presentation accessible for switch users? Simply utilize a switch interface and switch.

Have students use the following checklist to aid in giving a thorough and complete presentation.



Instructional Targets

Standards for Speaking and Listening

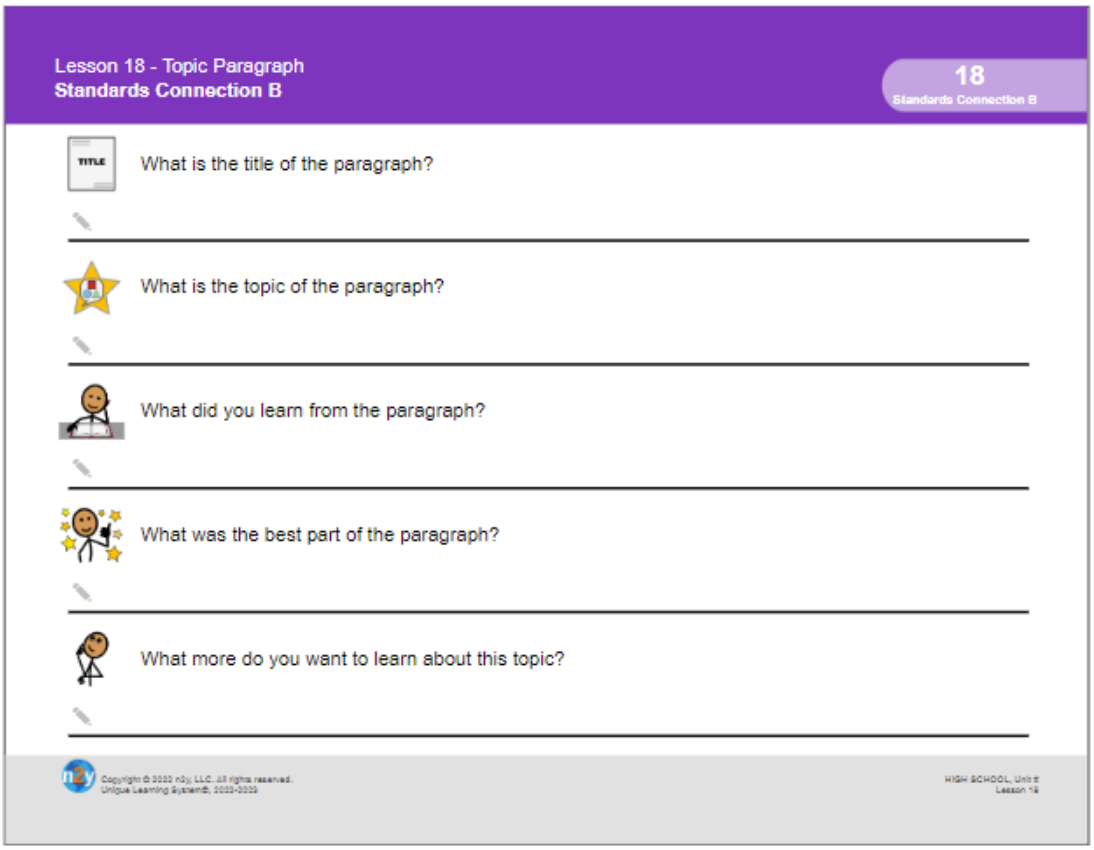
- ***Comprehension and Collaboration:*** Identify a speaker's purpose and main ideas.

Differentiated Tasks

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• Summarize information from a speaker's topic.	• Give a description of information using picture supports from a speaker's topic.	• Respond to questions related to a speaker's topic, using picture supports and communication devices.

The Standards for Speaking and Listening are a means of building critical expressive and receptive communication skills. This extended activity provides an opportunity for students to practice active listening. Incorporate augmentative systems (low tech and high tech) to encourage self-generated sentences.

Have students use this chart to summarize information about the newsletter report.



Lesson 19a - Math Story Problems - Addition
Prepping the Lab

19a

Instructional Targets

Math Standards for Algebra - Seeing Structure in Expressions

- ***Building Blocks to Algebra:*** Understand and use +, - and = to solve addition and subtraction problems.
- ***Write Expressions in Equivalent Forms to Solve Problems:*** Write and simplify an expression which represents a real-world situation.

Differentiated Tasks

Level 3 Students will...

- In the context of a real-world scenario, calculate addition and subtraction problems.
- In the context of a real-world scenario, write and simplify an expression.

Level 2 Students will...

- In the context of a real-world scenario, model addition and subtraction of two sets of objects.
- In the context of a real-world scenario, select numbers to write and simplify an expression.

Level 1 Students will...

- Count a set of objects in an addition or a subtraction problem through an active participation response (e.g. voice output device, eye gaze choice board).
- In the context of a real-world scenario, select numbers to write an expression from a narrowed field or errorless choice(s).

Topic Connection

In this unit, students are learning about science, scientists and the scientific method. In this lesson, students will complete math scenarios related to setting up equipment for experiments in a science lab.

Topic Words

experiment	science	scientific method

Math Words

add	equal	altogether
more	solve	carry
count	answer	plus

* Power Words

Benchmark Assessments

- Math Problem Solving: Add and Subtract
- Basic Math: Numbers and Counting to 20
- Early Learning: Emerging Math
- Emerging Skills: Early Emerging Math Rubric

Unit Checkpoint Assessments

- Level 2-3, Mathematics
- Level 1, Combined Counting, Reading and Mathematics (Questions 5 and 6)

Lesson at a Glance

Activity 1.1-1.11

Instructional Activities

Addition Math Story Problems

See how these activities fit into the **Suggested Unit Pacing** .

ULS Materials and Resources

Math Story 1: Adding to 10 Vertical
Math Story 2: Adding to 10 Horizontal
Math Story 3: Adding to 20 Vertical
Math Story 4: Adding to 20 Horizontal
Math Story 5: Adding to 50 Vertical
Math Story 6: Adding to 50 Horizontal
Math Story 7: Adding to 100 Vertical
Math Story 8: Adding to 100 Horizontal
Math Story 9, 10 & 11: Adding 2-Digit Numbers - Carrying
Math Story 12: Adding 2-Digit Numbers - With or Without Carrying
Math Story 13, 14 & 15: Adding 3-Digit Numbers
Manipulatives (located in 19c)
Standards Connection A
Standards Connection B

Math Supports: Math Story Problems include interactive manipulatives. Use additional tools, such as those listed below, real objects or printable manipulatives to support student learning as needed.

Instructional Tools: Number Journal
Instructional Tools: Math Pack/ Numbers
Instructional Guides: Mathematics
L³ Skills: Math Skills

n2y Math Manipulatives Kit

Circle Counters
Foam Tiles
Magnet Numbers
MathLine®
Foldable MathLine®

Additional Materials

Lesson 19a - Math Story Problems
Activity 1.1-1.11 - Addition

19a
Activity 1.1-1.11

Instructional Targets

Math Standards for Algebra - Seeing Structure in Expressions

- ***Building Blocks to Algebra:*** Understand and use +, - and = to solve addition and subtraction problems.
- ***Write Expressions in Equivalent Forms to Solve Problems:*** Write and simplify an expression which represents a real-world situation.

Instructional Routine

? or

Introduce	• Introduce the activity by asking a focus question about addition. For example, display a plus sign and ask, "When we see this sign, what should we do—add or subtract?" Discuss students' responses. • Introduce and discuss symbols used in an addition problem, including the plus sign and equal sign. • Tell students that their job will be to count and add numbers. Remind students that when they see a plus sign, it means to add or put a group of items together. • Review the learning goal with students: **Level 2-3: I will add to solve a math problem.** **Level 1: I will count objects.**
Model	Read and act out a Math Story Problem. **Level 3:** Model the steps of solving an addition problem. Model using math supports as needed. Then solve the math problem. Use Standards Connection B to model calculator use as needed. **Level 2:** Model the steps of solving the problem using Manipulatives. Show students how to group the Manipulatives to represent the numbers in the problem. Model using other math supports as needed. Then solve the problem by counting the total number of lesson objects. Use Standards Connection B to model calculator use as needed. **Level 1:** Model counting the lesson objects for the first number in the problem. Then model matching the correct numeral with the number of lesson objects counted. Repeat for each number in the problem as well as the answer to the problem. • To extend the lesson, model comparing numbers and counting objects in Math Story Problems using Lesson 19a Standards Connection A.
Provide Practice	***Provide students with appropriate real-world Math Stories, Manipulatives/lesson objects and the Standards Connections as needed.*** **Level 3:** Have the students read, act out, write and solve a math problem. **Level 2:** Read and act out a Math Story. Have the student illustrate/represent the Math Story using desired Manipulatives. Have the student solve the math problem. **Level 1:** Read and act out a Math Story. Have the student participate in counting the number or numbers using Manipulatives. Have the student use their active participation mode to select the number counted from a narrowed field or errorless choice(s).
Review	• Review selected Math Story Problems with students.

Check Understanding ?

- **Level 3:** Can the student read, write and solve a math problem (using individual modifications)?
- **Level 2:** Can the student use objects/manipulatives to represent and solve a math problem?
- **Level 1:** Can the student participate in counting objects and choosing numbers?

Instructional Target

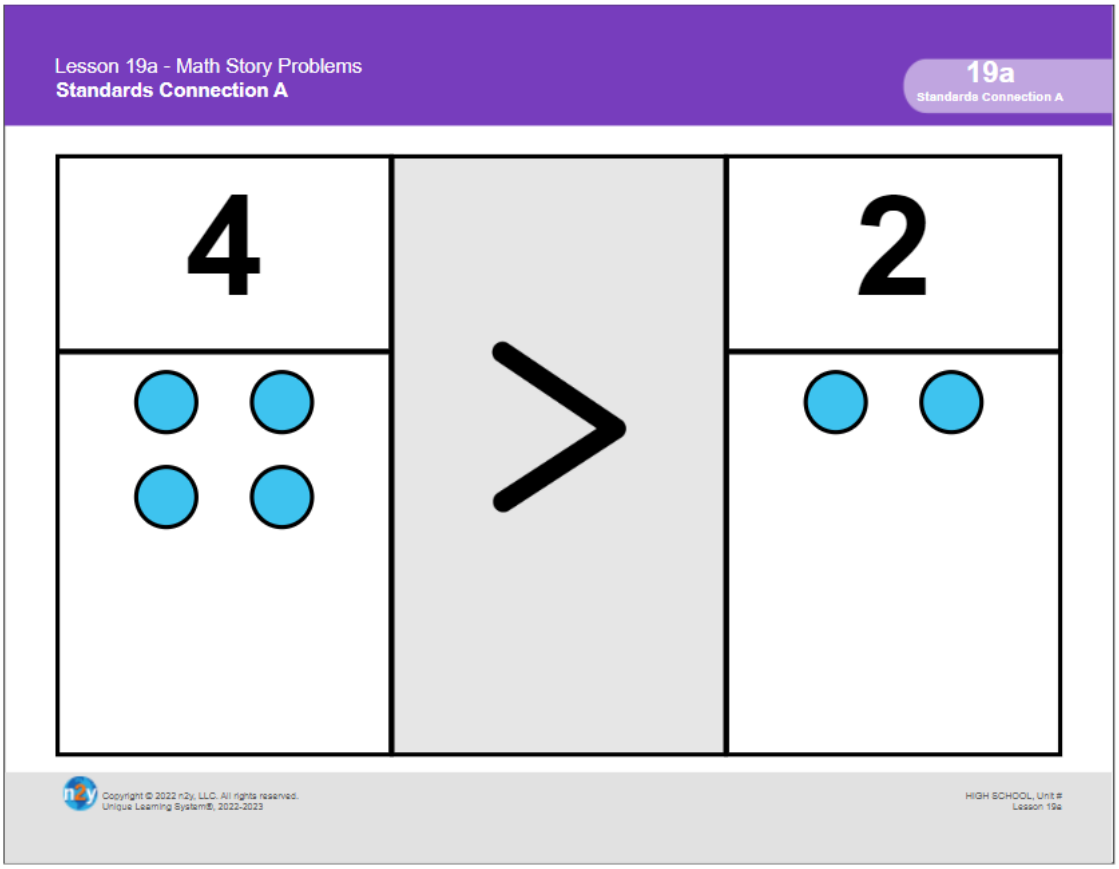
Math Standards for Algebra – Reasoning with Equations and Inequalities

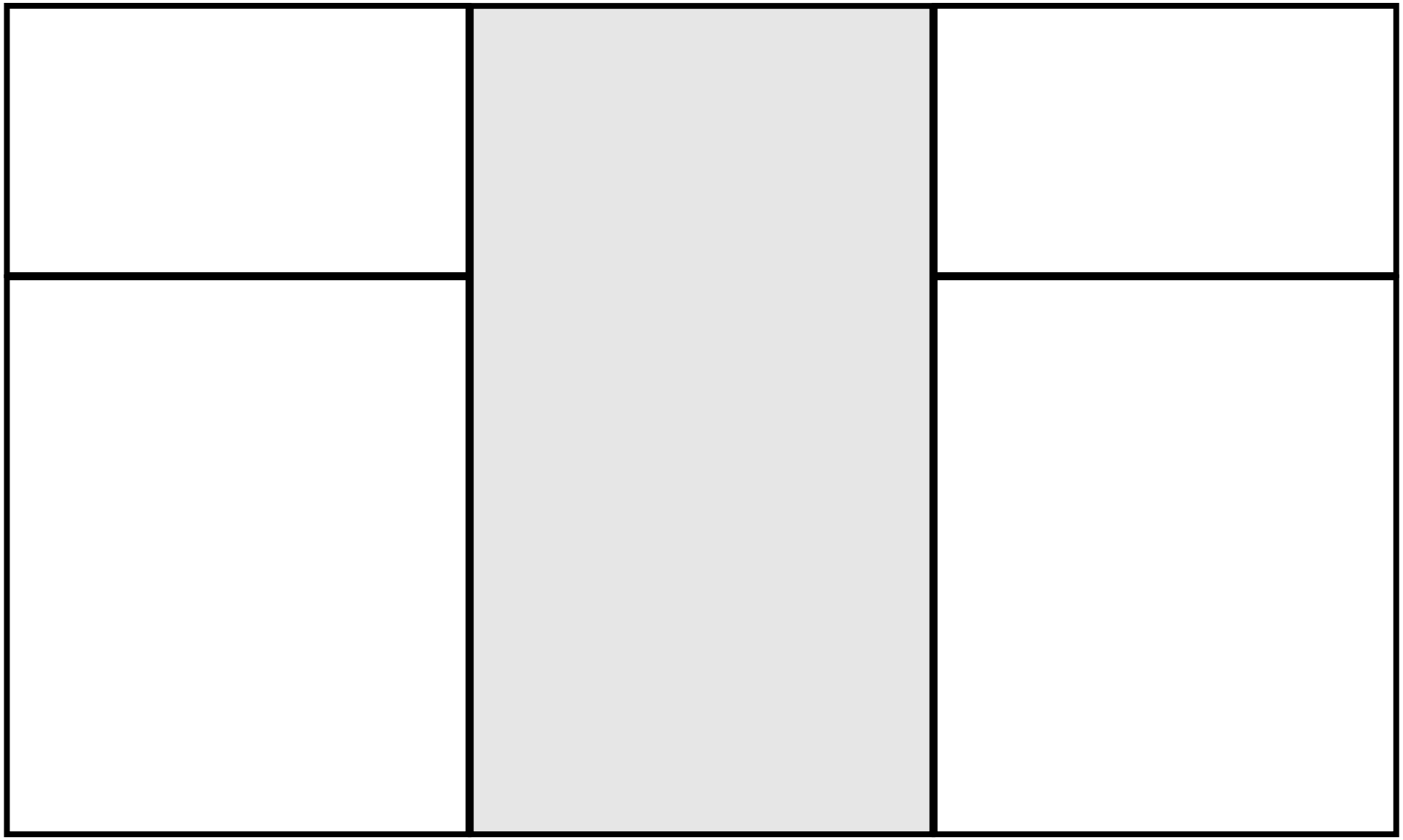
- ***Building Blocks to Algebra:*** Recognize and compare numbers showing the symbols >, < or =.

Differentiated Tasks

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• Compare two numbers and use symbols to indicate >, < or =.	• Compare two groups of objects and determine which group is bigger, smaller or equal in amount.	• Count a set of objects in an addition or subtraction problem through an active participation response (e.g., voice output device, eye gaze choice board).

Comparing numbers is a skill with many applications in daily life. We compare a number of objects to determine whether we have enough for a required activity. We determine sets of objects that have more, less or equal amounts. However, this skill is often difficult for students. Using the scenario problems from the lesson, count groups of objects to compare numbers. Some students may use both the mathematical terminology and the symbols: greater than (>), less than (<) and equal to (=). Other students may use only the terminology of more, less and the same.





Instructional Targets

Math Standards for Alegbra - Seeing Structure in Expressions

- ***Building Blocks to Algebra:*** Understand and use +, - and = to solve addition and subtraction problems.

Differentiated Tasks

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• In the context of a real-world scenario, calculate addition and subtraction problems.	• In the context of a real-world scenario, model addition and subtraction of two sets of objects.	• Count a set of objects in an addition or subtraction problem using an active participation response (e.g., vioce output device, eye gaze choice board).

Teaching How to Use a Calculator - Addition

Step 1: Look at the addition problem.

48
+ 27

Step 2: What is the top number?

48

Step 3: Push the numbers.

Find the 4. Push the 4. The 4 will show up on the screen. **Find the 8**. Push the 8. The 8 will show up on the screen.

[4] [8]

Note: If you make a mistake, **push clear**.

[C]

Step 4: What are you doing?

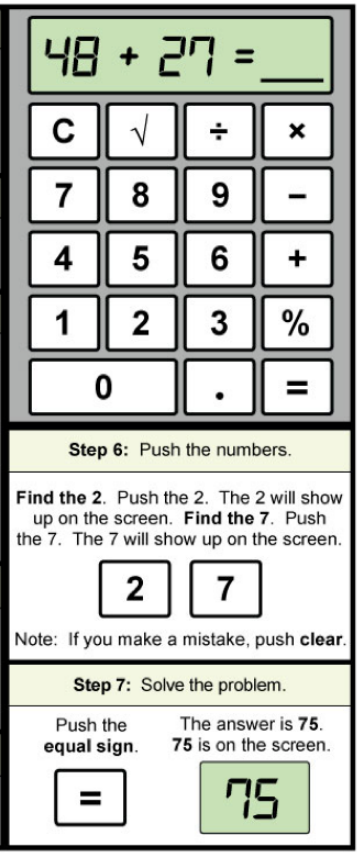
Adding? **+**
Subtracting? **-**
Multiplying? **x**
Dividing? **÷**

You are **adding**. Push the **plus sign**.

[+]

Step 5: What is the bottom number?

27



Step 6: Push the numbers.

Find the 2. Push the 2. The 2 will show up on the screen. **Find the 7**. Push the 7. The 7 will show up on the screen.

[2] [7]

Note: If you make a mistake, push **clear**.

Step 7: Solve the problem.

Push the **equal sign**.

[=]

The answer is **75**. **75** is on the screen.

75

Teaching How to Use a Calculator - Subtraction

Step 1: Look at the subtraction problem.

48
- 27

Step 2: What is the top number?

48

Step 3: Push the numbers.

Find the 4. Push the 4. The 4 will show up on the screen. **Find the 8**. Push the 8. The 8 will show up on the screen.

[4] [8]

Note: If you make a mistake, **push clear**.

[C]

Step 4: What are you doing?

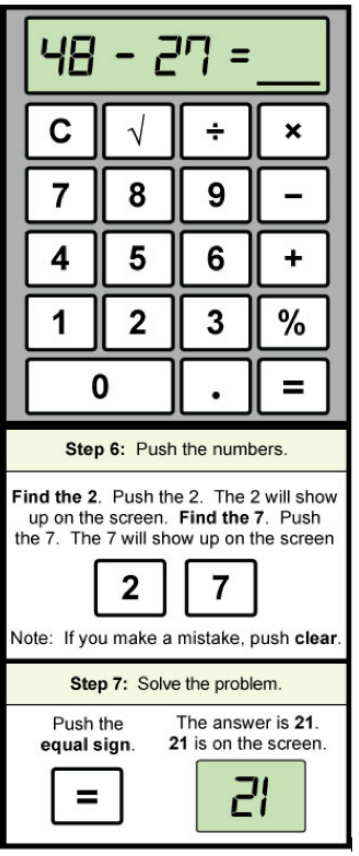
Adding? **+**
Subtracting? **-**
Multiplying? **x**
Dividing? **÷**

You are **subtracting**. Push the **minus sign**.

[−]

Step 5: What is the bottom number?

27



Step 6: Push the numbers.

Find the 2. Push the 2. The 2 will show up on the screen. **Find the 7**. Push the 7. The 7 will show up on the screen

[2] [7]

Note: If you make a mistake, push **clear**.

Step 7: Solve the problem.

Push the **equal sign**.

[=]

The answer is **21**. **21** is on the screen.

21

Step 1: Look at the addition problem.

$$\begin{array}{r} 48 \\ +\ 27 \\ \hline \end{array}$$

Step 2: What is the top number?

48

Step 3: Push the numbers.

Find the 4. Push the 4. The 4 will show up on the screen. **Find the 8**. Push the 8. The 8 will show up on the screen.

[4] [8]

Note: If you make a mistake, **push clear**.

[C]

Step 4: What are you doing?

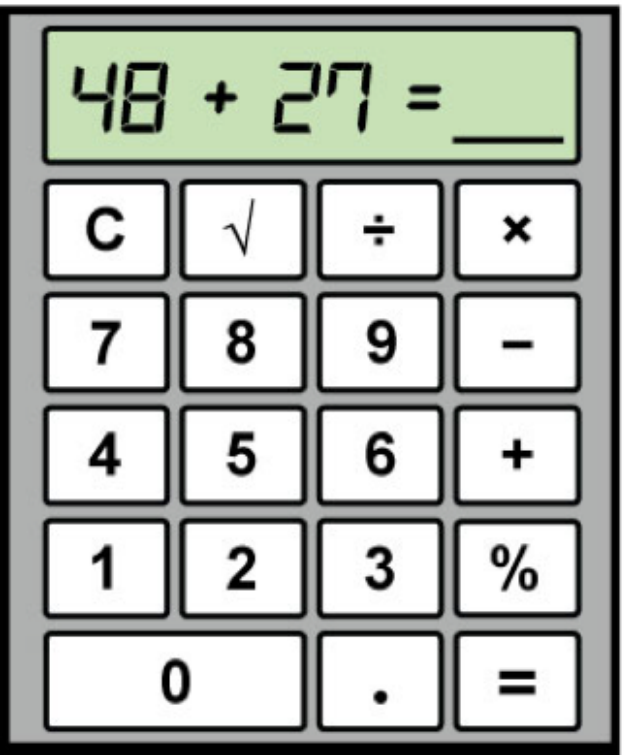
Adding? **+**
Subtracting? **-**
Multiplying? **x**
Dividing? **÷**

You are **adding**. Push the **plus sign**.

[+]

Step 5: What is the bottom number?

27



Step 6: Push the numbers.

Find the 2. Push the 2. The 2 will show up on the screen. **Find the 7**. Push the 7. The 7 will show up on the screen.

[2] [7]

Note: If you make a mistake, push **clear**.

Step 7: Solve the problem.

Push the **equal sign**.

[=]

The answer is **75**. **75** is on the screen.

75

Step 1: Look at the subtraction problem.

48
- 27

Step 2: What is the top number?

48

Step 3: Push the numbers.

Find the 4. Push the 4. The 4 will show up on the screen. **Find the 8**. Push the 8. The 8 will show up on the screen.

[4] [8]

Note: If you make a mistake, **push clear**.

[C]

Step 4: What are you doing?

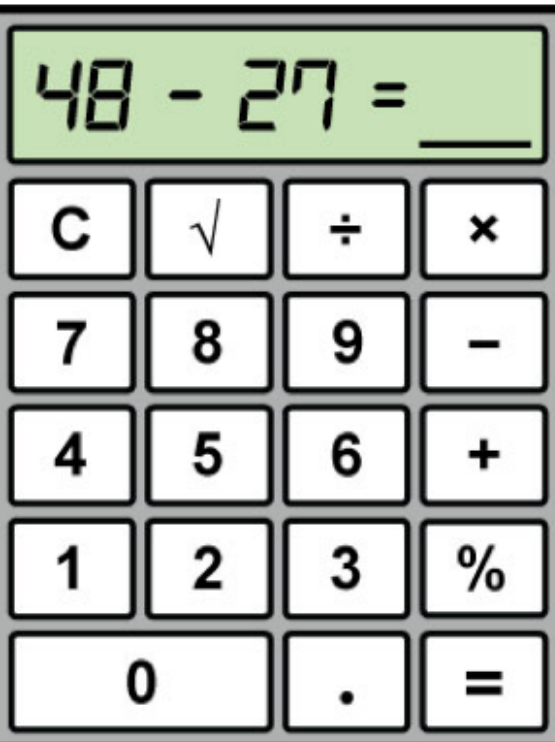
Adding? **+**
Subtracting? **-**
Multiplying? **x**
Dividing? **÷**

You are **subtracting**. Push the **minus sign**.

[–]

Step 5: What is the bottom number?

27



Step 6: Push the numbers.

Find the 2. Push the 2. The 2 will show up on the screen. **Find the 7**. Push the 7. The 7 will show up on the screen

[2] [7]

Note: If you make a mistake, push **clear**.

Step 7: Solve the problem.

Push the **equal sign**.

[=]

The answer is **21**. **21** is on the screen.

21

Lesson 19b - Math Story Problems - Subtraction
Prepping the Lab

19b

Instructional Targets

Math Standards for Algebra - Seeing Structure in Expressions

- ***Building Blocks to Algebra:*** Understand and use +, - and = to solve addition and subtraction problems. Indicate positive and negative numbers (use of a number line, temperatures including negative numbers, etc.) in a real-world scenario. Add and subtract rational numbers. Identify the additive inverse.
- ***Write Expressions in Equivalent Forms to Solve Problems:*** Write and simplify an expression which represents a real-world situation.

Math Standards for Algebra - Reasoning with Equations and Inequalities

- ***Understand solving equations as a process of reasoning and explain the reasoning:*** Order a sequence of steps to solve an equation.

Differentiated Tasks

Level 3 Students will...

- In the context of a real-world scenario, calculate addition and subtraction problems.
- Identify and label positive and negative numbers in the context of a real-world scenario.
- Use appropriate operations to add and subtract positive and negative numbers in a real-world scenario (e.g., using a number line).
- Independently identify the opposite of a number and the number equals 0 (e.g., -2 and 2; -2 + 2 = 0).
- In the context of a real-world scenario, write and simplify an expression.
- In the context of a real-world scenario, use a combination of operations to solve an equation.

Level 2 Students will...

- In the context of a real-world scenario, model addition and subtraction of two sets of objects.
- Select positive and negative numbers in a real-world scenario.
- Add or subtract positive and negative numbers in a real-world scenario (e.g, using a number line).
- Select the opposite of a number (e.g., -2 and 2; -2 + 2 = 0).
- In the context of a real-world scenario, select numbers to write and simplify an expression.
- In the context of a real-world scenario, use operations and models to solve an equation.

Level 1 Students will...

- Count a set of objects in an addition or a subtraction problem through an active participation response (e.g., voice output device, eye gaze choice board).
- Participate in labeling positive and negative numbers using an active response mode.
- Count a set of objects in an addition or subtraction real-world problem involving positive and negative numbers through an active participation response (e.g., voice output device, eye gaze choice board).
- Make a selection from a narrowed field or errorless choice(s) to identify the opposite of a number (e.g., -2 and 2; -2 + 2 = 0).
- In the context of a real-world scenario, select numbers to write an expression from a narrowed field or errorless choice(s).
- In the context of a real-world scenario, select numbers from a narrowed field or errorless choice(s).

Topic Connection

In this unit, students are learning about science, scientists and the scientific method. In this lesson, students will complete math scenarios related to setting up equipment for experiments in a science lab.

Topic Words

experiment	science	scientific method

Math Words

add	equal	altogether	minus	negative
more	solve	borrow	plus	
count	answer	subtract	positive	

* Power Words

Benchmark Assessments

- Math Problem Solving: Add and Subtract
- Basic Math: Numbers and Counting to 20
- Early Learning: Emerging Math
- Emerging Skills: Early Emerging Math Rubric

Unit Checkpoint Assessments

- Level 2-3, Mathematics
- Level 1, Combined Counting, Reading and Mathematics (Questions 5 and 6)

Lesson at a Glance

	Activity 1.1-1.9	Activity 2.1-2.2
Instructional Activities	Subtraction	Adding Positive and Negative Numbers

See how these activities fit into the **Suggested Unit Pacing** .

ULS Materials and Resources

Activity 1.1-1.9	Activity 2.1-2.2
Math Story 1: Subtracting to 10 Vertical **Math Story 2: Subtracting to 10 Horizontal** **Math Story 3: Subtracting to 20 Vertical** **Math Story 4: Subtracting to 20 Horizontal** **Math Story 5: Subtracting to 50 Vertical** **Math Story 6: Subtraction to 50 Horizontal** **Math Story 7, 8 & 9: Subtracting 2-Digit Numbers - Borrowing** **Math Story 10, 11 & 12: Subtracting 3-Digit Numbers** **Math Story 13 & 14: Multi-Step Problem** **Manipulatives** (located in 19c) **Standards Connection A** (located in 19a) **Standards Connection B** (located in 19a)	**Clues Guides 1** **Math Story 15a-15b: Positive and Negative Numbers** **Clues Guide 2** **Math Story 16a-17b: Adding Positive and Negative Numbers** **Manipulatives** (located in 19c) **Standards Connection A** (located in 19a) **Standards Connection B** (located in 19a)

Math Supports: Math Story Problems include interactive manipulatives. Use addition tools, such as those listed below, real object or printable manipulatives to support student learning as needed.

Instructional Tools: Number Journal
Instructional Tools: Math Pack/ Numbers
Instructional Guides: Mathematics
L³ Skills: Math Skills

n2y Math Manipulatives Kit

Circle Counters
Foam Tiles
Magnet Numbers
MathLine®
Foldable MathLine®

Additional Materials

Instructional Targets

Math Standards for Algebra - Seeing Structure in Expressions

- ***Building Blocks to Algebra:*** Understand and use +, - and = to solve addition and subtraction problems.
- ***Write Expressions in Equivalent Forms to Solve Problems:*** Write and simplify an expression which represents a real-world situation.

Math Standards for Algebra - Reasoning with Equations and Inequalities

- ***Understand solving equations as a process of reasoning and explain the reasoning:*** Order a sequence of steps to solve an equation.

Instructional Routine

? or

Introduce	• Introduce the activity by asking a focus question about subtraction. For example, display a minus sign and ask, "When we see this sign what should we do—add or subtract?" Discuss students' responses. • Introduce and discuss the symbols used in a subtraction problem, including the minus sign and equal sign. • Tell students that their job will be to count and subtract numbers. Remind students that when they see a minus sign, it means to subtract or take away. • Review the learning goal with students: **Level 2-3: I will subtract to solve a math problem.** **Level 1: I will count objects.**
Model	Read and act out a Math Story problem. **Level 3:** Model the steps of solving a subtraction problem. Model using math supports as needed. Then solve the math problem. Use Lesson 19a Standards Connection B to model calculator use as needed. **Level 2:** Model the steps of solving the problem using Manipulatives. Show students how to group the Manipulatives to represent the numbers in the problem. Model using other math supports as needed. Then solve the problem by counting and removing the target number of items. Count the total number of Manipulatives left. Use Lesson 19a Standards Connection B to model calculator use as needed. **Level 1:** Model counting the lesson objects for the first number in the problem. Then model matching the correct numeral with the number of lesson objects counted. Repeat for each number in the problem as well as the answer to the problem. To extend the lesson, model comparing numbers in Math Story Problems using Lesson 19a Standards Connection A.
Provide Practice	***Provide students with appropriate real-world Math Stories, Manipulatives/lesson objects and the Standards Connections as needed.*** **Level 3:** Have the students read, act out, write and solve a math problem. **Level 2:** Read and act out a Math Story. Have the student illustrate/represent the Math Story using desired Manipulatives. Have the student solve the math problem. **Level 1:** Read and act out a Math Story. Have the student participate in counting the number or numbers using Manipulatives. Have the student use their active participation mode to select the number counted from a narrowed field or errorless choice(s).
Review	• Review selected Math Story Problems with students.

Check Understanding ?

Level 3: Can the student read, write and solve a math problem (using individual modifications)?
Level 2: Can the student use objects/manipulatives to represent and solve a math problem?
Level 1: Can the student participate in counting objects and choosing numbers?

Instructional Targets

Math Standards for Algebra - Seeing Structure in Expressions

- ***Building Blocks to Algebra:*** Understand and use +, - and = to solve addition and subtraction problems. Indicate positive and negative numbers (use of a number line, temperatures including negative numbers, etc.) in a real-world scenario. Add and subtract rational numbers. Identify the additive inverse.

Instructional Routine

? or

Introduce	• Introduce the activity by asking a focus question about subtraction. For example, display a minus sign and ask, "What else does this sign mean besides subtract—negative or positive?" Discuss students' responses. • Introduce and discuss the symbols used to indicate a negative and positive number, including the minus sign and the plus sign. Discuss the uses of a negative number in temperature, sea level and when owing money. • Tell students that their job will be to count and add negative and positive numbers and graph the number on a number line. Remind students that when they see a minus sign, or negative sign, it means that the number is less than zero. • Review the learning goal with students: **Level 2-3: I will solve a math problem and graph the answer.** **Level 1: I will count objects with negative numbers.**
Model	Read Clues Guide 1: Positive and Negative Numbers and Clues Guide 2: Adding Positive and Negative Numbers. **Level 3:** Model the steps of graphing a positive and negative number on a number line. Then model writing the number with the appropriate sign in front of it. Then model the steps of solving an addition problem involving negative and positive numbers. Model using math supports as needed. Then solve the problem. Use Lesson 19a Standards Connection B to model calculator use as needed. **Level 2:** Model the steps of graphing a positive and negative number on a number line. Then model selecting the number with the appropriate sign in front of it. Then model the steps of solving the problem using the number line. Model using other math supports as needed. Then solve the problem by counting in the targeted direction. Use Lesson 19a Standards Connection B to model calculator use as needed. **Level 1:** Model counting on the number line to reach the targeted number. Then model counting the lesson objects for the first number in the problem. Then model matching the correct numeral with the number of lesson objects counted. Repeat for each number in the problem as well as the answer to the problem. To extend the lesson, model comparing numbers in Math Story Problems using Lesson 19a Standards Connection A.
Provide Practice	***Provide students with Clues Guides 1 and 2, appropriate real-world Math Stories, Manipulatives/lesson objects and the Standards Connections as needed.*** **Level 3:** Have the students read, act out, write and solve a math problem and graph a number. **Level 2:** Read and act out a Math Story. Have the student illustrate/represent the Math Story using desired Manipulatives. Have the student solve the math problem and select the number. **Level 1:** Read and act out a Math Story. Have the student participate in counting the number or numbers using Manipulatives. Have the student use their active participation mode to select the number counted from a narrowed field or errorless choice(s).
Review	• Review selected Math Story Problems with students.

Check Understanding ?

- **Level 3:** Can the student read, write and solve a math problem and graph a number (using individual modifications)?
- **Level 2:** Can the student use objects/manipulatives to represent and solve a math problem and select a number?
- **Level 1:** Can the student participate in counting objects and choosing numbers?

Lesson 19c - Math Story Problems - Multiplication and Division
Prepping the Lab

19c

Instructional Targets

Math Standards for Algebra - Seeing Structure in Expressions
- ***Building Blocks to Algebra:*** Model and solve problems involving multiplication or division.
- ***Write Expressions in Equivalent Forms to Solve Problems:*** Write and simplify an expression which represents a real-world situation.

Math Standards for Number and Quantity: The Real Number System
- ***Extend the Properties of Exponents to Rational Exponents:*** Determine the value of a quantity that is squared or cubed.

Differentiated Tasks

Level 3 Students will...
- In the context of a real-world scenario, model multiplication and division with objects and numbers that show equal groups.
- In the context of a real-world scenario, write and simplify an expression.
- Identify perfect squares from 0 to 100.

Level 2 Students will...
- Count equal numbers of objects in selected groups or an array.
- In the context of a real-world scenario, select numbers to write and simplify an expression.
- Create a representation of a perfect square.

Level 1 Students will...
- Count a set of objects in a group through an active participation response (e.g., voice output device, eye gaze choice board).
- In the context of a real-world scenario, select numbers to write an expression from a narrowed field or errorless choice(s).
- Select blocks to build a model of the perfect square through an active participation response(e.g., voice output device, eye gaze choice board).

Topic Connection

In this unit, students are learning about science, scientists and the scientific method. In this lesson, students will complete math scenarios related to setting up equipment for experiments in a science lab.

Topic Words

experiment	science	scientific method

Math Words

add	solve	divide
more	answer	positive
count	altogether	negative
equal	multiply	square

* Power Words

Benchmark Assessments
- Math Problem Solving: Multiply and Divide
- Basic Math: Numbers and Counting to 20
- Early Learning: Emerging Math
- Emerging Skills: Early Emerging Math Rubric

Unit Checkpoint Assessments
- Level 2-3, Mathematics
- Level 1, Combined Counting, Reading and Mathematics (Questions 5 and 6)

Lesson at a Glance

	Activity 1.1-1.2	Activity 2	Activity 3
Instructional Activities	Multiplication	Division	Square Numbers
ULS Materials and Resources	**Math Story 1 & 2: Multiplication - Single Digit** **Math Story 3 & 4: Multiplicaiton - Double Digit** **Manipulatives** **Standards Connection**	**Math Story 5, 6, 7 & 8: Division** **Manipulatives**	**Clues Guide 3** **Math Story 9 & 10: Square Numbers** **Manipulatives**
Additional Materials			

See how these activities fit into the **Suggested Unit Pacing** .

Math Supports: Math Story Problems include interactive manipulatives. Use additional tools, such as those listed below, real object or printable manipulatives to support student learning as needed.

Instructional Tools: Number Journal

Instructional Tools: Math Pack/ Numbers

Instructional Guides: Mathematics

L³ Skills: Math Skills

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Magnet Numbers
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Lesson 19c - Math Story Problems
Activity 1.1-1.2 - Multiplication

19c
Activity 1.1-1.2

Instructional Targets

Math Standards for Algebra - Seeing Structure in Expressions

- ***Building Blocks to Algebra:*** Model and solve problems involving multiplication or division.
- ***Write Expressions in Equivalent Forms to Solve Problems:*** Write and simplify an expression which represents a real-world situation.

Instructional Routine

? or

Introduce	• Introduce the activity by asking a focus question about multiplication. For example, display a multiplication sign and ask, "When we see this sign what should we do—divide or multiply?" Discuss students' responses. • Introduce and discuss symbols used in a multiplication problem, including the multiplication sign and equal sign. • Tell students that their job will be to count and multiply numbers. Remind students that when they see a multiplication sign it means to add a certain number, a certain amount of times. • Review the learning goal with students: **Level 2-3: I will multiply to solve a math problem.** **Level 1: I will count objects.**
Model	Display a multiplication problem. Problems 1 and 2 are provided in two formats. Choose the format that meets the majority of the students' needs. Read and act out the Math Story Problem. **Level 3:** Model the steps of solving a multiplication problem. Model using math supports as needed. Then solve the math problem. **Level 2:** Model the steps of solving the problem using Manipulatives. Show students how to group the Manipulatives to represent the numbers in the problem. Model using other math supports as needed. Then solve the problem by counting the total number of Manipulatives. **Level 1:** Model matching the correct numerals in the Math Story Problem. Model placing the Manipulatives into equal groups. Then model counting the Manipulatives.
Provide Practice	***Provide students with appropriate real-world Math Stories and Manipulatives as needed.*** **Level 3:** Have the student read, act out, write and solve the math problem. **Level 2:** Read and act out a Math Story. Have the student illustrate/represent the Math Story using desired Manipulatives. Have the student solve the math problem. **Level 1:** Read and act out a Math story. Have the student participate in grouping and then counting the number of Manipulatives. Have the student use his or her active participation mode to select the number counted from a narrowed field or errorless choice(s). Use the Standards Connection to extend the activity by multiplying positive and negative numbers.
Review	• Review selected Math Story Problems with students.

Check Understanding ?

- **Level 3:** Can the student read, write and solve a math problem (using individual modifications)?
- **Level 2:** Can the student use objects/manipulatives to represent and solve a math problem?
- **Level 1:** Can the student participate in counting objects and choosing numbers?

Lesson 19c - Math Story Problems
Activity 2 - Division

19c
Activity 2

Instructional Targets

Math Standards for Algebra - Seeing Structure in Expressions

- ***Building Blocks to Algebra:*** Model and solve problems involving multiplication or division.
- ***Write Expressions in Equivalent Forms to Solve Problems:*** Write and simplify an expression which represents a real-world situation.

Instructional Routine

? or

Introduce	• Introduce the activity by asking a focus question about division. For example, display a division sign and ask, "When we see this sign what should we do—divide or multiply?" Discuss students' responses. • Introduce and discuss symbols used in a division problem, including the division sign and equal sign. • Tell students that their job will be to count and divide numbers. Remind students that when they see a division sign, it means to subtract a number a certain amount of times. • Review the learning goal with students: **Level 2-3: I will divide to solve a math problem.** **Level 1: I will count objects**
Model	Read and act out the Math Story Problem. **Level 3:** Model the steps of solving a division problem. Model using math supports as needed. Then solve the math problem. **Level 2:** Model the steps of solving the problem using Manipulatives. Show students how to group the Manipulatives to represent the numbers in the problem. Model using other math supports as needed. Then solve the problem by counting the total number of groups. **Level 1:** Model matching the correct numerals in the Math Story Problem. Model placing the Manipulatives into equal groups. Then model counting the groups.
Provide Practice	***Provide students with appropriate real-world Math Stories and Manipulatives as needed.*** **Level 3:** Have the students read, act out, write and solve the math problem. **Level 2:** Read and act out a Math Story. Have the student illustrate/represent the Math Story using desired Manipulatives. Have the student solve the math problem. **Level 1:** Read and act out a Math Story. Have the student participate in grouping and then counting the number of Manipulatives. Have the student use his or her active participation mode to select the number counted from a narrowed field or errorless choice(s).
Review	• Review selected Math Story Problems with students.

Check Understanding ?

- **Level 3:** Can the student read, write and solve a math problem (using individual modifications)?
- **Level 2:** Can the student use objects/manipulatives to represent and solve a math problem?
- **Level 1:** Can the student participate in counting objects and choosing numbers?

Lesson 19c - Math Story Problems
Activity 3 - Square Numbers

19c
Activity 3

Instructional Targets

Math Standards for Algebra - Seeing Structure in Expressions
- ***Building Blocks to Algebra:*** Model and solve problems involving multiplication or division.

Math Standards for Number and Quantity: The Real Number System
- ***Extend the Properties of Exponents to Rational Exponents:*** Determine the value of a quantity that is squared or cubed.

Instructional Routine

? or

Introduce	• Introduce the activity by asking a focus question about the properties of a square. For example, display a square and ask, "What do we know about the sides of a square—they are all the same length or they can be different lengths?" Discuss students' responses. • Introduce and discuss the symbol of a square. Explain to students that numbers are considered square numbers if the number of blocks in them can form a square. Build a square and point out that the width and the length have the same number. • Tell students that their job will be to build a square to determine if a number is a square. Remind students that there should be the same number of blocks going across a row as there are going down a column. • Review the learning goal with students: **Level 2-3: I will build and identify a perfect square.** **Level 1: I will count blocks to make a perfect square.**
Model	Read and review Clues Guide 3. Read and act out the Math Story Problem. **Level 3:** Model the steps of building a perfect square. Model using math supports as needed. Then solve the math problem. **Level 2:** Model the steps of solving the problem and building a square using Manipulatives. Show students how to group the Manipulatives to represent the numbers in the problem. Model using other math supports as needed. Then solve the problem by counting the total number of blocks. **Level 1:** Model matching the correct numerals in the Math Story Problem. Model placing the Manipulatives into perfect squares. Then model counting the groups.
Provide Practice	***Provide students with Clues Guide 3, the appropriate real-world Math Stories and Manipulatives as needed.*** **Level 3:** Have the students read, act out, write and solve the math problem to build a perfect square. **Level 2:** Read and act out a Math Story. Have the student illustrate/represent the Math Story using desired Manipulatives. Have the student solve the math problem to build a square. **Level 1:** Read and act out a Math Story. Have the student participate in building a square and then counting the number of blocks. Have the student use his or her active participation mode to select the number counted from a narrowed field or errorless choice(s).
Review	• Review selected Math Story Problems with students.

Check Understanding ?

Level 3: Can the student read, write and solve a math problem to build a perfect square (using individual modifications)?
Level 2: Can the student use objects/manipulatives to represent and solve a math problem to build a square?
Level 1: Can the student participate in counting blocks and choosing numbers representing a square?

Instructional Targets

Math Standards for Algebra - Seeing Structure in Expressions

- ***Building Blocks to Algebra:*** Model and solve problems involving multiplication or division. Multiply and divide rational numbers.

Differentiated Tasks

Level 3 Students will...

- In the context of a real-world scenario, model multiplication and division with objects and numbers that show equal groups.
- Use appropriate operations to multiply and divide positive and negative numbers.

Level 2 Students will...

- Count equal numbers of objects in selected groups or an array.
- Multiply or divide positive and negative numbers in a real-world scenario (e.g., using a number line).

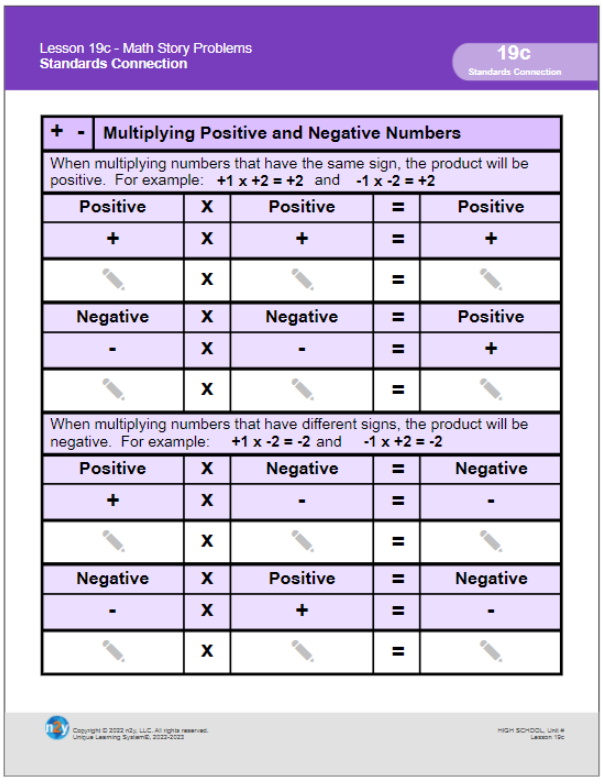
Level 1 Students will...

- Count a set of objects in a group through an active participation response (e.g., voice output device, eye gaze choice board).
- Count a set of objects in a multiplication or division real-world problem involving positive and negative numbers through an active participation response (e.g., voice output device, eye gaze choice board).

Have students use the lesson scenarios to demonstrate multiplication of positive and negative numbers. Enter the numbers for each problem and have the students solve for the product and fill in the answer.

Multiplying positive and negative numbers is a needed prerequisite skill for solving equations in algebra. In lesson 25, when solving a subtraction equation with B as the unknown variable, students will be left with "-B = a" number.
For example, "-B = 5". Students need to understand the multiplicative inverse to solve for B. While completing this Standards Connection, stress to students that multiplying a "-B" times "-1" will produce a positive "B" or "-B x -1 = B".

Review each different type of problem:
"+x+"; "-x-"; "+x-" and "-x+".
Guide students to recognizing the following rules:
1. Same Signs = Positive
2. Different Signs = Negative



Lesson 19c - Math Story Problems
Standards Connection

19c
Standards Connection

+ -	Multiplying Positive and Negative Numbers			
When multiplying numbers that have the same sign, the product will be positive. For example: +1 x +2 = +2 and -1 x -2 = +2				
Positive	X	Positive	=	Positive
+	X	+	=	+
	X		=	
Negative	X	Negative	=	Positive
-	X	-	=	+
	X		=	
When multiplying numbers that have different signs, the product will be negative. For example: +1 x -2 = -2 and -1 x +2 = -2				
Positive	X	Negative	=	Negative
+	X	-	=	-
	X		=	
Negative	X	Positive	=	Negative
-	X	+	=	-
	X		=	

+ -	Multiplying Positive and Negative Numbers

When multiplying numbers that have the same sign, the product will be positive. For example: **+1 x +2 = +2** and **-1 x -2 = +2**

Positive	X	Positive	=	Positive
+	X	+	=	+
	X		=	
Negative	**X**	**Negative**	**=**	**Positive**
-	X	-	=	+
	X		=	

When multiplying numbers that have different signs, the product will be negative. For example: **+1 x -2 = -2** and **-1 x +2 = -2**

Positive	X	Negative	=	Negative
+	X	-	=	-
	X		=	
Negative	**X**	**Positive**	**=**	**Negative**
-	X	+	=	-
	X		=	

Lesson 20 - Measure It!
Apple Dumplings

20

Instructional Targets

Math Standards for Number and Quantity: Quantities
- ***Reason Quantitatively and Use Units to Solve Problems:*** Express quantities to the appropriate precision of measurement.

Math Standards for Life Skills for Measurement
- ***Life Skills for Measurement:*** Select units and use measurement tools to solve problems accurately in the context of a daily living activity.

Reading Standards for Informational Text
- ***Key Ideas and Details:*** Summarize a sequence of events or steps in a text.

Standards for Speaking and Listening
- ***Comprehension and Collaboration:*** Initiate and participate in grade level and age-appropriate discussion on diverse topics to: Express an opinion, share ideas and information, and ask and respond to questions relevant to the topic.

Standards for Daily Living
- ***Food Preparation and Handling:*** Safely prepare basic foods using appropriate kitchen tools.
- ***Nutrition:*** Recognize basic foods and/or meals that make up a balanced diet.

Differentiated Tasks

Level 3 Students will...
- Independently use measurement tools in daily living skill activities.
- Independently use measurement tools in daily living skills activities.
- Describe a sequence of events from a text or list the steps of a procedure.
- Share information and opinions, ask and answer questions and make comments during a group discussion.
- Identify and use appropriate tools and/or ingredients to safely prepare basic meal items.
- Identify food items and/or meals to create a balanced diet.

Level 2 Students will...
- Identify and use measurement tools appropriate for a supported daily living task.
- Identify and use measurement tools appropriate for a supported daily living task.
- Use picture supports to identify a sequence of events from a text or list the steps of a procedure.
- Use picture supports to share information and opinions, ask and answer questions and make comments during group discussions.
- Use picture supports to select tools and ingredients to prepare basic meal items.
- Use picture supports to identify food items and/or meals to create a balanced diet.

Level 1 Students will...
- Select a measurement tools for a daily living task through an active participation response (e.g., voice output device, eye gaze choice board).
- Select measurement tool for a daily living task.
- Select a picture from a narrowed field or errorless choice(s) to identify an event from a text or a step from a procedure.
- Participate in conversational exchanges, using communication technology and picture supports.
- Recognize tools and/or ingredients to actively participate in preparation of basic meal items from a narrowed field or errorless choice(s).
- Given a narrowed field or errorless choice(s), select foods and/or meals to create a balanced diet.

Topic Connection

Throughout this unit, students have learned about the scientific method. They have learned about five scientists and the experiments they conducted, including Thomas Edison. In this lesson, students will make Thomas Edison's favorite food—apple dumplings.

Topic Words

experiment	scientist	scientific method

Recipe Words

add	cook	measure	stir
bake	cup	more	tablespoon
beat	less	pour	teaspoon

* Power Words

Lesson at a Glance

	Activity 1	Activity 2	Activity 3	Activity 4
Instructional Activities	Introduce the Recipe	Prepare to cook	Cook and Eat	Review the Recipe
ULS Materials and Resources	**Recipe** **Picture/Word Cards** apples crescent rolls brown sugar cinnamon butter lemon lime soda apple slicer baking dish small bowl spoon Apple Dumplings	**Recipe** **Recipe Sequencing Activity** **Recipe Sequencing Cards**	**Recipe** **Picture/Word Cards** apples crescent rolls brown sugar cinnamon butter lemon lime soda apple slicer baking dish small bowl spoon Apple Dumplings **Standards Connection** **Core Task 6.8**	**Recipe Review** **Picture/Word Cards** apples crescent rolls brown sugar cinnamon butter lemon lime soda apple slicer baking dish small bowl spoon Apple Dumplings **Core Task 2.4**

See how these activities fit into the **Suggested Unit Pacing**.

Core Materials Tasks: **5.0, 6.0, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.9**
Instructional Guides: Mathematics
Instructional Tools: Math Pack / Cooking

Additional Materials

Food Items (serves 16)
2 large apples, washed and peeled
2 (8-oz) cans crescent rolls
1 C brown sugar
1 t cinnamon
¾ C butter, melted
12-oz can lemon lime soda

Cooking Tools
apple slicer
9-in x 13-in baking dish, sprayed with cooking spray
small bowl
spoon

*Always consider student food allergies and dietary restrictions when preparing recipes.

Instructional Target

Standards for Speaking and Listening

- ***Comprehension and Collaboration:*** Initiate and participate in grade level and age-appropriate discussion on diverse topics to: Express an opinion, share ideas and information, and ask and respond to questions relevant to the topic.

Instructional Routine

Introduce	• Introduce this activity by asking a focus question about the recipe. For example, ask, "What can we follow to help us cook something—recipe or dictionary?" Discuss students' responses. • Explain to students that a recipe includes a list of ingredients, or things needed, and directions. Tell students that they will follow a recipe to make Apple Dumplings. • Explain to students that after reading the ingredients and recipe, they will prepare a shopping list to get the ingredients needed to make the Apple Dumplings. For example, say, "We will be reviewing a recipe for Apple Dumplings. Your job is to listen to the steps of the recipe." • Review the learning goal with students: **I will learn how to make Apple Dumplings.**
Model	• Display the recipe. Point to the list of ingredients and say, "This part of the recipe tells us what we need to make Apple Dumplings." Read the list of ingredients aloud. • Next, point out the numbered steps. Explain, "This part of the recipe tells us how to make Apple Dumplings." Read the steps aloud. • Discuss how important it is to make sure you have everything necessary to make a recipe before starting. • Model how to review the ingredients to make a shopping list. For example, say, "What do I need to get in order to make this recipe?" Review ingredients, making note of what is needed and what is already provided.
Provide Practice	**Level 3:** Have the student participate in identifying the ingredients needed. Have the student independently create a shopping list of ingredients. **Level 2:** Have the student use pictures to identify the ingredients needed. Have the student use picture supports to create a shopping list of ingredients. **Level 1:** Have the student select a picture of an ingredient from the recipe. Have the student select a picture to identify an ingredient for the shopping list.
Review	• Review the shopping list, ensuring all ingredients and tools are accounted for.
Extension	• Discuss with students ways that the items may be obtained. This may include a community outing, shopping online or using items that you already have on hand. Plan an activity to obtain the ingredients.

Check Understanding

- **Level 3:** Can the student identify the ingredients needed for the recipe? Can the student independently create a shopping list of ingredients?
- **Level 2:** Can the student use picture supports to identify ingredients needed in the recipe? Can the student use picture supports to create a shopping list of ingredients?
- **Level 1:** Can the student choose a picture of an ingredient? Can the student choose a picture of an ingredient to place on a shopping list?

Instructional Target

Reading Standards for Informational Text
- ***Key Ideas and Details:*** Summarize a sequence of events or steps in a text.

Instructional Routine

? or

Introduce	• Introduce this activity by asking a focus question about the recipe. For example, ask, "What could happen if a recipe is not followed in order?" Discuss students' responses. • Reread the recipe steps. Discuss the importance of doing the steps in the correct order. • Tell students that they will be putting the steps of the recipe in the proper order. For example, say, "We need to make a recipe card for Apple Dumplings. Your job is to put the steps of the recipe in order." • Review the learning goal with students: **I will put the steps of the recipe in order.**
Model	• Display the Recipe Sequencing Activity. • Ask questions such as, "What will we do first? What will we do last? What do we need to do before we wrap each apple slice in a crescent roll?" • Model placing a few of the steps in order on the Recipe Sequencing Activity.
Provide Practice	***Provide the student with the Recipe Sequencing Activity.*** **Level 3:** Have the student describe and put the steps of the recipe in order. **Level 2:** Have the student use picture supports to put the steps of the recipe in order. **Level 1:** Have the student select a picture from a narrowed field or errorless choice(s) to identify a step of the recipe.
Review	• Review the order of the recipe steps. Explain why it is important to do steps in order. Ask students, "What would happen if we did the steps out of order?"

Check Understanding ?

- **Level 3:** Can the student describe and put the steps of the recipe in order?
- **Level 2:** Can the student use picture supports to put the steps of the recipe in order?
- **Level 1:** Can the student select a picture from a narrowed field or errorless choice(s) to identify a step of the recipe?

Instructional Targets

Math Standards for Number and Quantity: Quantities
- ***Reason Quantitatively and Use Units to Solve Problems:*** Express quantities to the appropriate precision of measurement.

Standards for Life Skills for Measurement
- ***Life Skills for Measurement:*** Select units and use measurement tools accurately to solve problems in the context of a daily living activity.

Standards for Daily Living
- ***Food Preparation and Handling:*** Safely prepare basic foods using appropriate kitchen tools.

Instructional Routine

? or

Introduce	• Introduce this activity by asking a focus question about the recipe. For example ask, "The recipe calls for 1 teaspoon of cinnamon. What do we have to do to make sure we have 1 teaspoon of cinnamon—add or measure?" Discuss students' responses. • Explain to students that we need to measure ingredients correctly and accurately. Measuring is a count of how many units are needed to fill, cover or match an object or area being measured. • Tell students that they will be making Apple Dumplings. It will be their job to follow the recipe and measure the ingredients correctly. • Review the learning goal with students: **I will use measuring tools to make a recipe.** • Optional: Use Core Tasks 6.0, Mealtime Job List to assign responsibilities during this activity.
Model	• Review Core Task 6.8, Food Prep. • Present and identify the measuring tools needed for a recipe: measuring cups and spoons. • Remind students of how important accurately measuring and following steps are in making a recipe. • Model how to accurately fill and measure each type of tool. • Remind students of why there are various sizes of measuring tools. For example, say "Measuring cups help us to measure a larger amount of an ingredient. Measuring spoons help us measure smaller amounts of an ingredient." • Use the Standards Connection to explore more about comparing volume and measurement.
Provide Practice	***Display Core Task 6.8. Provide students with the Recipe.*** **Level 3:** Have the student make the recipe using measuring tools and supports as needed. **Level 2:** Have the student select the appropriate measuring tools to use in making the recipe. Have the student match objects with the same volume of measurement. For example, have student measure the same volume of cinnamon. Point out how the measurements are the same (match). **Level 1:** Have the student select a measuring tool used in the recipe from a narrowed field or errorless choice(s). With support, have the student compare two measured volumes and choose which is larger. Have the student match objects of the same size and shape. For example, display one stick of butter and ask student to find the matching stick of butter from a narrowed field or errorless choice(s). NOTE: The following Core Tasks can be used during or after cooking: Core Tasks 6.1: Set table, 6.2: Wash Dishes, 6.3: Dry Dishes, 6.9: Mealtime Manners, 6.4: Clear Table, 6.5: Put Away Food, 6.6: Clear Counters, 6.7 Sweep Floor
Review	• Complete the recipe and eat.

Check Understanding ?

- **Level 3:** Can the student use measuring tools while making a recipe?
- **Level 2:** Can the student select appropriate measuring tools to be used in making a recipe? Can the student match objects of the same volume?
- **Level 1:** Can the student select a measuring tool from a narrowed field or errorless choice(s) used in making a recipe? Can the student match objects of same size and shape?

Instructional Targets

Standards for Speaking and Listening
- ***Comprehension and Collaboration:*** Initiate and participate in grade level and age-appropriate discussion on diverse topics to: Express an opinion, share ideas and information, and ask and respond to questions relevant to the topic.

Standards for Daily Living
- ***Nutrition:*** Recognize basic foods and/or meals that make up a balanced diet.

Instructional Routine

? or or

Introduce	• Introduce this activity by asking a focus question about the recipe. For example, ask, "What recipe did we cook—Apple Dumplings or ice cream?" Discuss students' responses. • Remind students that everyone has different tastes they like and dislike. Simply because someone does not like a recipe does not mean it is a bad recipe. • Discuss USDA MyPlate with students. Review the basic food groups and discuss what types of food are in those food groups. Use the MyPlate Poster in Core Task 2.4 to provide a visual. • Tell students that they will be reviewing the recipe. Explain that their job will be to tell others if they liked the recipe and to decide if the recipe is healthy. • Review the learning goals with students: **I will share my opinions about the recipe.** **I will decide if the recipe was healthy.**
Model	• Display the Recipe Review. • Model how to fill out the review. Share your personal opinion about the recipe with everyone. • Explain to students how to decide if the recipe was healthy or not. For example, ask "What ingredients were in this recipe? Where are those ingredients on MyPlate? Does the recipe have too many of certain food groups?" Use the MyPlate Poster in Core Task 2.4 and the Picture/Word Cards to provide visual.
Provide Practice	***Display Core Task 2.4 and provide each student with a Recipe Review and any alternate forms of writing needed.*** **Level 3:** Have the student share an opinion about the completed recipe. Have the student identify if the recipe was healthy or not. **Level 2:** Have the student use picture supports to share an opinion about the completed recipe. Have the student use picture supports to identify if the recipe was healthy or not. **Level 1:** Have the student use assisted technology and picture supports to share an opinion. Have the student respond to a food choice.
Review	• Allow students to share their recipe reviews with other students. • Encourage discussion of what made the recipe good or bad. Ask for suggestions to add to the recipe to make it better.

Check Understanding ?

- **Level 3:** Can the student share an opinion about the completed recipe? Can the student identify the healthiness of the recipe?
- **Level 2:** Can the student use picture supports to share an opinion about the completed recipe? Can the student use picture supports to identify the healthiness of the recipe?
- **Level 1:** Can the student use assisted technology and picture supports to share an opinion about the recipe? Can the student respond to a food choice?

Instructional Targets

Math Standards for Number and Quantity: Quantities
- ***Reason Quantitatively and Use Units to Solve Problems:*** Express quantities to the appropriate precision of measurement.

Math Standards for Life Skills for Measurement
- ***Life Skills for Measurement:*** Select units and use measurement tools accurately to solve problems in the context of a daily living activity.

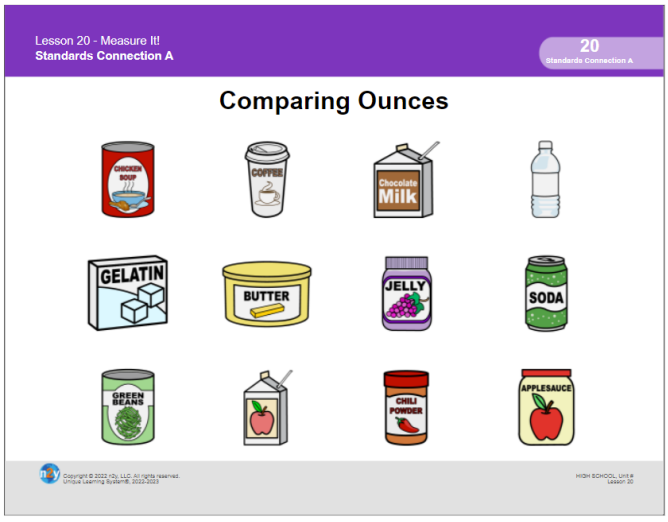
Building Blocks to Algebra: Recognize and compare numbers showing the symbols >, < or =.

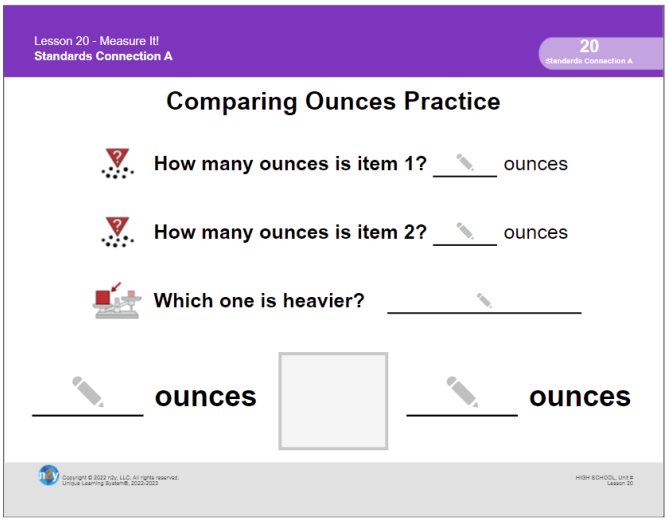
Differentiated Tasks

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• Independently use measurement tools in daily living skill activities. • Compare two numbers and use symbols to indicate >, < or =	• Identify and use measurement tools appropriate for a supported daily living task. • Compare two groups of objects and determine which group is bigger, smaller or equal in amount.	• Select a measurement tool for a daily living task. • Compare two groups of objects and identify the group that is bigger/more, smaller/less or equal to from a narrowed field or errorless choice(s).

Learning About Ounces

The page below shows several items that are measured in ounces. Present real examples of these items and have students determine each item's weight in ounces. Use the Comparing Ounces Practice page to compare the weight of the different items. Continue this activity and extend interest by introducing a variety of objects.





Instructional Targets

Math Standards for Number and Quantity: Quantities
- ***Reason Quantitatively and Use Units to Solve Problems:*** Express quantities to the appropriate precision of measurement.

Math Standards for Life Skills for Measurement
- ***Life Skills for Measurement:*** Select units and use measurement tools accurately to solve problems in the context of a daily living activity.

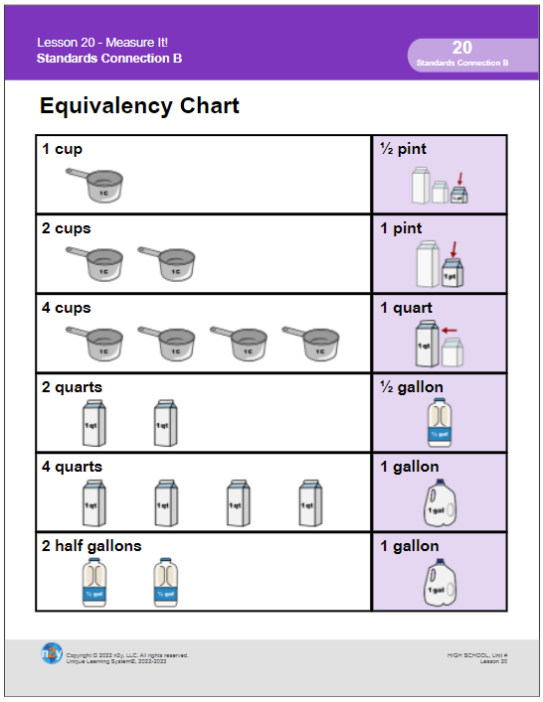
Building Blocks to Algebra: Recognize and compare numbers showing the symbols >, < or =.

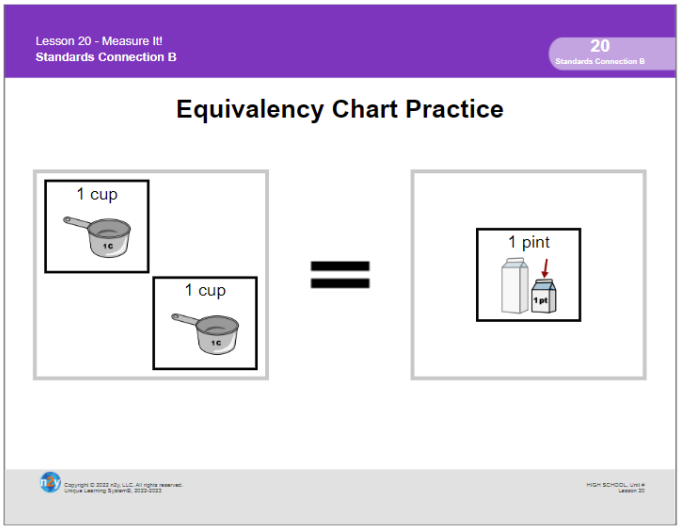
Differentiated Tasks

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• Independently use measurement tools in daily living skill activities. • Compare two numbers and use symbols to indicate >, < or =	• Identify and use measurement tools appropriate for a supported daily living task. • Compare two groups of objects and determine which group is bigger, smaller or equal in amount.	• Select a measurement tool for a daily living task. • Compare two groups of objects and identify the group that is bigger/more, smaller/less or equal to from a narrowed field or errorless choice(s).

Learning About Equivalents

The Equivalency Chart reviews equivalent measurements. Review the chart with students. Then, use the Equivalency Chart Practice page to have students practice finding equivalent amounts. Present students with dried beans or rice and measuring tools and encourage real practice of measuring and finding equivalents.





Lesson 21 - Read This Chart
In Africa With Jane Goodall

21

Instructional Targets

Math Standards for Statistics and Probability—Interpreting Categorical and Quantitative Data
Summarize, represent and interpret data on a single count or measurement variable:
- Create a bar graph to represent data.
- Interpret data from a graph.
- Compute the mean (average) and median of a data set.

Summarize, represent and interpret data on two categorical and quantitative variables:
- Design questions and make a plan to conduct a survey to gather data.
- Compare data on graph to show the relationship between two sets of data.

Math Standards for Statistics and Probability—Making Inferences and Justifying Conclusions
Understand and evaluate random processes underlying statistical experiments:
- Determine the likelihood of an event based on a data sample.
- Evaluate reports based on data.

Differentiated Tasks

Level 3 Students will...
- Organize data on a graph.
- Compare data from tables and graphs to report specific information.
- Calculate an average (mean) and median from data.
- Design a survey to ask questions and collect data to present on a graph.
- Compare data from two different populations on a graph.
- Identify and explain the rate of change of a line graph.
- On the basis of information, determine the probability that something is likely or unlikely to occur.
- Make an inference about the data in tables and graphs.

Level 2 Students will...
- Display data on a graph.
- Identify specific data from a table or graph.
- Identify a middle point (average) in a set of data.
- Ask questions to gather data for a survey.
- Identify specific data from a graph of two different populations.
- Identify the rate of change of a line graph with support.
- On the basis of available information, determine that something is likely to happen.
- Identify information about a group from a table or graph.

Level 1 Students will...
- Select pictures as part of a graph-creating process.
- Report data information that is presented in a table or graph.
- Communicate data information that describes an average.
- Ask a question and select pictures as part of a data-gathering process.
- Select pictures to indicate data on a graph of two different populations.
- Select a rate of change of a line graph with support.
- Select an activity that is likely to occur.
- With support, select a statement about a group based on data presented in a table or graph.

Topic Connection

Throughout this unit, students learn about science and leading scientists. Students learn how scientists ask questions and do experiments. In this lesson, students are analyzing and creating charts on Jane Goodall's work with chimpanzees.

Topic Words

experiment	question*	science	scientist

Math Words

average	data	mean	population
bar graph	group	median	probability
chart	information	middle	survey

* Power Words

Benchmark Assessments
- Math Problem Solving: Math: Data Analysis
- Early Learning: Emerging Math
- Emerging Skills: Early Emerging Math Rubric
- Emerging Skills: Number Match

Lesson at a Glance

	Activity 1	Activity 2	Activity 3	Activity 4	Activity 5
Instructional Activities	Read a Pie Chart	Conduct a Survey	Make a Graph	Mean, Median and Probability	Compare 2 Groups of Data
See how these activities fit into the **Suggested Unit Pacing**.					
ULS Materials and Resources	**Pie Chart** **Pie Chart Questions**	**Survey Cards** **Picture/Word Cards and Picture Cards** chimpanzee elephant giraffe	**Survey Graph** **Survey Questions**	**Mean and Median** **Probability Quiz**	**Double Bar Graph** **Double Bar Graph Questions**
		Transition Passport: Personal Life/Everyday Communication/ Introducing Yourself			
	n2y Math Manipulatives Kit Unifix® Cubes				
Additional Materials					

Instructional Target

Math Standards for Statistics and Probability—Interpreting Categorical and Quantitative Data
Summarize, represent and interpret data on a single count or measurement variable.
- Interpret data from a graph.

Instructional Routine

Introduce	• Introduce this activity by asking a focus question about charts and graphs. For example, display a pie chart and ask, "What does a pie chart give us—e-mail addresses or information?" Discuss students' responses. • Explain to students that different types of charts and graphs tell us different types of information. Explain how various charts and graphs work, including bar graphs, pie charts and line graphs. Ask, "What kind of information can go on a chart or graph?" • Tell students that they will be reading and answering questions about a pie chart on animals in Africa. For example, say, "We will be looking at a pie chart on animals found in Africa. Your job is to read the information on that pie chart and answer the questions." • Review the learning goals with students: **I will read information from a pie chart.** **I will answer questions using information from a pie chart.**
Model	• Display the pie chart. • Model how to read the pie chart. Read the title and the information. Point out the scale and emphasize the quantity each interval represents. • Model how to analyze the information by reading it out loud. Discuss how the size of each section of the pie chart shows a number. For example, say, "The section for chimpanzees looks the biggest. That must mean that more chimpanzees were seen than other animals."
Provide Practice	***Display the pie chart and questions.*** **Level 3:** Have the student independently read the pie chart and answer the pie chart questions. **Level 2:** Have the student use visual supports to read the pie chart. Read the questions and have the student answer the pie chart questions. **Level 1:** Have the student actively participate in answering the pie chart questions from a narrowed field or errorless choice(s).
Review	• Review the learning goals. Discuss the process students use to read the information on the pie chart and answer questions. • Review the pie chart questions with students.

Check Understanding

- **Level 3:** Can the student independently read the pie chart and answer the pie chart questions independently?
- **Level 2:** Can the student use visual supports to read the pie chart and answer the pie chart questions?
- **Level 1:** Can the student actively participate in answering the pie chart questions from a narrowed field or errorless choice(s)?

Instructional Target

Math Standards for Statistics and Probability—Interpreting Categorical and Quantitative Data
Summarize, represent and interpret data on two categorical and quantitative variables:
- Design questions and make a plan to conduct a survey to gather data.

Instructional Routine

? or

Introduce	• Introduce this activity by asking a focus question about surveys. For example, ask, "How can we find out what animal students want to study—conduct a survey or read a book?" • Explain to students that a survey is when a group of people are asked a question to gather information about a subject. • Tell students that they will ask questions to conduct a survey on what animal students want to study. • Review the learning goal with students: **I will ask questions to gather information for a survey.**
Model	• Review the survey question: "Which animal would you like to study?" • Identify and explain the Survey Cards. Show how the Survey Cards are used by modeling how to conduct a survey. For example, select a student to participate in your survey. Ask the student, "Would you like to participate in a survey on studying animals?" Hand the student a Survey Card and ask the student, "Which animal would you like to study?" or provide student with a choice of Picture/Word Cards and have them model answering from a field or single choice. • Optional: Use the Introducing Yourself poster located in the Transition Passport/ Personal Life/ Everyday Communication to model and practice introduction skills.
Provide Practice	***Provide students with Survey Card and Picture/Word Cards, and alternative forms of communication if needed. Have students use Picture/Word Cards to encourage choice making as an answer option when needed.*** **Level 3:** Have the student conduct a survey independently. Have the student collect the information independently. **Level 2:** Have the student ask the survey question using visual supports. Have the student collect the survey. **Level 1:** Have the student use their communication mode to ask a survey question. Have the student answer the survey question by making a selection from a narrowed field or errorless choice(s).
Review	• Review the learning goal. Review the process of answering and recording answers. • Review the answers students received during the survey.

Check Understanding ?

- **Level 3:** Can the student independently conduct a survey by asking a question and collecting the answer?
- **Level 2:** Can the student use supports to ask survey questions and collect answers?
- **Level 1:** Can the student use their communication mode to ask a survey question? Can the student make a selection to answer a survey question from a narrowed field or errorless choice(s)?

Instructional Targets

Math Standards for Statistics and Probability—Interpreting Categorical and Quantitative Data
Summarize, represent and interpret data on a single count or measurement variable.

- Interpret data from a graph.
- Create a bar graph to represent data.

Instructional Routine

? or

Introduce	• Introduce the activity by asking a focus question about surveys. For example, ask, "How can we find out which animal most students would like to study—graph the answer on a bar graph or listen to a story?" • Explain that a bar graph is a graph that uses columns made up of rectangles to record information. • Tell students that they will make and interpret a bar graph. • Review the learning goals with students: **I will make a bar graph.** **I will use a bar graph to answer questions.**
Model	• Model how to create the bar graph. Examine each answer and separate into different piles. • Determine into which column the answers go. Then color the appropriate number of squares in each column based on the number of answers. • Model how to interpret the information found on the bar graph to answer the Survey Questions. For example, say, "I see that 'elephant' is the tallest bar. This means that the most people would like to study elephants. How many people would like to study elephants? I can count the number of colored rectangles in the bar to see how many."
Provide Practice	**Level 3:** Have the student organize and create a bar graph independently. Have the student answer the survey questions independently. **Level 2:** Have the student use supports to create a bar graph. Have the student answer survey questions from a field of 2-3 choices. **Level 1:** Have the student select pictures from an errorless field to create the bar graph. Have the student answer a survey question by selecting a picture from a narrowed field or errorless choice(s).
Review	• Review the learning goal. Discuss the process students used to read the information on the chart and answer questions. • Review the answers the students have from their charts. • Discuss why the students have different answers, if graphs were made independently.

Check Understanding ?

Level 3: Can the student independently organize and create a bar graph? Can the student independently answer questions using information on a chart?

Level 2: Can the student use supports to create a bar graph? Can the student answer questions from a field of 2-3 choices?

Level 1: Can the student select pictures from an errorless field to place on a bar graph? Can the student answer a survey question by selecting a picture from a narrowed field or errorless choice(s)?

Instructional Targets

Math Standards for Statistics and Probability—Interpreting Categorical and Quantitative Data
Summarize, represent and interpret data on a single count or measurement variable.
- Compute the mean (average) and median of a data set.

Math Standards for Statistics and Probability—Making Inferences and Justifying Conclusions
Understand and evaluate random processes underlying statistical experiments:
- Determine the likelihood of an event based on a data sample.

Instructional Routine

? or

Introduce	• Introduce the activity by asking a focus question about the mean. For example, point to an object in the room, or a number on the board and denote the middle/half-way point asking, "What is the equal distance (half way) between two points—start or middle?" • Point out that the median is the middle point of data information and that the mean is the average of the data numbers. • Remind students there is a middle point in a set of numbers. The middle point can be the mean or the median. • Tell students they will find the middle points of some data and make guesses to questions. • Review the learning goals with students: **I will find the middle point of a set of numbers.** **I will make a guess to see if something is likely to happen.**
Model	Model finding the mean: • Model how to find the mean or average. For example, say, "I wonder what the average number, or the middle point, of chimp sightings in Africa was during weeks 1-5?" • Demonstrate the steps of adding up the numbers and dividing by 5 to reveal the mean. Model finding the median: • Model how to find the median, or middle most number, by putting the data in order and crossing off numbers in the beginning and end until only one number remains. Model answering probability questions: • Explain that probability means the likelihood of something happening. To further explain, say, "Look at the list of chimps spotted in Africa. Is it likely that every chimp is spotted the same number of times?" Discuss why or why it is not likely.
Provide Practice	***Provide students with the Mean and Median or Probability Quiz, any form of alternative writing needed and any visuals or Manipulatives.*** **Level 3:** Have the student calculate the mean and median independently. Have the student use data to determine the probability that something will occur. **Level 2:** Have the student identify the mean and median from a field of 2-3 choices. Have the student use data to determine if something is likely to happen again. **Level 1:** Have the student select the median from a narrowed field or errorless choice(s). Have the student select an activity that is likely to occur from a narrowed field or errorless choice(s).
Review	• Review the learning goals. Discuss the process students used to read the information on the chart and answer the questions. • Review the answers for the Mean and Median activity and the Probability Quiz.

Check Understanding ?

- **Level 3:** Can the student find the mean and median of a set of numbers independently? Can the student determine the probability that something will occur?
- **Level 2:** Can the student find the mean and median of a set of numbers from a field of 2-3 choices? Can the student determine if something is likely to happen given data and support?
- **Level 1:** Can the student select the median of a set of numbers from a narrowed field or errorless choice(s)? Can the student select an activity that is likely to occur from a narrowed field or errorless choice(s)?

Instructional Targets

Math Standards for Statistics and Probability—Interpreting Categorical and Quantitative Data
Summarize, represent and interpret data on two categorical and quantitative variables:
- Compare data on graph to show the relationship between two sets of data.

Math Standards for Statistics and Probability—Making Inferences and Justifying Conclusions
Understand and evaluate random processes underlying statistical experiments:
- Evaluate reports based on data.

Instructional Routine

? or

Introduce	• Introduce this activity by asking a focus question about charts and graphs. For example, display the double bar graph with two groups and ask, "What two groups are represented on this graph—boys and girls or cats and dogs?" Discuss students' responses. • Explain to students that graphs can be used to show information for two different groups or populations. For example, say, "One graph can show not only the favorite movies of boys, but can also show the favorite movies of girls. The group of boys would be shown with one bar in one color and the group of girls would be shown in another bar with a second color." • Tell students that they will be reading and answering questions about a double bar graph that shows the favorite animal in Africa of boys and girls. For example, say, "We will be looking at a double bar graph of the favorite animal of boys and girls. Your job is to read the information on the double bar graph and answer the questions." • Review the learning goals with students: **I will compare information from two groups on a double bar graph.** **I will use a double bar graph with two groups to answer questions.**
Model	• Display the double bar graph. • Model how to read the double bar graph. Read the title and the information. Point out the scale and emphasize the quantity each interval represents. Point out the two groups being represented by the information on the double bar graph. • Model how to analyze the information by reading it out loud. Point out the color code for each group represented on the double bar graph. Discuss one set of bars and the information they represent. For example, say, "The blue bar is bigger than the orange bar for chimpanzees. That must mean that more boys picked chimpanzees as their favorite."
Provide Practice	***Display the double bar graph and questions.*** **Level 3:** Have the student answer questions on a double bar graph to compare two groups. **Level 2:** Have the student use visual supports to read the double bar graph comparing two groups. Read the questions and have the student answer the double bar graph questions. **Level 1:** Have the student actively participate in answering the double bar graph questions comparing two groups from a narrowed field or errorless choice(s).
Review	• Review the learning goals. Discuss the process students use to read the information on the double bar graph and answer questions. • Review the double bar graph questions with students.

Check Understanding ?

- **Level 3:** Can the student answer questions on a double bar graph to compare two groups?
- **Level 2:** Can the student use visual supports to read the double bar graph comparing two groups and answer the double bar graph questions?
- **Level 1:** Can the student actively participate in answering the double bar graph questions comparing two groups from a narrowed field or errorless choice(s)?

Lesson 22 - Money
Volunteering at Science Night

22

Instructional Targets

Math Standards for Life Skills Measurement
- ***Life Skills for Measurement:*** Apply knowledge of money skills to real-world, problem-solving situations and scenarios.

Math Standards for Algebra - Seeing Structure in Expressions
- ***Building Blocks to Algebra:*** Understand and use +, - and = to solve addition and subtraction problems. Model and solve problems involving multiplication or division.

Math Standards for Life Skills for Ratio and Proportional Relationships
- ***Life Skills for Ratio and Proportional Relationships:*** Apply understanding of percentages in real-world scenarios (e.g., 10% tip, 30% sale). Solve real-world problems involving unit rate (e.g., If it takes one hour to make one pillow, how long will it take to make four pillows?).

Math Standards for Number and Quantity: The Complex Number System
- ***Solve Real-Life and Mathematical Problems by Using Numerical and Algebraic Expressions and Equations:***
  Solve real-world problems involving addition and subtraction of decimals, using models when needed.
  Solve real-world problems involving multiplication of decimals and whole numbers, using models when needed.

Differentiated Tasks

Level 3 Students will...
- Calculate the amount of money needed for a purchase and ascertain the coins and bills required to complete that purchase.
- In the context of a real-world scenario, calculate addition and subtraction problems.
- In the context of a real-world scenario, model multiplication and division with objects and numbers that show equal groups.
- Calculate percentages in real-world scenarios.
- Solve whole number, time and money problems involving unit rate.
- In the context of a real-world scenario, calculate addition and subtraction problems involving decimals.
- In the context of a real-world scenario, model multiplication and division with objects and numbers that show equal groups involving decimals.

Level 2 Students will...
- Match coins and bills to a given price.
- In the context of a real-world scenario, model addition and subtraction of two sets of objects.
- Count equal numbers of objects in selected groups or an array.
- Locate a percentage amount from a chart.
- Identify whole number, time or money amounts in the context of a unit rate scenario.
- In the context of a real-world scenario, model addition and subtraction of two sets of objects involving decimals.
- Count equal numbers involving decimals of objects in selected groups or an array.

Level 1 Students will...
- Exchange money for a purchase.
- Count a set of objects in an addition or subtraction problem through an active participation response (e.g. voice output device, eye gaze choice board).
- Count a set of objects in a group through an active participation response (e.g., voice output device, eye gaze choice board).
- Identify a number that represents a percentage.
- Select a whole number, time or money amount in the context of a unit rate scenario.
- Count a set of objects in an addition or a subtraction problem involving decimals through an active participation response.
- Count a set of objects in a group involving decimals through an active participation response.

Topic Connection

Throughout this unit, students learn about scientific inquiry and the steps of the scientific method. In this lesson, students are buying items needed as they prepare to volunteer for a science night at school.

Topic Words

scientist
solve
test

Math Words

add	count	dollar bill	penny
amount	decimal point	dollar sign	percent
calculator	dime	money	quarter
change	discount	multiply	subtract
check	divide	nickel	tip

* Power Words

Benchmark Assessments
- Math Problem Solving, Calculating and Making Change
- Basic Math: Coins/Bills and Value

Unit Checkpoint Assessments
- Level 2-3 Mathematics, Questions 5 - 8

Lesson at a Glance

	Activity 1.1-1.5	Activity 2.1-2.3	Activity 3.1-3.2	Activity 4.1-4.3
Instructional Activities	Counting Money	Adding Amounts	Making Change	Problem Solving
See how these activities fit into the **Suggested Unit Pacing** .				
ULS Materials and Resources	**Money 1: Counting Like Coins** **Money 2: Counting Mixed Coins** **Money 3: Amounts to $5.00** **Money 4: Amounts to $10.00** **Money 5: Amounts to $10.00 / "One-Up Method"**	**Money 6 & 7: Adding Amounts - 2 Items** **Money 8 & 9: Adding Amounts - 3 Items** **Money 10 & 11: Adding Amounts - Under/Over $100.00** **Standard Connection A**	**Money 12 & 14: Making Change - No Borrowing** **Money 13 & 15: Making Change - Borrowing** **Standard Connection A**	**Money 16 & 17: Problem Solving-21** **Money 18 & 19: Ratio with Multiplication and Division** **Money 20 & 21: Percentages with Tips and Discounts** **Manipulatives** **Standard Connection B**
	Instructional Tools: Math Pack / Money **Instructional Tools: Number Journal** **Instructional Tools: Math Pack/ Numbers** **Instructional Guides: Mathematics** **L³ Skills: Math Skills**		**n2y Math Manipulatives Kit** Circle Counters Foam Tiles	
Additional Materials	**Real or play coins and bills**			

Instructional Target

Math Standards for Life Skills Measurement
- ***Life Skills for Measurement:*** Apply knowledge of money skills to real-world, problem-solving situations and scenarios.

Instructional Routine

? or

Introduce	• Introduce this activity by asking a focus question about money. For example ask, "How much is a penny worth—ten cents or one cent?" Discuss students' responses. • Display a variety of money. Review the worth of each bill and coin. • Tell students that they will be matching and counting amounts of money. Remind students that when they see a decimal point with numbers after it, it means to use coins. • Review the learning goal with students: **Levels 2-3: I will match and count money amounts.** **Level 1: I will use coins to practice making a purchase.**
Model	• Read and act out the Money Scenarios. • Model how to match amounts. For example, say, "The nail costs $.35. How many nickels do I need to make $.35?" • Model how to count amounts. For example, say, "The magnifying box costs $3.78. How many dollars do I need? How many cents do I need?" Count out the appropriate amount. • After counting and matching the coins, use the real object or similar object and simulate the buying process.
Provide Practice	***Provide students with appropriate real-world Money Scenarios and Manipulatives as needed.*** **Level 3:** Have the student read and act out the Money Scenario. Then have the student determine the amount of the object and gather the bills and coins needed to make the purchase. **Level 2:** Read and act out a Money Scenario. Have the student match coins and bills to price. **Level 1:** Read and act out a Money Scenario. Have the student participate in the counting of bills and coins to match the money amount in the Money Scenario. Then have the student "purchase" the object or a similar object in a buying scenario.
Review	• Review the learning goal. Review the process of matching, counting and making purchases with money. • Review the selected Money Scenarios with students.

Check Understanding ?

- **Level 3:** Can the student determine the amount of the object and match the coins needed to make the purchase?
- **Level 2:** Can the student use objects/manipulatives to represent and solve a Money Scenario?
- **Level 1:** Can the student participate in a purchasing scenario with support?

Instructional Targets

Math Standards for Life Skills Measurement
- ***Life Skills for Measurement:*** Apply knowledge of money skills to real-world, problem-solving situations and scenarios.

Math Standards for Algebra - Seeing Structure in Expressions
- ***Building Blocks to Algebra:*** Understand and use +, - and = to solve addition and subtraction problems.

Math Standards for Number and Quantity: The Complex Number System
- ***Solve Real-Life and Mathematical Problems by Using Numerical and Algebraic Expressions and Equations:*** Solve real-world problems involving addition and subtraction of decimals, using models when needed.

Instructional Routine

Introduce	• Introduce this activity by asking a focus question about money. For example, ask, "What should we do if there are two amounts of money and we want to know how much you have altogether—subtract or add?" Discuss students' responses. • Review and discuss the symbols used in a money addition problem, including dollar sign, plus sign, equal sign and decimal point. • Tell students that they will be adding amounts of money. Remind students that when they see a plus sign, it means to add or put a group of items together. • Review the learning goal with students: **Levels 2-3: I will add and count money.** **Level 1: I will choose money to pay for an item.**
Model	Read and act out the Money Scenarios. **Level 3:** Model the steps of solving a money addition problem. Model using math supports as needed. Then solve the Money Scenario. **Level 2:** Model the steps of solving the problem using math supports. Show students how to group the coins and bills to represent the numbers in the problem. Model using other math supports as needed. Then solve the problem by counting the total amount of coins and bills. **Level 1:** Select an amount of money in a Money Scenario. For example, read the first scenario and stop at the first money amount. Point out that the gemstone costs $3.00. Then say, "How much does the gemstone cost? The gemstone costs $3.00." Model selecting the amount of the second object and the total cost using the same process. Then model making the "purchase" in a buying scenario. Use the Standards Connection to extend the activity by comparing amounts.
Provide Practice	***Provide students with appropriate real-world Money Scenarios and Manipulatives as needed.*** **Level 3:** Have the student read, act out, write and solve a Money Scenario. **Level 2:** Read and act out a Money Scenario. Have the student illustrate/represent the scenario using desired coins and bills. Have the student solve the Money Scenario. **Level 1:** Read and act out a Money sequence. Have the student participate in the counting of bills and coins to match the money amount in the Money Scenario. Have the student use their active participation mode to select the money amount counted, from a narrowed field or errorless choice(s). Use Standards Connection A to extend the activity by comparing amounts.
Review	• Review the learning goal. Encourage students to explain the process needed to add money. • Review selected Money Scenarios with students.

Check Understanding

- **Level 3:** Can the student read, write and solve a Money Scenario (using individual modifications)?
- **Level 2:** Can the student use objects/manipulatives to represent and solve a Money Scenario?
- **Level 1:** Can the student participate in a selecting a money amount from a narrowed field or errorless choice(s)? Can the student make a purchase in a buying scenario?

Instructional Targets

Math Standards for Life Skills Measurement
- ***Life Skills for Measurement:*** Apply knowledge of money skills to real-world, problem-solving situations and scenarios.

Math Standards for Algebra - Seeing Structure in Expressions
- ***Building Blocks to Algebra:*** Understand and use +, - and = to solve addition and subtraction problems.

Math Standards for Number and Quantity: The Complex Number System
- ***Solve Real-Life and Mathematical Problems by Using Numerical and Algebraic Expressions and Equations:***

Solve real-world problems involving addition and subtraction of decimals, using models when needed.

Instructional Routine

Introduce	• Introduce this activity by asking a focus question about subtracting money. For example, ask, "What should we do if we want to know how much money we will have left after buying something—subtract or add?" Discuss students' responses. • Review and discuss the symbols used in a money subtraction problem, including the dollar sign, minus sign, equal sign and decimal point. • Tell students that they will be making change by subtracting money. Remind students that when they see a minus sign it means to subtract or take away from. • Review the learning goal with students: **Levels 2-3: I will subtract money to make change.** **Level 1: I will choose money to pay for an item.**
Model	Read and act out the Money Scenarios. **Level 3:** Model the steps of solving a money subtraction problem. Model using math supports as needed. Then solve the Money Scenario. **Level 2:** Model the steps of solving the problem using math supports. Show students how to group the coins and bills to represent the numbers in the problem. Model using other math supports as needed. Then solve the problem by counting and subtracting the total amount of coins and bills. **Level 1:** Select an amount of money in a Money Scenario. For example, read the first scenario and stop at the first money amount. Point out that Keisha has $5.00. Count out $5.00. Then say, "How much does Keisha have? Keisha has $5.00." Model selecting the amount of the next object and the total money left using the same process. Then model making the "purchase" in a buying scenario. Use the Standards Connection to extend the activity by comparing amounts.
Provide Practice	***Provide students with appropriate real-world Money Scenarios and Manipulatives as needed.*** **Level 3:** Have the student read, act out, write and solve the Money Scenario. **Level 2:** Read and act out a Money Scenario. Have the student illustrate/represent the scenario using desired coins and bills. Have the student solve the Money Scenario. **Level 1:** Read and act out a Money Scenario. Have the student participate in the counting of bills and coins to match the money amount in the Money Scenario. Have the student use their active participation mode to select the money amount counted from a narrowed field or errorless choice(s). Use Standards Connection A to extend the activity by comparing amounts.
Review	• Review the learning goal. Encourage students to explain the process needed to subtract money in order to make change. • Review selected Money Scenarios with students.

Check Understanding

Level 3: Can the student read, write and solve a Money Scenario (using individual modifications)?

Level 2: Can the student use objects/manipulatives to represent and solve a Money Scenario?

Level 1: Can the student participate in selecting a money amount from a narrowed field or errorless choice(s)? Can the student make a purchase in a buying scenario?

Instructional Targets

Math Standards for Life Skills Measurement
- ***Life Skills for Measurement:*** Apply knowledge of money skills to real-world, problem-solving situations and scenarios.

Math Standards for Algebra - Seeing Structure in Expressions
- ***Building Blocks to Algebra:*** Understand and use +, - and = to solve addition and subtraction problems.

Math Standards for Life Skills for Ratio and Proportional Relationships
- ***Life Skills for Ratio and Proportional Relationships:*** Apply understanding of percent into real-world scenarios (e.g., 10% tip, 30% sale). Solve real-world problems involving unit rate (e.g., If it takes one hour to make one pillow, how long will it take to make four pillows?).

Math Standards for Number and Quantity: The Complex Number System
- ***Solve Real-Life and Mathematical Problems by Using Numerical and Algebraic Expressions and Equations:***

Solve real-world problems involving addition and subtraction of decimals, using models when needed.
Solve real-world problems involving multiplication of decimals and whole numbers, using models when needed.

Instructional Routine

Introduce	• Introduce this activity by asking a focus question about multi-step money problems. For example, say, "Sometimes we have to add or subtract several things in one math problem. What should we do to make sure we do the math problem correctly—read/have the problem read to us carefully and work it out step-by-step, or just add all the numbers together?" Discuss students' responses. Remind students that it is important to read math problems carefully. • Tell students that they will be doing multi-step problems including multiplication and division of money. • Review the learning goal with students: **Levels 2-3: I will add, subtract, multiply and divide money amounts.** **Level 1: I will choose money to pay for an item.**
Model	Read and act out a Money Scenario. **Level 3:** Model the steps of solving a money problem. Model using math supports as needed. Then solve the Money Scenario. **Level 2:** Model the steps of solving the problem using math supports. Show students how to group the coins and bills to represent the numbers in the problem. Model using other math supports as needed. Then solve the problem by counting the total amount of coins and bills. **Level 1:** Select an amount of money in a Money Scenario. For example, read the first scenario and stop at the first money amount. Point out that the polishing cloth costs $7.20. Count out $7.20. Then say, "How much does the polishing cloth cost? It costs $7.20." Select the matching amount. Continue modeling the rest of the scenario. Then model making the "purchase" in a buying scenario. When needed, model how to write a check.
Provide Practice	***Provide students with appropriate real-world Money Scenarios and Manipulatives as needed.*** **Level 3:** Have the student read, act out, write and solve a Money Scenario. **Level 2:** Read and act out a Money Scenario. Have the student illustrate/represent the scenario using desired coins and bills. Have the student solve the Money Scenario. **Level 1:** Read and act out a Money Scenario. Have the student participate in the counting of bills and coins to match the money amount in the Money Scenario. Have the student use their active participation mode to select the money amount counted from a narrowed field or errorless choice(s). Then have the student "purchase" the items in a buying scenario. Use Standards Connection B to extend the activity by comparing amounts, price discounts and tip calculation.
Review	• Review selected Money Scenarios with students.

Check Understanding

Level 3: Can the student read, write and solve a Money Scenario (using individual modifications)?
Level 2: Can the student use objects/manipulatives to represent and solve a Money Scenario?
Level 1: Can the student participate in a selecting a money amount from a narrowed field or errorless choice(s)? Can the student make a purchase in a buying scenario?

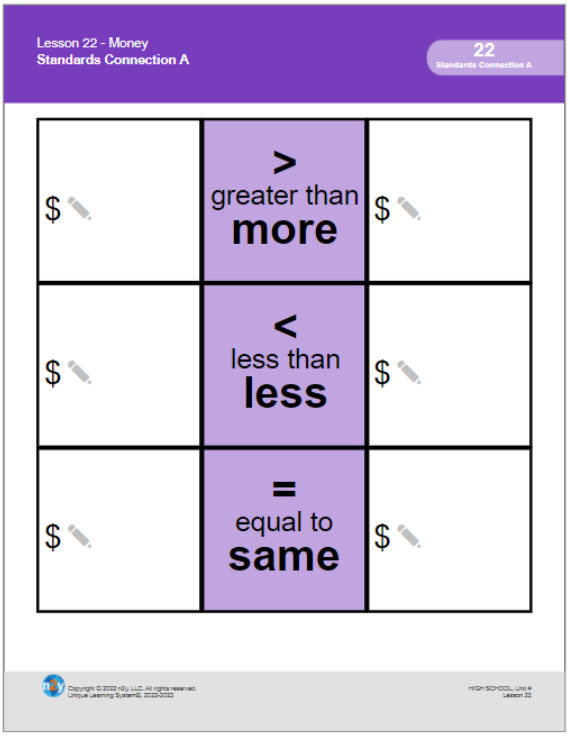
Instructional Targets

Math Standards for Algebra - Reasoning with Equations and Inequalities
- ***Building Blocks to Algebra:*** Recognize and compare numbers showing the symbols >, < or =.

Differentiated Tasks

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• Compare two numbers and use symbols to indicate >,< or =.	• Compare two groups of objects and determine which group is greater or lesser or equal in amount.	• Compare two groups of objects and identify the group that is bigger/more, smaller/less or equal to from a narrowed field or errorless choice(s).

Comparing prices is a skill that may prove difficult for some students. Have students use the lesson scenarios to demonstrate comparing prices of objects. Some students may use both mathematical terminology and symbols: greater than (>), less than (<) and equal to (=). Other students may use only simple terminology: more, less and same.



$	> greater than **more**	$
$	< less than **less**	$
$	= equal to **same**	$

Instructional Targets

Math Standards for Life Skills for Ratio and Proportional Relationships

- ***Life Skills for Ratio and Proportional Relationships:*** Apply understanding of percent into real-world scenarios (e.g., 10% tip, 30% sale).

Differentiated Tasks

Level 3 Students will...

- Calculate percentages in real-world scenarios.

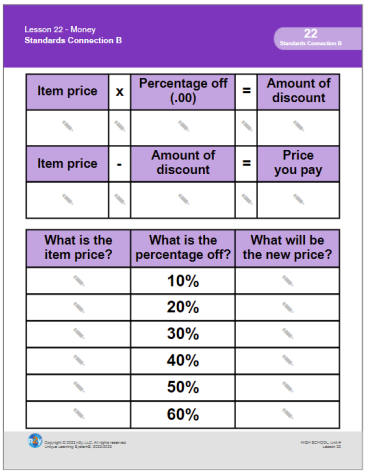
Level 2 Students will...

- Locate a percentage amount from a chart.

Level 1 Students will...

- Identify a number that represents a percentage.

Buying an item on sale is a good idea. Use this form to create sale prices and calculate the amount to pay after a certain percentage off is applied.



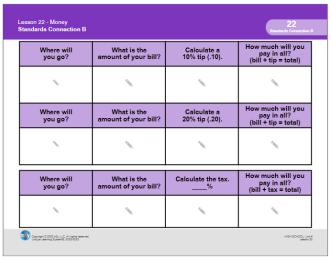
Lesson 22 - Money
Standards Connection B

22
Standards Connection B

Item price	x	Percentage off (.00)	=	Amount of discount

Item price	-	Amount of discount	=	Price you pay

What is the item price?	What is the percentage off?	What will be the new price?
	10%	
	20%	
	30%	
	40%	
	50%	
	60%	



Lesson 22 - Money
Standards Connection B

22
Standards Connection B

Where will you go?	What is the amount of your bill?	Calculate a 10% tip (.10).	How much will you pay in all? (bill + tip = total)

Where will you go?	What is the amount of your bill?	Calculate a 20% tip (.20).	How much will you pay in all? (bill + tip = total)

Where will you go?	What is the amount of your bill?	Calculate the tax. ____%	How much will you pay in all? (bill + tax = total)

In our culture, it is customary to tip restaurant servers, hairdressers and taxi drivers. Use this chart to develop scenarios for tipping. Calculate a 10% or 20% tip.

Sales tax is another amount that must be calculated when planning a purchase. Most states have a sales tax on certain items. Learn the sales tax for your state or city. Round the figure to the nearest whole number; for example, 5.25% rounds to 5% or .05.

https://en.wikipedia.org/wiki/Sales_taxes_in_the_United_States

Item price	x	Percentage off (.00)	=	Amount of discount
Item price	**-**	**Amount of discount**	**=**	**Price you pay**

What is the item price?	What is the percentage off?	What will be the new price?
	10%	
	20%	
	30%	
	40%	
	50%	
	60%	

Where will you go?	What is the amount of your bill?	Calculate a 10% tip (.10).	How much will you pay in all? (bill + tip = total)

Where will you go?	What is the amount of your bill?	Calculate a 20% tip (.20).	How much will you pay in all? (bill + tip = total)

Where will you go?	What is the amount of your bill?	Calculate the tax. ____%	How much will you pay in all? (bill + tax = total)

Instructional Target

Math Standards for Measurement and Data

- ***Life Skills for Measurement:*** Tell time on digital and analog clocks within the context of real-world situations or scenarios. Use times of day (e.g., a.m., p.m., morning, afternoon, evening and night) to represent time in real-world situations or scenarios. Apply knowledge of time skills to calculate forward and backward elapsed time in real-world situations or scenarios. Apply knowledge of time, day and date skills to real-world problem-solving situations and scenarios.

Differentiated Tasks

Level 3 Students will...

- Show or tell time on digital and analog clocks within the context of real-world situations or scenarios.
- Identify time of day in real-world situations or scenarios.
- Calculate forward and backward elapsed time in real-world situations or scenarios.
- Record times and activities to create and use a schedule on a monthly and/or daily calendar in the context of real-world situations or scenarios.

Level 2 Students will...

- Show or tell time on digital and analog clocks within the context of real-world situations or scenarios, with support.
- Identify time of day in real-world situations or scenarios, with support.
- Identify elapsed time in real-world situations or scenarios, with support.
- Select activities to create and use a schedule on a monthly and/or daily calendar in the context of real-world situations or scenarios, with support.

Level 1 Students will...

- Select a time within the context of a real-world situation or scenario from a narrowed field or errorless choice(s).
- Select the time of day an activity takes place from a narrowed field or errorless choice(s).
- Select a time to solve a real-world situation or scenario involving elapsed time from a narrowed field or errorless choice(s).
- Select an activity to create and use a monthly and/or daily schedule from a narrowed field or errorless choice(s).

Topic Connection

Throughout this unit, students learn about scientific inquiry and the scientific method. In this activity, students will work through real-world scenarios of students going to a science fair to tell time, calculate elapsed time and schedule activities.

Topic Words

experiment	scientific method
science	

Math Words

afternoon	date	hour	p.m.
a.m.	day	minute	schedule
calendar	evening	month	time
clock	hour	morning	

* Power Words

Benchmark Assessments

- Math Problem Solving: Calculating Time
- Basic Math: Telling Time

Lesson at a Glance

	Activity 1.1-1.6	Activity 2.1-2.2	Activity 3.1-3.2
Instructional Activities	Telling Time	Elapsed Time	Schedules and Time
See how these activities fit into the **Suggested Unit Pacing** .			
ULS Materials and Resources	**Interactive Teaching Clock** **Clues Guide 1** **Telling Time to the Hour** **Telling Time to the Half-Hour** **Telling Time to 15 minutes** **Telling Time to 5 minutes** **Telling Time - Mixed Times** **Clues Guide 2** **Time of Day** **Fill-In Cards**	**Interactive Teaching Clock** **Clues Guide 3** **Forward Elapsed Time** **Backward Elapsed Time**	**Using a Calendar** **Blank Calendar** **Using a Daily Schedule** **Blank Daily Schedule** **Core Task 1.1** **Core Task 1.2**
	Instructional Tools: Math Pack/ Time **SymbolStix PRIME** **L³ Skills: Math Skills**		**n2y Math Manipulatives Kit** Demo Clock
Additional Materials	Teaching Clocks		

Instructional Target

Math Standards for Measurement and Data

- ***Life Skills for Measurement:*** Tell time on digital and analog clocks within the context of real-world situations or scenarios. Use times of day (e.g., a.m., p.m., morning, afternoon, evening and night) to represent time in real-world situations or scenarios.

Instructional Routine

? or

Introduce

- Introduce this activity by asking a focus question about time. For example, ask, "The science fair starts at 8:30 a.m. What should I use to tell me what time it is—a menu or a clock?" Discuss students' responses.
- Discuss with students different things they can use to know what time it is. Talk about how clocks and phones tell us the exact time. Talk with students about how time is sometimes talked about in more general terms, such as the time of day (morning, afternoon, evening and night).
- Explain that it is important to know how to tell time for school, work and other activities. For example, say, "It is important to know what time it is when attending an event. Today, it is your job to tell time on clocks."
- Review the learning goal with students: **I will tell time and identify the time of day of an activity.**

Model

- Display Clues Guide 1. Introduce or review the difference between digital and analog clocks. Point out the parts of a clock, such as the hours and minutes on a digital clock, as well as the hour and minute hand on an analog clock. Point out the color coding on each clock hand. Demonstrate how to find the hour and minutes.
- Use a clock, such as the provided Interactive Teaching Clock, to show or have students show the correct time. Model how to read a time by first saying the hour and then the minutes.
- Display the Telling Time: Hour Scenarios. Two levels are provided. Use the level that best meets your students' needs. Model how to read the scenario and identify the time. Then model how to write or select the correct time. Note: For Level 3 students, use the marker tool to write the correct time on the analog clock.
- Display Clues Guide 2. Tell students that time can be discussed in more general terms. Point out each time on the Time of Day Number Line. For example, say, "This section is the morning. That means that morning goes from 12:00 a.m. to 11:59 a.m."
- Display the Time of Day Scenarios. Two levels are provided. Use the level that best meets your students' needs. Read a scenario and model using the Time of Day Number Line to find what time of day it is.

Provide Practice

Provide students with Clues Guide 1 & 2, Telling Time Scenarios and any math manipulatives and supports needed.

Level 3: Have students show or tell time on digital and analog clocks within the context of real-world situations or scenarios. Have students identify the time of day in real-world situations or scenarios.

Level 2: Have students show or tell time on digital and analog clocks within the context of real-world situations or scenarios with support. Have students identify the time of day in real-world situations or scenarios with support.

Level 1: Have students select a time within the context of a real-world situation or scenario from a narrowed field or errorless choice(s). Have students select the time of day an activity takes place from a narrowed field or errorless choice(s).

Review

- Revisit the learning goal by reading and discussing the completed scenarios. Ask questions such as, "What time does Raj arrive at the science fair? What time of day is that?"

Extension

- To extend this lesson, use the provided Clock Manipulative or Interactive Teaching Clock to show or have students show additional times. Consider using times in students' personal schedules or daily activities. As you practice, talk with students about why it is important to be able to tell time.

Check Understanding ?

Level 3: Can the student fill out a calendar with important dates and times for the month?
Level 2: Can the student use visual supports to fill out a calendar with important dates and times?
Level 1: Can the student select dates for a personal activity to create a month calendar from a narrowed field or errorless choice(s)?

Lesson 23 - Schedules and Times
Activity 2.1-2.2 - Elapsed Time

23
Activity 2

Instructional Target

Math Standards for Measurement and Data

- ***Life Skills for Measurement:*** Apply knowledge of time skills to calculate forward and backward elapsed time in real-world situations or scenarios.

Instructional Routine

? or

Introduce	• Introduce this activity by asking a focus question about time. For example, ask, "How long does it take to wash your hands—2 minutes or 12 hours?" Discuss students' responses. • Use an interactive clock, such as the Interactive Teaching Clock, to show passage of time. For example, use the Marker Tool to draw an hour hand on the number 5 and a minute hand on the number 6. Have students identify the time. Then model drawing another minute hand on the number 10. Say, "Time has passed. What time does the clock show now?" Discuss students' responses. • Explain that it is important to be able to tell time for school, appointments and events. It is also important to be able to calculate when things might start or end. This helps us plan our days and prepare a schedule. Tell students that they will practice finding the start and end times of activities and events. For example, say, "It is important to know how long you need to prepare so you can arrive for events on time. Today, it is your job to identify start and end times of activities." • Review the learning goal with students: **I will tell the start and end times of activities.**
Model	• Display Clues Guide 3. Discuss how elapsed time is measured in hours and minutes. Point out the different colors, shapes and sizes of the arrows. Explain that the green and red points indicate start and end times. • Display the Practice Page of Clues Guide 3. Model how to use the arrows on the Time Number Line to show elapsed time. For example, place a green start time point at 1:00, a small blue 15 minute arrow on the number line and a red end point at 1:15. Say, "If I leave for a ceremony at 1:00 and it takes 15 minutes to get there, I will arrive at 1:15." • Display a Forward Elapsed Time or Backward Elapsed Time scenario and read it aloud. Use the leveled format that best meets your students' needs. • Model finding the elapsed time in the scenario by using the Time Number Line. For example, say, "Raj begins looking at science fair projects at 10:30 a.m. If he looks for 15 minutes, what time will he be done looking at projects? How can we use the Time Number Line to determine the correct time?" Place a green start time point at 10:30 a.m. Then place a small blue 15-minute arrow starting at 10:30 a.m. Cue students to see the time to which the arrow points. Say, "15 minutes after 10:30 a.m. is 10:45 a.m."
Provide Practice	***Provide students with Clues Guide 3, Elapsed Time Scenarios and any math manipulatives and supports needed.*** **Level 3:** Have the student read the scenario. Then have the student calculate forward and backward elapsed time in real-world situations or scenarios. **Level 2:** Read the scenario. Have the student identify elapsed time in real-world situations or scenarios with support. **Level 1:** Read the scenario. Have the student select a time to solve a real-world situation or scenario involving elapsed time from a narrowed field or errorless choice(s).
Review	• Revisit the learning goal by reading and discussing the completed scenarios. Use the Interactive Teaching Clock and Elapsed Time Practice Pages to further explore elapsed time.

Check Understanding ?

- **Level 3:** Can the student fill out a daily schedule with important activities and times for the date?
- **Level 2:** Can the student use visual supports to fill out a daily schedule?
- **Level 1:** Can the student select a time for a personal activity to create a schedule from a narrowed field or errorless choice(s)?

Instructional Target

Math Standards for Measurement and Data

- ***Life Skills for Measurement:*** Apply knowledge of time, day and date skills to real-world problem-solving situations and scenarios.

Instructional Routine

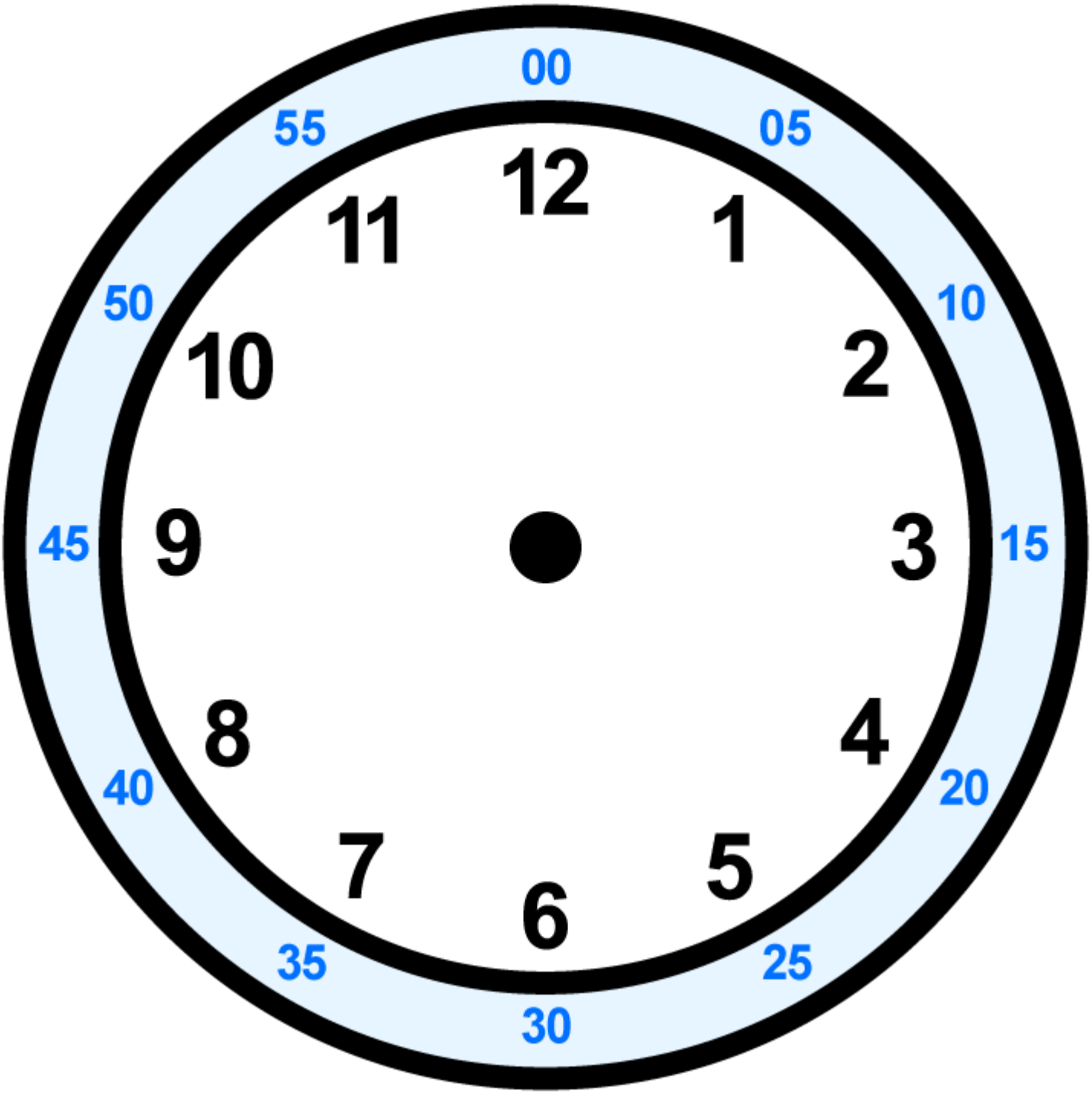
? or

Introduce	• Introduce this activity by asking a focus question about time. For example, ask, "What can you use to keep track of activities and holidays—a calendar, a schedule or both?" Discuss students' responses. • Discuss the importance of keeping a calendar and daily schedule. Talk with students about using these tools to keep track of things they need to do either during a day, a week or a month. • Explain that calendars and schedules are used in many different places including school and work. Tell students that they will practice using a calendar or schedule to keep track of important activities and events. For example, say, "People use calendars and schedules all the time. Today, it is your job to use a calendar or schedule to record times and activities." • Review the learning goal with students: **I will use a calendar or schedule.**
Model	Note: All Calendar activities are available in two levels. Model using the level that best meets your students' needs. • Display Using a Calendar. Point out the different parts of the calendar (e.g., month name, days of the week and numbers). Read the scenario and the dates that will be put on the calendar. Model how to put an activity on the correct day. For example, say, "United Nations Day is on October 24. I will find the box that has the number 24 and put United Nations Day." • Display the Blank Calendar. Point out different parts of the calendar. Model how to use the blank calendar to make a calendar of activities and events for the month. Note: Use the provided list of holidays and other special days for the month. • Display the Using a Daily Schedule Scenario. Use the level that best meets your students' needs. Point out the different information on the schedule, including the start time, end time and activity. Model how to use the schedule to answer the questions. For example, say, "What will Keisha do first? I will look for the first activity listed on Keisha's schedule. First, Keisha will set up her project." • Display the Blank Daily Schedule. Use the level that best meets your students' needs. Model how to use the blank schedule to keep track of activities for the day.
Provide Practice	***Provide students with Using a Calendar, Blank Calendar, Using a Daily Schedule, Blank Daily Schedule and any math manipulatives and supports needed.*** **Level 3:** Have the student record times and activities to create and use a schedule on a monthly and/or daily calendar in the context of real-world situations or scenarios. **Level 2:** Have the student record times and activities to create and use a schedule on a monthly and/or daily calendar in the context of real-world situations or scenarios, with support. **Level 1:** Have the student select an activity to create and use a monthly and/or daily schedule from a narrowed field or errorless choice(s).
Review	• Revisit the learning goal by reviewing the schedules and calendars that the students have created for themselves. Point out that every person's schedule is different because we do different things. • Refer back to students' schedules throughout the month.
Extension	• Use Core Task 1.1 and 1.2 to create printable calendars or schedules for the student to reference throughout the month, or on days with additional activities.

Check Understanding ?

- **Level 3:** Can the student record times and activities to create and use a schedule on a monthly and/or daily calendar in the context of real-world situations or scenarios?
- **Level 2:** Can the student record times and activities to create and use a schedule on a monthly and/or daily calendar in the context of real-world situations or scenarios with support?
- **Level 1:** Can the student select an activity to create and use a monthly and/or daily schedule from a narrowed field or errorless choice(s)?

available



Lesson 24a - Geometry
A Trip to the Science Museum

24a

Instructional Targets

Math Standards for Geometry: Congruence

- ***Experiment with transformations in the plane:*** Identify and use points, lines (parallel, perpendicular, intersecting) and line segments within the context of real-world situations.
- ***Understand congruence in terms of rigid motions:*** Apply the understanding of similarity and congruence in real-world situations.
- ***Prove Geometric Theorems:*** Classify angles according to measurement (right, acute, obtuse) and/or angle relationships (adjacent, vertical, supplementary and complementary).

Math Standards for Geometry: Modeling with Geometry

- ***Building Blocks to Modeling with Geometry:*** Identify two-dimensional shapes based on their properties and/or attributes.
- ***Apply geometric concepts in modeling situations:*** Analyze the shapes of real-world two and/or three-dimensional objects.

Differentiated Tasks

Level 3 Students will...

- Independently describe and/or construct points, lines, parallel lines, perpendicular lines, intersecting lines and line segments in real-world situations.
- Independently identify and describe shapes that are similar and congruent in the context of real-world scenarios.
- Independently use angle measurements to identify angles and/or angle relationships.
- Independently describe the shape of two-dimensional objects.
- Independently describe and compare real-world objects to two and three-dimensional shapes.

Level 2 Students will...

- Identify and/or make points, lines, parallel lines, perpendicular lines, intersecting lines and line segments in a real-world situation, with support.
- Identify shapes that are similar and congruent in the context of real-world scenarios, with support.
- Identify angles and/or angle relationships, with support.
- Identify the shape of a two-dimensional object, with support.
- Identify and compare real-world objects to two and three-dimensional shapes, with support.

Level 1 Students will...

- Select a point, line segment, line, parallel lines, perpendicular lines or intersecting lines from a narrowed field or errorless choice(s).
- Given a shape, select a congruent shape from a narrowed field or errorless choice(s).
- Select a named angle or pair of angles from a narrowed field or errorless choice(s).
- Select the shape of a two-dimensional object from a narrowed field or errorless choice(s).
- Select the shape of a real-world object from a narrowed field or errorless choice(s).

Topic Connection

Throughout this unit, students learn about scientific inquiry and the scientific method. In this lesson, students will be working with shapes they might see during a visit to the science museum.

Topic Words

science

Math Words

acute	face	measure	plane	side
angle	intersect	obtuse	point	similar
congruent	line	parallel	ray	unit
edge	line segment	perpendicular	right	vertex

* Power Words

Benchmark Assessments

- Basic Math: Shapes

Lesson at a Glance

	Activity 1	Activity 2.1-2.4	Activity 3.1-3.2
Instructional Activities	Points and Lines	Angles	Analyze Shapes

See how these activities fit into the **Suggested Unit Pacing**.

ULS Materials and Resources

Activity 1	Activity 2.1-2.4	Activity 3.1-3.2
Geometry Charts 1, 2	**Geometry Charts 3, 4, 5**	**Geometry Charts 6, 7, 8, 9, 10**
Points, Lines and Line Segments Practice	**Identify Angles**	**Shapes of Real-World Objects**
Points, Lines and Line Segments	**Angle Relationships 1, 2, 3**	**Similar and Congruent Shapes Practice**
Fill-In Cards	**Fill-In Cards**	**Similar and Congruent Shapes**
		Fill-In Cards

Instructional Tools: Math Pack / Shapes

Instructional Tools: Math Pack / Nets

L³ Skills: Math Skills

n2y Math Manipulatives Kit

Attribute Blocks
Rulers
Protractors
Circle Protractors
AngLegs®
Wikki Stix®

Additional Materials

protractor
ruler
measuring tape

Instructional Targets

Math Standards for Geometry: Congruence

- ***Experiment with transformations in the plane:*** Identify and use points, lines (parallel, perpendicular, intersecting) and line segments within the context of real-world situations.

Instructional Routine

? or

Introduce	• Introduce this activity by asking a focus question about points, lines and line segments. For example, point to the side of the board and ask, "Is the side of the board straight or curved?" Discuss students' responses. Tell students that the side of the board is straight and has a starting point and ending point. Explain to students that the side of the board is an example of a line segment. • Display Geometry Charts 1 and 2. Review the information on the chart. For each geometric term, have students use their bodies to show the point, line or line segment. For example, have students put their arms straight out to the sides with their hands made into fists to show a line segment with its two endpoints. Additionally, have students locate real-world examples of points, lines or line segments in the classroom, if possible. • Tell students that they will be constructing and identifying points, lines and line segments. For example, say, Today, you will be making and identifying points, lines and line segments." • Review the student learning goal: **I will make and identify points, lines and line segments.**
Model	• Display the Points, Lines and Line Segments Practice pages. Explain to students that they will practice drawing points, lines and line segments on real-world objects. Model how to put the points on the corners of the exhibits sign. • Model how to put the line segments and lines on the sides of the exhibits sign. Continue modeling how to construct perpendicular and parallel lines on the exhibits sign using the blue point and the given line. For example, say, "Parallel lines never cross. I will need to select a line that can go through the blue point, but not touch the other line." • Display one of the first three Points, Lines and Line Segments pages. Explain to students that they will be using a point, line and line segment to show locations on a map. Read one of the scenarios. Model how to put the point, line or line segment in the correct location on the map. For example, display Points, Lines and Line Segments page 1 and say, "Keisha stops at the sub shop. I need to put a point on the sub shop. A point looks like a small circle. I will put the small circle on the sub shop on the map." • Display page 4 in Points, Lines and Line Segments. Tell students that the GPS screens on the page show lines. The lines represent roads that Mrs. B could drive on. Model how to answer the questions under each GPS screen to determine if the lines are parallel, perpendicular or intersecting. For example, say, "The GPS screen shows two lines. The two lines touch at one point. They make right angles. They do not have the same slope. The lines are perpendicular lines. I will choose perpendicular lines."
Provide Practice	***Provide students with the appropriate Geometry pages, Geometry Charts 1 and 2, and math supports as needed.*** **Level 3:** Have the student complete the activities to independently describe and construct points, lines, parallel lines, perpendicular lines, and line segments in real-world situations. **Level 2:** Have the student complete the activities to identify and make points, lines, parallel lines, perpendicular lines, intersecting lines and line segments in a real-world situation, with support. **Level 1:** Have the student complete the activities to select a point, line segment, line, parallel lines, perpendicular lines or intersecting lines from a narrowed field or errorless choice(s). For example, show the students the GPS screen with parallel lines on it. Say, "These are parallel lines. Find the parallel lines." Have the student select the parallel lines.
Review	• Review the learning goal by discussing the difference between points, lines and line segments. Additionally, have students discuss the differences between parallel, perpendicular and intersecting lines. • Use Geometry Charts 1 and 2 to review the math words regularly. Each row can be cut out and used to make a foldable for each student and/or cut apart and used as a matching activity. Create a classroom math word wall, adding each word and its picture as it is introduced. Review the wall regularly and reference it during instruction.

Check Understanding ?

- **Level 3:** Can the student independently describe and construct points, lines (including parallel, perpendicular and intersecting lines) and line segments in real-world situations?
- **Level 2:** Can the student identify and make points, lines (including parallel, perpendicular and intersecting lines) and line segments in a real-world situation, with support?
- **Level 1:** Can the student select a point, line segment, line, parallel lines, perpendicular lines or intersecting lines from a narrowed field or errorless choice(s)?

Instructional Targets

Math Standards for Geometry: Congruence

- ***Prove Geometric Theorems:*** Classify angles according to measurement (right, acute, obtuse) and/or angle relationships (adjacent, vertical, supplementary and complementary).

Instructional Routine

? or

Introduce	• Introduce this activity by asking a focus question about angles. For example, holding a book horizontal to the floor, open the cover of the book slowly and ask, "What happens to the space between the book cover and the first page of the book as we open the book cover—it gets bigger or it gets smaller?" Discuss students' responses. Tell students that the book cover and the first page of the book form an angle. The angle is the space between the two. The angle gets bigger as the cover opens. • Display Geometry Chart 3. As you review the information on the chart, use the book to represent the different size angles. For example, hold the book cover at a 90 degree angle and say, "The cover and the first page are like rays of an angle. When they open at 90 degrees, this is called a right angle." Continue demonstrating each angle and encourage students to participate by using their books or their arms. • Tell students that angles can be described by their measurement, and also by comparing pairs of angles. Say, "Today, your job is to identify types of angles by their measurement and compare pairs of angles." • Review the student learning goal: **I will identify types of angles and compare pairs of angles.**
Model	• Display one of the Identify Angles pages. Point to the protractor on the page and explain how and why to use it. Refer to Geometry Chart 3 to review the definitions of an acute, right and obtuse angle. Model how to measure each angle, compare it to a right angle and complete the page. For example, "To find the measurement of the angle, one ray of the angle has to be on the zero degree line of the protractor. Then, I look to see where the other ray points. The other ray of this angle is pointing to 30 degrees, so the angle measurement is 30 degrees. This is less than 90 degrees and smaller than a right angle, so the angle is an acute angle." • Display Geometry Chart 4. Use the orange and blue angles on the chart to demonstrate what complementary and supplementary angles are. Move the blue and orange angles apart to show the individual angle measurements. Then, model putting the blue and orange angles next to each other to demonstrate how they equal 90 or 180 degrees. • Display Angle Relationships 1. Model how to figure out if each pair of angles is supplementary or complementary. Show students how to look at the pair of angles to see if they form a right or straight angle. Then, show students how to add the measurements of the two angles together to see if they equal 90 or 180 degrees. Continue modeling how to complete the page. Reference Geometry Chart 4 as needed during modeling. • Display Geometry Chart 5. As you review the chart, use two pencils to make intersecting lines. Point out adjacent and vertical angles made by the pencils. • Display Angle Relationships 2. Model how to figure out if the pairs of angles are adjacent or vertical. Point out the color coding of the angles. Remind students that adjacent angles will share a ray and vertex, while vertical angles are across from each other. Continue modeling how to complete the page, referencing Geometry Chart 5 as needed. • Display Angle Relationships 3. Model how to figure out the missing angle measurement by filling in and solving the equation on the page.
Provide Practice	***Provide students with the appropriate Geometry pages, Geometry Charts 3, 4, 5 and math supports, as needed.*** **Level 3:** Have the student complete the activities to independently use angle measurements to identify angles and/or angle relationships. **Level 2:** Have the student complete the activities to identify angles and/or angle relationships, with support. **Level 1:** Have the student complete the activities to select a named angle or pair of angles from a narrowed field or errorless choice(s). For example, show the student an acute angle. Say, "This is an acute angle. Find the acute angle." Show the student a Fill-In Card with an acute angle. Have the student select the acute angle.
Review	• Revisit the learning goal with students by having students describe the different types of angles and angle relationships. • Use Geometry Charts 3, 4 and 5 to review the math words and concepts regularly. Each row can be cut out and used to make a foldable for each student and/or cut apart and used as a matching activity. Create a classroom math word wall, adding each word and its picture as it is introduced. Review the wall regularly and reference it during instruction. • Have students identify different angles found in the classroom.

Check Understanding ?

Level 3: Can the student independently use angle measurements to identify angles and/or angle relationships?
Level 2: Can the student identify angles and/or angle relationships, with support?
Level 1: Can the student select a named angle or pair of angles from a narrowed field or errorless choice(s)?

Activity 3.1-3.2 - Analyze Shapes

Instructional Target

Math Standards for Geometry: Congruence

- ***Understand congruence in terms of rigid motions:*** Apply the understanding of similarity and congruence in real-world situations.

Math Standards for Geometry: Modeling with Geometry

- ***Building Blocks to Modeling with Geometry:*** Identify two-dimensional shapes based on their properties and/or attributes.
- ***Apply geometric concepts in modeling situations:*** Analyze the shapes of real-world two and/or three-dimensional objects.

Instructional Routine

? or

Introduce	• Introduce this activity by asking a focus question about shapes. For example, ask, "Which is flat—a poster or a tissue box?" Discuss students' responses. Model the difference between two- and three-dimensional shapes using classroom objects. Discuss how two-dimensional shapes have a length and width, while three-dimensional shapes have a length, width and height. • Display and review Geometry Charts 6, 7, 8 and 9. Review the flat shapes and their attributes. Review the solid shapes and their attributes and nets. Compare the shapes to real-world objects in the classroom, if possible. Point out the flat shapes that make up the faces of any real-world solid objects. • Explain that some shapes are similar and some are exactly the same or congruent. Tell students that they will be describing the shape of real-world objects and comparing shapes to see if they are similar or congruent. Say, "Today, your job is to describe the shapes of real-world objects and find out if shapes are similar or the same." • Review the student learning goal: **I will describe and compare shapes.**
Model	• Display a Shapes of Real-World Objects page. Model selecting the shape that matches the object on the page and placing it on top of the object. Model referring to the Geometry Charts to answer the questions about the shape's attributes and determine the flat or solid shape of the object. For solid shapes, also model selecting the net of the object and determining the shapes of the faces and how many faces there are. Consider using the printable nets in the Math Pack: Nets to help students identify the two-dimensional shapes that make up a three-dimensional real-world object. • Display Geometry Chart 10. Discuss how shapes can be similar and congruent. Explain that two flat shapes are congruent if they are the same shape and their angles and sides are equal. Shapes are similar if they have the same shape and equal angles, but the lengths of the sides are different. • Display the Similar and Congruent Shapes Practice pages. Begin by modeling how to find if shapes are similar. Drag Shape B over Shape A. Point out matching angles. Then, model completing the chart by having the students fill in the lengths of each color-coded side and determining how much each side of the smaller shape was multiplied by to equal the bigger shape. Model selecting whether the shapes are similar or not. Continue the same process for the congruent shapes practice page, but have students complete the chart by selecting whether the matching sides of Shape A and B are equal or not equal. • Display the other Similar and Congruent Shapes pages. Explain that students will use the same process from the practice pages to determine if a shape is similar or congruent to a real-world object. Review how to complete the page, if necessary.
Provide Practice	***Provide students with the Shapes of Real-World Objects and Similar and Congruent Shapes pages, Geometry Charts 6-10, and other math supports as needed.*** **Level 3:** Have the student complete the activities to independently describe two-dimensional shapes, compare real-world objects to two- and three-dimensional shapes and identify and describe shapes that are similar and congruent. **Level 2:** Have the student complete the activities to identify two-dimensional shapes, compare real-world objects to two- and three-dimensional shapes and identify shapes that are similar and congruent, with support. **Level 1:** Have the student select the shape of a two- or three-dimensional object and a congruent shape from a narrowed field or errorless choice(s).
Review	• Review the learning goal by reviewing the shapes and their attributes. Remind students that real-world objects can be flat or solid shapes. Shapes can be similar or congruent. Encourage students to find examples of flat and solid shapes in their environment and discuss whether or not they are similar or congruent. • Use Geometry Charts 6, 7, 8 and 9 to review the math words regularly. Each row can be cut out and used to make a foldable for each student and/or cut apart and used as a matching activity. Create a classroom math word wall, adding each word and its picture as it is introduced. Review the wall regularly and reference it during instruction.

Check Understanding ?

- **Level 3:** Can the student describe two-dimensional shapes, independently compare real-world objects to two- and three-dimensional shapes and identify and describe shapes that are similar and congruent?
- **Level 2:** Can the student identify two-dimensional shapes, compare real-world objects to two- and three-dimensional shapes and identify shapes that are similar and congruent, with support?
- **Level 1:** Can the student select the shape of a two- or three-dimensional object and a congruent shape from a narrowed field or errorless choice(s)?

Lesson 24b - Geometry
A Trip to the Science Museum

24b

Instructional Targets

Math Standards for Geometry: Congruence
- ***Experiment with transformations in the plane:*** Establish congruency by applying a turn (rotation), a flip (reflection), or a slide (translation) to match objects of similar size and shape.
- ***Understand congruence in terms of rigid motions:*** Determine if triangles are similar by comparing angles and sides (SSS, AA).
- ***Prove Geometric Theorems:*** Determine the type of triangle by comparing angles and sides (scalene, isosceles, equilateral).

Math Standards for Geometry: Circles
- ***Understand and apply theorems about circles:*** Identify parts of a circle (radius, diameter, tangent, chord, arc, sector, central angle) in real-world scenarios.
- ***Find arc lengths and areas of sectors of circles:*** Solve problems involving measurements of circles (circumference, area, arc length or area of a sector).

Math Standards for Geometry: Similarity, Right Triangles and Trigonometry
- ***Building Blocks to Geometry: Similarity, Right Triangles and Trigonmetry:*** Identify right triangles and parts of a right triangle (right angle, legs, hypotenuse).
- ***Understand similarity in terms of similarity transformations:*** Solve real-world problems involving dilations of shapes.

Math Standards for Geometry: Geometric Measurement and Dimension
- ***Explain volume formulas and use them to solve problems:*** Solve a real-world problem involving the perimeter of two-dimensional shapes. Solve a real-world problem involving the area of two-dimensional shapes. Determine the volume of three-dimensional objects.
- ***Visualize relationships between two-dimensional and three-dimensional objects:*** Compare the volumes of three-dimensional objects when one attribute is changed.

Differentiated Tasks

Level 3 Students will...
- Independently describe if a turn, flip, and/or slide has been applied to an object.
- Independently identify similar triangles by comparing the angles and sides.
- Independently compare the measurements of the angles and sides of a triangle to determine if it is a scalene, equilateral or isosceles triangle.
- Independently identify parts of a circle in a real-world situation.
- Independently find a measurement of a circle (circumference, area, arc length and/or area of a sector) to solve a problem.
- Independently find right triangles and/or identify a leg, hypotenuse or the right angle.
- Independently describe the dilation of a shape and identify the scale factor used to transform the shape in real-world situations.
- Independently find the perimeter of a shape to solve a real-world problem.
- Independently find the area of a shape to solve a real-world problem.
- Independently find the volume of three-dimensional objects.
- Independently compare the volume of three-dimensional objects.

Level 2 Students will...
- Identify if a turn, flip or slide has been applied to an object, with support.
- Identify similar triangles, with support.
- Compare the measurements of the angles and sides of a triangle to determine if it is a scalene, equilateral or isosceles triangle, with support.
- Identify parts of a circle in a real-world situation, with support.
- Find a measurement of a circle (circumference, area, arc length or area of a sector) to solve a problem with support.
- Find right triangles and/or identify a leg, hypotenuse or the right angle, with support.
- Identify the effect of a dilation on a shape in real-world situations, with support.
- Find the perimeter of a shape to solve a real-world problem, with support.
- Find the area of a shape to solve a real-world problem, with support.
- Find the volume of three-dimensional objects, with support.
- Compare the volume of three-dimensional objects, with support.

Level 1 Students will...
- Select a turn, flip or slide from a narrowed field or errorless choice(s).
- Indicate if two triangles are similar by making a selection from a narrowed field or errorless choice(s).
- Make a selection to indicate if a triangle is scalene, isosceles or equilateral from a narrowed field or errorless choice(s).
- Select a part of a circle from a narrowed field or errorless choice(s).
- Given a circle, select a measurement of a circle (circumference, area, arc length or area of a sector) using a visual model.
- Find right triangles and/or identify a leg, hypotenuse or the right angle using a model.
- Identify the effect of a dilation on the size of a shape by making a selection from a narrowed field or errorless choice(s).
- Participate in counting units on a model of a shape to find the perimeter using an active response (e.g., voice output device, eye gaze board).
- Participate in counting unit squares on a model of a shape to find the area using an active response (e.g., voice output device, eye gaze board).
- Count unit cubes on a model of a shape to find the volume using an active response (e.g., voice output device, eye gaze board).
- Given two three-dimensional objects and their volumes, select the object with the greater or lesser volume.

Topic Connection

Throughout this unit, students learn about scientific inquiry and the scientific method. In this lesson, students will be working with shapes they might see during a visit to the science museum.

Topic Words

science

Math Words

angle	circumference	height	measure	right	turn
arc	diameter	hypotenuse	perimeter	side	unit
area	equal	leg	point	slide	volume
circle	flip	length	radius	triangle	width

* Power Words

Benchmark Assessments • Basic Math: Shapes

Lesson at a Glance

	Activity 1.1-1.4	Activity 2.1-2.4	Activity 3.1-3.5	Activity 4.1-4.2
Instructional Activities	Circles	Triangles	Perimeter, Area and Volume	Transformations
ULS Materials and Resources	**Geometry Charts 11, 12** **Parts of a Circle Practice** **Parts of a Circle** **Circumference of a Circle** **Area of a Circle** **Arc Length and Area of a Sector** **Standards Connection A** **Fill-In Cards**	**Geometry Charts 13, 14, 15** **Find and Label Right Triangles** **Compare Angles and Sides of a Triangle** **Angle Angle Similarity** **Side Side Side Similarity** **Standards Connection B** **Fill-In Cards**	**Geometry Chart 16** **Perimeter** **Area: Formula** **Area: Triangles** **Find Volumes** **Compare Volume** **Standards Connection C** **Fill-In Cards** **Manipulatives**	**Geometry Chart 17** **Identify Transformations** **Describe Dilations** **Fill-In Cards** **Coordinate Grid** **Manipulatives**

See how these activities fit into the **Suggested Unit Pacing**.

Instructional Tools: Math Pack / Shapes

Instructional Tools: Math Pack / Nets

L³ Skills: Math Skills

n2y Math Manipulatives Kit

Attribute Blocks
Rulers
Protractors
Unifix® Cubes
Circle Protractors
AngLegs®
Wikki Stix®

Additional Materials

calculator
protractor
ruler
measuring tape

Instructional Target

Math Standards for Geometry: Circles

- ***Understand and apply theorems about circles:*** Identify parts of a circle (radius, diameter, tangent, chord, arc, sector, central angle) in real-world scenarios.
- ***Find arc lengths and areas of sectors of circles:*** Solve problems involving measurements of circles (circumference, area, arc length or area of a sector).

Instructional Routine

? or

Introduce

- Introduce this activity by asking a focus question about circles. For example, ask students to name something in the classroom that is shaped like a circle. Discuss students' responses.
- Explain to students that circles have different parts. Also, tell students that the distance around a circle and the area inside of a circle can be measured.
- Tell students that they will be identifying the parts and finding measurements of circles. For example, say, "Today your job is to identify parts and find measurements of circles."
- Review the student learning goal: **I will identify parts and find measurements of circles.**

Model

- Display Geometry Chart 11 and review the parts of a circle on the chart. Then, display the Parts of a Circle Practice page. Model putting the part and label onto the circle-shaped real-world object. For example, point and trace the circle object and say, "The diameter starts on one point of the circle, goes through the center and ends on another point on the circle. It goes all the way across a circle." Then, choose the diameter and say, "I will try this line segment since it looks long enough to go across the circle through the center." Place the diameter onto the circle object and say, "This is the diameter. It starts on one point of the circle, goes through the center point and ends on another point on the circle." Model choosing the label and placing it on the diameter.
- Display the Parts of a Circle pages. Model each page, showing how to put the circle parts on the real-world object and answering each question to select the correct circle part.
- Display Geometry Chart 12 and reinforce the difference between the circumference (the distance around the circle) and the area (the amount of space inside the circle).
- Display the Circumference of a Circle page. Model how to put the circle around the real-world object. Show students how to fill in the blanks on the page and calculate the circumference using either the diameter or the radius.
- Display the Area of a Circle page. Model how to put the circle inside of the outline of the real-world object. Show students how to fill in the blanks on the page and calculate the area.
- Display the Arc Length and Area of a Sector pages. Model how to use the diagram of a circle on each page to fill in the blanks and calculate the arc length or area of a sector.
- Use the Standards Connection A to continue to explore circumference and area of a circle using measuring tools and real-world objects in the classroom.

Note: When multiplying or dividing on a calculator to get circumference and area, please note that for the interactive version, the set correct value is rounded to the hundredths place using a calculator with digits to the thousandths place. If using a calculator with digits only to the hundredths place, a different answer may be reached.

Provide Practice

Provide students with the appropriate Geometry pages, Geometry Charts 11 and 12 and math supports as needed.

Level 3: Have the student complete the activities to independently identify the parts of a circle and find a measurement of a circle.
Level 2: Have the student complete the activities to identify the parts of a circle and find a measurement of a circle, with support.
Level 1: Have the student complete the activities to select a part of a circle from a narrowed field or errorless choice(s). Have the student select the measurement of a circle using a visual model. For example, show the student the star map and ask, "Does the yellow or blue circle show the area inside of the star map?" Have the student select the circle that shows the area inside of the star map.

Review

- Review the learning goal by reviewing the parts of a circle and how to find the circumference and area of a circle. Have students find circles in their environment and use string, tape or other materials to label the parts of the circle.
- Use Geometry Charts 11 and 12 to review the math words regularly. Each row can be cut out and used to make a foldable for each student and/or cut apart and used as a matching activity. Create a classroom math word wall, adding each word and its picture as it is introduced. Review the wall regularly and reference it during instruction.

Check Understanding ?

Level 3: Can the student independently identify the parts of a circle and find a measurement of a circle?
Level 2: Can the student identify the parts of a circle and find a measurement of a circle, with support?
Level 1: Can the student select a part of a circle from a narrowed field or errorless choice(s) and select the measurement of a circle using a visual model?

Instructional Target

Math Standards for Geometry: Congruence

- ***Understand congruence in terms of rigid motions:*** Determine if triangles are similar by comparing angles and sides (SSS, AA).
- ***Prove Geometric Theorems:*** Determine the type of triangle by comparing angles and sides (scalene, isosceles, equilateral).

Math Standards for Geometry: Similarity, Right Triangles and Trigonometry

- ***Building Blocks to Geometry: Similarity, Right Triangles and Trigonometry:*** Identify right triangles and parts of a right triangle (right angle, legs, hypotenuse).

Instructional Routine

? or

Introduce	• Introduce this activity by asking a focus question about triangles. For example, ask the students to identify a real-world object that is shaped like a triangle. Discuss students' responses. Review the attributes of a triangle, such as having three sides and three angles. • Display Geometry Chart 13 and 14. Review the symbols used to help name triangles. Discuss right triangles and other types of triangles. Compare the right triangle and other types to real-world objects in the classroom. Then, tell students they will identify types of triangles, triangle parts and compare triangles using parts of the triangle. For example, say, "Your job is to identify and compare triangles and triangle parts." • Review the student learning goal: **I will identify and compare triangles and triangle parts.**
Model	• Display the Find and Label Right Triangles page. Model how to put the square on the right angle of the right triangle, and match the leg and hypotenuse to the leg and hypotenuse on each right triangle. • Display one of the Compare Angles and Sides of a Triangle pages. Point out the color-coded angle measurements on the triangle as you model how to fill in the chart with the measurements of each angle in the triangle. Show the students how to add the angles together to make sure they equal 180 degrees. Then, model how to fill in the angle and side measurements to complete the What Type of Triangle Is It? chart. Discuss how to determine the type of triangle by looking at the number of equal angles and sides, referring to Geometry Chart 13 as needed. For example, say, "This triangle has 3 equal angles and 3 equal sides. An equilateral triangle has 3 equal angles and 3 equal sides. This triangle is an equilateral triangle." • Display and review Geometry Chart 15. Point out the color-coded equal angles in the triangles that show Angle Angle similarity. Point out the color-coded sides in the triangles that show Side-Side-Side similarity. • Display one of the Angle Angle Similarity pages. Model how to put triangle DEF on top of or next to triangle ABC to compare the angles. Show students how to fill out the chart and determine if the triangles are similar, referring to Geometry Chart 14 as needed. For example, say, "The purple angle on both triangles is 40 degrees. The orange angle on both triangles is 30 degrees. There are two pairs of equal angles. This means the triangles are similar. This is one way to know if two triangles are similar when you only know two angle measurements of the triangles." • Display one of the Side Side Side Similarity pages. Model how to put triangle DEF on top of or next to triangle ABC to compare the sides. Think aloud as you determine the bigger and smaller triangle and complete the chart. Model how to determine the number each side of the smaller triangle is multiplied by to equal the bigger triangle. Discuss how to know if the triangles are similar. Say, "All the sides of the smaller triangle are multiplied by the same number to equal the sides of the bigger triangle. The triangles are similar. This is one way to know if two triangles are similar when you only know the side lengths of the triangles." • Use the Standards Connection B to explore the parts of a right triangle and the Pythagorean Theorem.
Provide Practice	***Provide students with the appropriate Geometry pages, Geometry Charts 13, 14 and 15 and math supports as needed.*** **Level 3:** Have the student complete the activities to independently find right triangles and identify their parts and find or compare the measures of sides and angles of triangles to determine the types of triangles and similarity. **Level 2:** Have the student complete the activities to find right triangles and identify their parts and find or compare the measures of sides and angles of triangles to determine the types of triangles and similarity, with support. **Level 1:** Have the student use a visual model to find right triangles and identify their parts. Have the student make a selection to indicate triangle types and similarity and find or compare the measures of sides and angles of triangles, from a narrowed field or errorless choice(s).
Review	• Review the learning goal by having students review the difference between right, scalene, isosceles and equilateral triangles and how to determine if triangles are similar. • Consider having students make different types of triangles using straws and clay. Have students use the straws as the sides and the clay as the vertices of the angles in the triangle. Compare the triangles the students make to determine if they are similar.

Check Understanding ?

- **Level 3:** Can the student independently find right triangles and identify their parts and find or compare the measures of sides and angles of triangles to determine the types of triangles and similarity?
- **Level 2:** Can the student find right triangles and identify their parts and find or compare the measures of sides and angles of triangles to determine the types of triangles and similarity, with support?
- **Level 1:** Can the student use a visual model to find right triangles and identify their parts? Can the student make a selection to indicate triangle types and similarity and find or compare the measures of sides and angles of triangles, from a narrowed field or errorless choice(s)?

Instructional Target

Math Standards for Geometry: Geometric Measurement and Dimension

- ***Explain volume formulas and use them to solve problems:*** Solve a real-world problem involving the perimeter of two-dimensional shapes. Solve a real-world problem involving the area of two-dimensional shapes. Determine the volume of three-dimensional objects.
- ***Visualize relationships between two-dimensional and three-dimensional objects:*** Compare the volumes of three-dimensional objects when one attribute is changed.

Instructional Routine

? or

Introduce	• Introduce this activity by asking a focus question about perimeter, area or volume. For example, using a place like a garden that has a fence around it, ask, "What goes all around the outside of the garden to make a border—a fence or a rug?" Discuss students' responses. • Explain that the inside and the distance around two-dimensional or flat shapes can be measured. Additionally, explain that the space inside of three-dimensional or solid shapes can be measured too. Use Geometry Chart 16 to discuss the meaning of perimeter, area and volume. Tell students that today they will find the perimeter and area of two-dimensional objects and find and compare the volume of three-dimensional objects. For example, say, "Today, your job is find the perimeter and area of flat shapes. Then, you will find and compare the volume of solid shapes." • Review the student learning goal: **I will find the perimeter and area of flat shapes. I will find and compare the volume of solid shapes.**
Model	***While completing the activities, it may be helpful to have manipulatives for students to visualize concepts and practice with, such as stackable counting cubes or geoboards. Reference Geometry Chart 16 as needed.*** • Display the Perimeter page. Explain that the perimeter is the distance around a two-dimensional or flat shape. Model how to find the perimeter of the object on the page. For example, say, "Perimeter is the distance around the outside edge of a shape. I need to add the lengths of each side to find the perimeter. For this shape, 5 + 3 + 5 + 3 = 16. The perimeter of the shape is 16 units." • Display the Area: Formula page. Explain that area is the measurement of the space inside of a flat shape. Model how to use the formula on the page to find the area by multiplying the length times the width of the rectangle or square. For example, say, "To find the area, I need to multiply the length times the width. The length is 5 units. The width is 2 units. So, 5 x 2 =10. The area is 10 units squared. • Display the Area: Triangles page. Model how a square or rectangle can be cut in half diagonally to form two triangles by putting the two triangle shapes over the rectangle or square on the page. Explain that students can find the area of one of the triangles by finding the area of the square or rectangle and dividing that area by two. Model how to find the area of one triangle on the page using the equation: length x width divided by 2. • Display the Find Volumes page. Model how to find the volume of the object on the page by counting and by using the formula. Model counting the cubes row by row, layer by layer. Then, model using the formula to find the volume using the chart on the page. • Display the Compare Volumes page. Model how to find the volume of the two objects on the page. Then, think aloud as you model how to determine whether the gray box is bigger or smaller than the orange box. For example, say, "The gray box has a volume of 72 units cubed. The orange box has a smaller width. Its volume is 54 units cubed. The grey box is bigger than the orange box because 72 units cubed is more than 54 units cubed." • Use Standards Connection C to continue to explore finding the volume of cylinders, cones and pyramids.
Provide Practice	***Provide students with the appropriate Geometry pages, Geometry Chart 16 and math supports, as needed.*** **Level 3:** Have the student complete the activities to independently find the perimeter and area of two-dimensional shapes to solve a real-world problem and find and compare the volumes of three-dimensional shapes. **Level 2:** Have the student complete the activities to find the perimeter and area of two-dimensional shapes to solve a real-world problem and find and compare the volumes of three-dimensional shapes, with support. **Level 1:** Have the student participate in counting units or unit squares on a model of a shape using an active response to find the perimeter, area or volume. Have the student select the shape with the greater or lesser volume given two shapes and their volumes.
Review	• Review the learning goal by having students describe the difference between perimeter, area and volume. Have students model the concepts using classroom objects. • Use Geometry Chart 16 to review the math words regularly. Each row can be cut out and used to make a foldable for each student and/or cut apart and used as a matching activity. Create a classroom math word wall, adding each word and its picture as it is introduced. Review the wall regularly and reference it during instruction.

Check Understanding ?

- **Level 3:** Can the student independently find the perimeter and area of two-dimensional shapes to solve a real-world problem and find and compare the volumes of three-dimensional shapes?
- **Level 2:** Can the student find the perimeter and area of two-dimensional shapes to solve a real-world problem and find and compare the volumes of three-dimensional shapes, with support?
- **Level 1:** Can the student participate in counting units or unit squares on a model of a shape using an active response to find the perimeter, area or volume? Can the student select the shape with the greater or lesser volume given two shapes and their volumes?

Instructional Target

Math Standards for Geometry: Congruence

- ***Experiment with transformations in the plane:*** Establish congruency by applying a turn (rotation), a flip (reflection), or a slide (translation) to match objects of similar size and shape.

Math Standards for Geometry: Similarity, Right Triangles and Trigonometry

- ***Understand similarity in terms of similarity transformations:*** Solve real-world problems involving dilations of shapes.

Instructional Routine

? or

Introduce	• Introduce this activity by asking a focus question about transformations. For example, slide a book on top of a desk and ask, "What happened to the book—it slid or got bigger?" Discuss students' responses. • Display and read Geometry Chart 17. Review the types of transformations by using the book to model a slide, flip and turn. Point out that in these transformations, the book is the same shape and size. The position of the book changes, but the size and shape do not. Ask students to physically perform a slide, flip or turn. For example, have the students slide across the floor or turn while keeping one foot in place. • Explain that dilations are a type of transformation where the size of the object does change. Model this type of transformation by showing a page in the book and an enlarged copy of the page. Note how the text or picture on the page, or the shape of page, do not change but the size of the text, picture or shape does change. • Tell students they will identify how objects moved and describe how shapes changed in size. • Review the student learning goal: **I will identify how objects moved and describe how shapes changed in size.**
Model	***While modeling the slide, flip and turn scenarios, it may be helpful to have printed Coordinate Plane and manipulatives to model and for students to visualize concepts and practice with.*** • Display and read aloud an Identifying Transformations page. Reference Geometry Chart 17 as needed. Point out the colored vertices and grid coordinates as you think aloud to model figuring out which transformation was made. For example, say, "I see the shape flipped across the line. I see the shape turned around the point. I see the shape moved, it didn't flip or turn." • Display the Describe Dilations page. Point out that when Raj copied Keisha's shape, he changed its size. Model how to determine if the shape was made bigger or smaller. Then, model how to use the squares on the coordinate grid to count the purple side of both Keisha and Raj's shapes. Show students how to fill in the chart and calculate how many times bigger or smaller Raj's shape is than Keisha's shape. For example, say, "Raj made Keisha's parallelogram bigger. The purple side on Keisha's parallelogram is 2 units long. The purple side on Raj's parallelogram is 4 units long. So 2 x 2 = 4. Raj's shape is two times bigger than Keisha's shape."
Provide Practice	***Provide students with the appropriate Geometry pages, Geometry Chart 17 and math supports, as needed.*** **Level 3:** Have the student complete the activities to independently describe if a turn, flip or slide has been applied to an object and describe the dilation of a shape in real-world situations. **Level 2:** Have the student identify if a turn, flip or slide has been applied to an object and identify the effect of a dilation on a shape in real-world situations, with support. **Level 1:** Have the students select a turn, flip, slide or the effect of a dilation on a shape from a narrowed field or errorless choice(s). For example, show the student Keisha's parallelogram and Raj's copy of the parallelogram. Present the student with the Fill-In Card "bigger". Ask, "What happened to the parallelogram when Raj copied it?" Have the student select the "bigger" Fill-In Card.
Review	• Revisit the learning goal by reviewing slides, flips, turns and dilations. Use the printed Coordinate Plane and manipulatives to have students practice making slides, flips, turns and dilations. Additionally, consider having students perform a series of transformations using a manipulative while having another student describe each transformation performed on the manipulative. • Use Geometry Chart 17 to review the math words regularly. Each row can be cut out and used to make a foldable for each student and/or cut apart and used as a matching activity. Create a classroom math word wall, adding each word and its picture as it is introduced. Review the wall regularly and reference it during instruction.

Check Understanding ?

- **Level 3:** Can the student independently describe if a turn, flip or slide has been applied to an object and describe the dilation of a shape in real-world situations?
- **Level 2:** Can the student identify if a turn, flip or slide has been applied to an object and identify the effect of a dilation on a shape in real-world situations, with support?
- **Level 1:** Can the student select a turn, flip, slide or the effect of a dilation on a shape from a narrowed field or errorless choice(s)?

Instructional Target

Math Standards for Geometry: Circles

- ***Understand and apply theorems about circles:*** Identify parts of a circle (radius, diameter, tangent, chord, arc, sector, central angle) in real-world scenarios.
- ***Find arc lengths and areas of sectors of circles:*** Solve problems involving measurements of circles (circumference, area, arc length or area of a sector).

Differentiated Tasks

Level 3 Students will...

- Independently identify parts of a circle in a real-world situation.
- Independently find a measurement of a circle (circumference, area, arc length and/or area of a sector) to solve a problem.

Level 2 Students will...

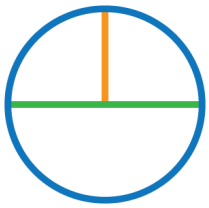
- Identify parts of a circle in a real-world situation, with support.
- Find a measurement of a circle (circumference, area, arc length or area of a sector) to solve a problem with support.

Level 1 Students will...

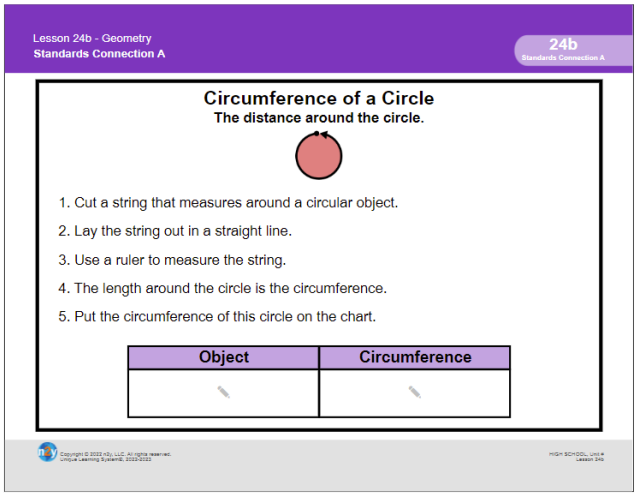
- Select a part of a circle from a narrowed field or errorless choice(s).
- Given a circle, select a measurement of a circle (circumference, area, arc length or area of a sector) using a visual model.

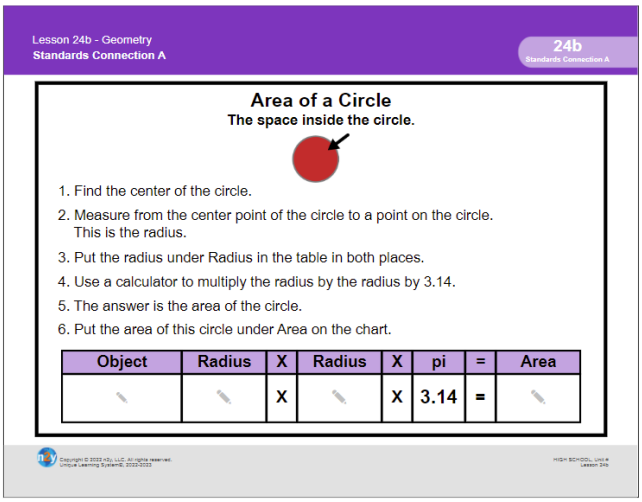
This activity is designed to build foundational skills in geometry of circles. Review the terms to know about a circle. Select one real-life object that is shaped like a circle (plate, hula-hoop, wall clock, food storage container lid, etc.). Follow the directions and complete the charts to explore the circumference and area of the objects.

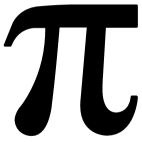
Terms to know about a circle



Circumference: The distance around the circle.
Diameter: The distance from one point on the circle, through the center, to another point on the circle.
Radius: The distance from the center of a circle to a point on its circumference.
Area: The space inside the circle.







Why are we multipying by 3.14? This is the rounded version of pi. Pi is the ratio of a circle's circumference to its diameter. Pi is symbolized by π. Pi is found by dividing the circumference by the diameter of any circle. No matter how big or small the circle is, its circumference divided by its diameter will always equal pi.

Instructional Targets

Math Standards for Geometry: Similarity, Right Triangles and Trigonometry

- ***Building Blocks to Geometry: Similarity, Right Triangles and Trigonmetry:*** Identify right triangles and parts of a right triangle (right angle, legs, hypotenuse).
- ***Apply geometric concepts in modeling situations:*** Apply knowledge of triangle theorems to find or compare the missing angles and/or sides of triangles.

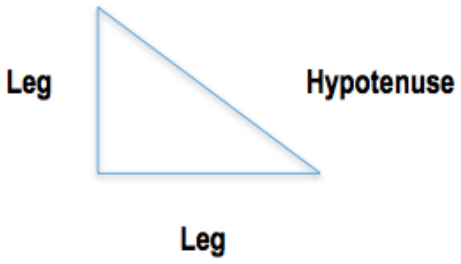
Differentiated Tasks

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• Independently find right triangles and/or identify a leg, hypotenuse or the right angle. • Independently find or compare the measures of sides and/or angles of a triangle.	• Find right triangles and/or identify a leg, hypotenuse or the right angle, with support. • Find or compare the measures of sides and/or angles of a triangle, with support.	• Find right triangles and/or identify a leg, hypotenuse or the right angle using a model. • Find or compare the measures of sides and/or angles of a triangle by making a selection form a narrowed field or errorless choice(s).

This activity is designed to build foundational skills in geometry of right triangles and the application of the Pythagorean Theorem. Review the terms to know about triangle. Explore real-life examples of right triangles using the suggestion below as a guide. Then choose one of the following six pages of special right triangles to prove the Pythagorean Theorem.

Terms to know about triangles

Right triangle: A triangle that has one 90°angle.
Leg: One of the sides of the triangle that makes the 90° angle.
Hypotenuse: The longest side of the triangle that is across from the 90° angle.
Pythagorean Theorem: A theorem in geometry stating that in a right triangle, the area of the square on the hypotenuse is equal to the sum of the areas of the squares drawn on the other two legs.



What can we do with right triangles?

Identify parts of right triangles using real-world objects:
Have students create right triangles in their environment. Students can identify right angles in their environment, such as the corner of a door frame, picture frame or table. Students can use string, wax sticks, tape, etc. to connect the ends of the two angle sides to make a diagonal or the hypotenuse. Have students identify the legs and hypotenuse of the triangle.

$$Leg^2 + Leg^2 = Hypotenuse^2$$

Understand the Pythagorean Theorem: Choose one of the special right triangles in the Standards Connection Activity to focus on each month. Have students count unit squares to determine the measurements of the legs and hypotenuse of a right triangle. Have students fill in the numbers for the formula. Help students make the connection between seeing the Pythagorean Theorem visually and mathematically. For example, note that if students count all the units in each square that borders the sides of the triangle, it is the same as squaring the lengths of the legs or hypotenuse.

Apply the Pythagorean Theorem: Have students use the chart in the Standards Connection Activity to apply the Pythagorean Theorem to triangles they encounter throughout the school day. As students work with right triangles during instruction, have them use a measuring tool to measure the legs and hypotenuse of the triangle. Students can record the measurements on the chart and complete the formula for the Pythagorean Theorem. Encourage students to examine if the left and right sides of the equation are equal. Discuss how the sum of the squared legs of a right triangle will always equal the square of the hypotenuse. Consider discussing how students might use the formula for the Pythagorean Theorem to find the measurement of the hypotenuse if the measurement of the legs is given.

Instructional Targets

Math Standards for Geometry: Geometric Measurement and Dimension
- ***Explain volume formulas and use them to solve problems:*** Determine the volume of three-dimensional objects.

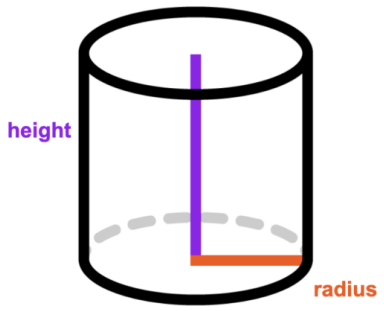
Differentiated Tasks

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• Independently find the volume of three-dimensional objects.	• Find the volume of three-dimensional objects, with support.	• Count unit cubes on a model of a shape to find the volume using an active response (e.g., voice output device, eye gaze board).

This activity is designed to build foundational skills in geometry for finding the volume of three dimensional objects. Examine real-life examples of these objects using the suggestion below as a guide. Point out the color-coded dimensions on the diagrams of the cone, cylinder and rectangular pyramid and where each dimension is used in the formula to find the volume of the object. Then find the volume of one three dimensional object as described below.

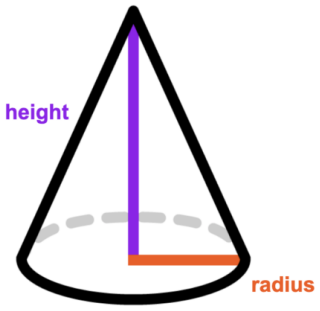
Examine real-world objects: Have students examine real-world cylinders, cones and pyramids. Encourage students to point out the different measurements of the object, such as the height, radius, length and width.

Cylinder:



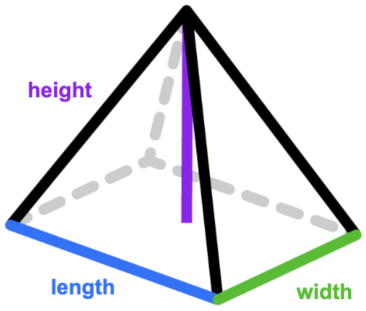
Volume = 3.14 x radius x radius x height

Cone:



Volume = (3.14 x radius x radius x height) ÷ 3

Rectangular Pyramid:

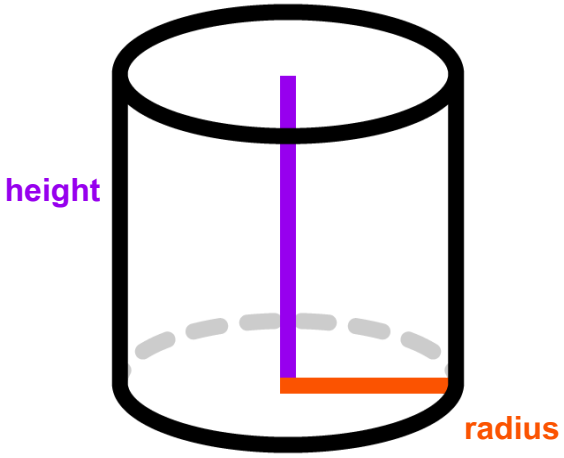


Volume = (length x width x height) ÷ 3

Find the volume of real-world objects: Each month, have students focus on finding the volume of either a cylinder, cone or pyramid. Have students use a real-world object or drawing of a real-world object. Have students use measurement tools to take the appropriate measurements needed to find the volume of the object and record them on the Standards Connection Activity page. Finally, have the students use the measurements to find the volume of the cylinder, cone or pyramid.

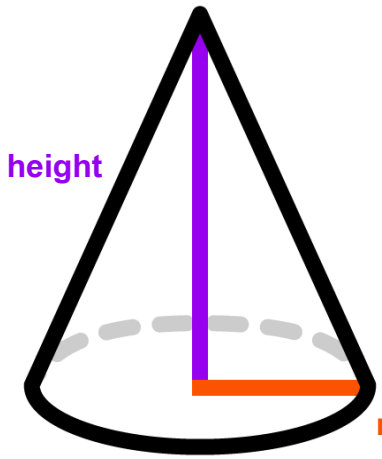
Why are we multipying by 3.14? This is the rounded version of pi. Pi is the ratio of a circle's circumference to its diameter. Pi is symbolized by (π). Pi is found by dividing the circumference by the diameter of any circle. No matter how big or small the circle is, its circumference divided by its diameter will always equal pi.

Volume Formulas



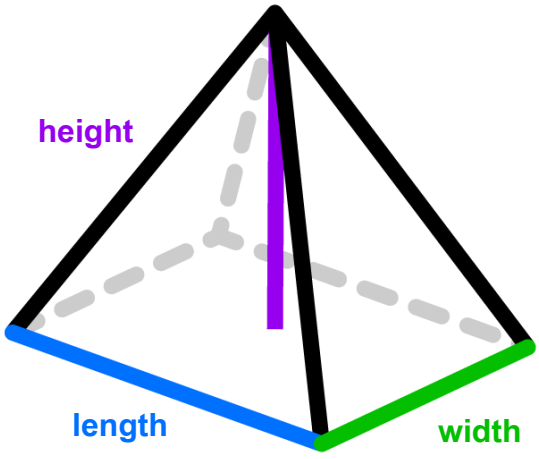
Cylinder:

Volume = 3.14 x radius x radius x height



Cone:

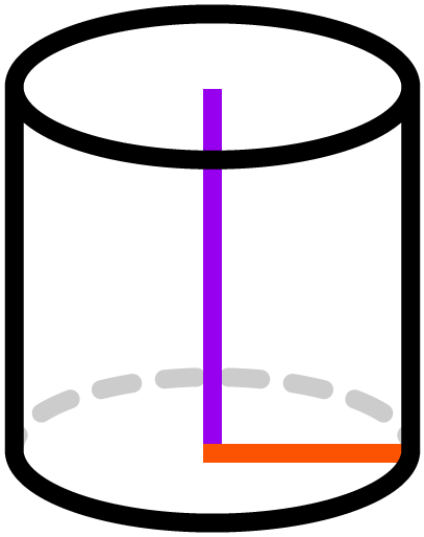
Volume = (3.14 x radius x radius x height) ÷ 3



Rectangular Pyramid:

Volume = (length x width x height) ÷ 3

height = _____ units



radius = _____ units

The volume of a cylinder equals:
Volume = 3.14 x radius x radius x height

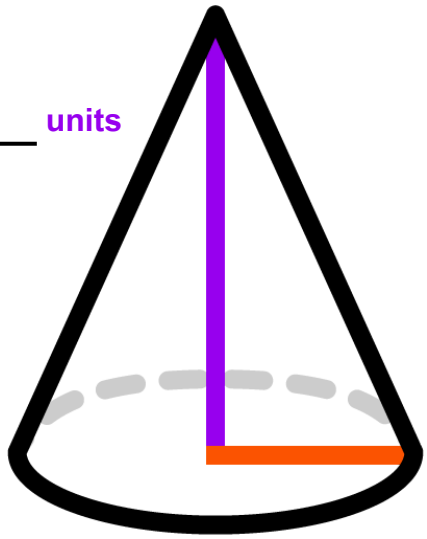
The radius of the cylinder is _____ units.

The height of the cylinder is _____ units.

Solve the equation to find the volume of the cylinder.

3.14 x _____ units x _____ units x _____ units = _____ units cubed
pi **radius** **radius** **height**

The volume of the cylinder is _____ units cubed.



The volume of a cone equals:
Volume = (3.14 x radius x radius x height) ÷ 3

The radius of the cone is _____ units.

The height of the cone is _____ units.

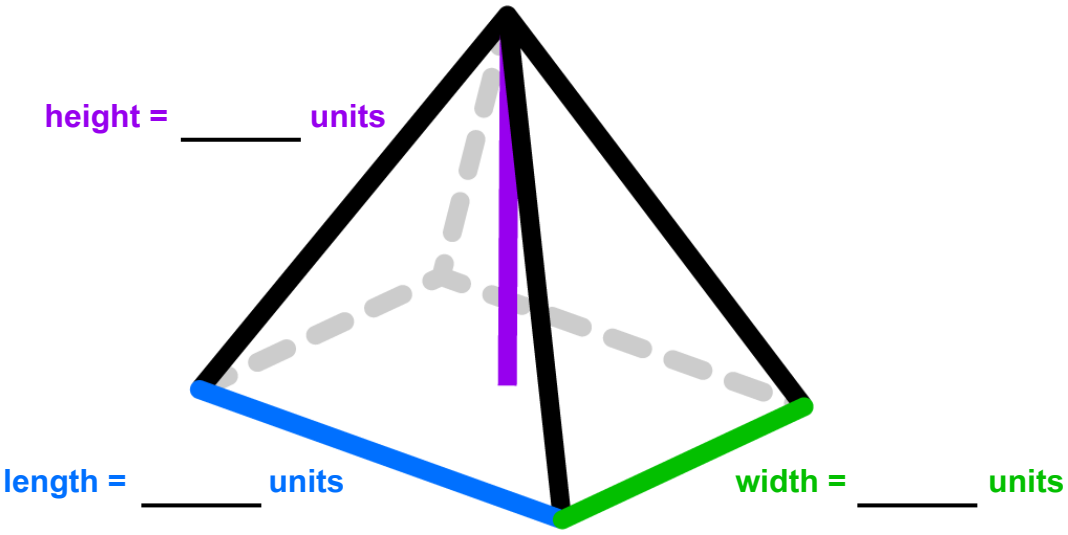
Solve the equation to find the volume of the cone.

3.14 x _____ units x _____ units x _____ units = _____ units cubed
pi **radius** **radius** **height**

Divide the answer by 3.

_____ ÷ 3 = _____ units cubed

The volume of the cone is _____ units cubed.



The volume of a square or rectangular pyramid equals:
Volume = (length x width x height) ÷ 3

The length of the pyramid is _____ units.

The width of the pyramid is _____ units.

The height of the pyramid is _____ units.

Solve the equation to find the volume of the pyramid.

_____ units x _____ units x _____ units = _____ units cubed
length width height

Divide the answer by 3.

_____ ÷ 3 = _____ units cubed

The volume of the pyramid is _____ units cubed.

Lesson 25a - Algebra
In Science Club

25a

Instructional Targets

Math Standards for Algebra — Seeing Structure in Expressions

- ***Building Blocks to Algebra:*** Understand and use +, - and = to solve addition and subtraction problems. Model and solve problems involving multiplication or division.
- ***Interpret the Structure of an Expression:*** Identify the different parts of an expression that represents a real-world situation and explain their meaning.
- ***Write Expressions in Equivalent Forms to Solve Problems:*** Write and simplify an expression that represents a real-world situation.

Math Standards for Algebra — Reasoning with Equations and Inequalities

- ***Understand solving equations as a process of reasoning and explain the reasoning:*** Order a sequence of steps to solve an equation.
- ***Solve Equations and Inequalities in One Variable:*** Use equations to solve real-world problems when a part is unknown.

Differentiated Tasks

Level 3 Students will...

- In the context of a real-world scenario, calculate addition and subtraction problems.
- In the context of a real-world scenario, model multiplication and division with objects and numbers that show equal groups.
- Identify and explain the parts of an expression.
- In the context of a real-world scenario, write and simplify an expression.
- In the context of a real-world scenario, use a combination of operations to solve an equation.
- Solve a real-world problem using equations involving one variable.

Level 2 Students will...

- In the context of a real-world scenario, model addition and subtraction of two sets of objects.
- Count equal numbers of objects in selected groups or an array.
- Identify the parts of an expression.
- In the context of a real-world scenario, select numbers to write and simplify an expression.
- In the context of a real-world scenario, use operations and models to solve an equation.
- Solve real-world problems using equations involving one variable and models.

Level 1 Students will...

- Count a set of objects in an addition or a subtraction problem through an active participation response (e.g. voice output device, eye gaze choice board).
- Count a set of objects in a group through an active participation response (e.g., voice output device, eye gaze choice board).
- Select a part of an expression from a narrowed field or errorless choice(s).
- In the context of a real-world scenario, select numbers to write an expression from a narrowed field or errorless choice(s).
- In the context of a real-world scenario, select numbers from a narrowed field or errorless choice(s).
- Select numbers from a narrowed field or errorless choice(s) to solve a real-world problem involving one variable.

Topic Connection

Throughout this unit, students learn about the scientific inquiry process and how famous scientists used the scientific method to make discoveries. The scenarios in this lesson focus on items used in a science club to do experiments. As you work through the scenarios, talk with students about the different objects and how they might be used.

Topic Words

experiment	scientific method	test
science	scientist	

Math Words

add	equal	more*	simplify
altogether	equation	multiply	solve
count	expression	negative	subtract
divide	less*	positive	variable

Benchmark Assessments

- Math Problem Solving: Adding and Subtract
- Math Problem Solving: Multiply and Divide
- Basic Math: Numbers and Counting to 20
- Early Learning: Emerging Math
- Emerging Skills: Early Emerging Math Rubric

Lesson at a Glance

	Activity 1.1-1.2	Activity 2.1-2.6	Activity 3.1-3.2	Activity 4.1-4.2
Instructional Activities	Writing and Simplifying Expressions 1 (addition and subtraction)	Writing and Solving Equations 1 (addition and subtraction)	Writing and Simplifying Expressions 2 (multiplication and division)	Writing and Solving Equations 2 (multiplication and division)
See how these activities fit into the **Suggested Unit Pacing**.				
ULS Materials and Resources	**Clues Guide 1** **Write and Simplify Addition Expressions 1a-1b** **Clues Guide 2** **Write and Simplify Subtraction Expressions 1a-1b** **Clues Guide 1 and 2** **Manipulatives**	**Clues Guide 3** **Write & Solve Addition Equations 1a-1b** **Clues Guide 4** **Write & Solve Addition Equations 2a-2b** **Clues Guide 5** **Write & Solve Addition Equations 3a-3b** **Clues Guide 6** **Write & Solve Subtraction Equations 1a-1b** **Clues Guide 7** **Write & Solve Subtraction Equations 2a-2b** **Clues Guide 8** **Write & Solve Subtraction Equations 3a-3b** **Manipulatives** **Standards Connection A**	**Clues Guide 9** **Write & SImplify Multiplication Expressions 1a-1b** **Clues Guide 10** **Write & Simplify Division Expressions 1a-1b** **Manipulatives** **Fill-In Cards**	**Clues Guide 11** **Write & Solve Multiplication Equations 1a-1b** **Clues Guide 12** **Write & Solve Division Equations 1a-1b** **Manipulatives** **Standards Connection B** **Fill-In Cards**
Additional Materials				

Math Supports: Math Story Problems include interactive manipulatives. Use additional tools, such as those listed below, real objects or printable manipulatives to support student learning as needed.

Instructional Tools: Number Journal
Instructional Tools: Math Pack/ Numbers
Instructional Guides: Mathematics
L³ Skills: Math Skills

n2y Math Manipulatives Kit

Circle Counters	MathLine®
Foam Tiles	Foldable MathLine®
Magnet Numbers	Sorting Bowls

Lesson 25a - Algebra
Activity 1.1-1.2 - Writing and Simplifying Expressions 1

25a
Activity 1.1-1.2

Instructional Targets

Math Standards for Algebra — Seeing Structure in Expressions

- ***Building Blocks to Algebra:*** Understand and use +, - and = to solve addition and subtraction problems.
- ***Interpret the Structure of an Expression:*** Identify the different parts of an expression which represents a real-world situation and explain their meaning.
- ***Write Expressions in Equivalent Forms to Solve Problems:*** Write and simplify an expression that represents a real-world situation.

Instructional Routine

? or

Introduce

- Introduce this activity by asking a focus question. For example ask, "What does the word, 'altogether' mean in a word problem—add or subtract?" Discuss students' responses.
- Review and discuss the key words used in addition and subtraction problems, relating the words to their signs. Use Clues Guides 1 and 2 located at the beginning of each lesson to provide a visual.
- Discuss the use of a variable to represent an unknown number in the problem.
- Tell students that they will be writing and simplifying math expressions with addition and subtraction. Say, "Today, your job is to write and simplify math expressions."
- Review the learning goals with students: **Levels 2-3: I will write and simplify math expressions.**
  Level 1: I will count objects.

Model

Choose Algebra Problems for modeling and practice based on students' needs and abilities. Algebra Problems include Manipulatives (interactive or printable). Additional Math Supports such as the Number Journal, Math Pack Number Cards or real objects may be used to support modeling and practice as appropriate.

- Call attention to a math expression. Point out that numbers in the expression are represented by the letters A and B.

Level 3: Model the steps of writing a math expression. Emphasize the location of the information. For example point to the "Write the expression" portion of the first problem and say, "I need to fill in a number for A." Then point to the A located in the first part of the scenario and say, "Here is an A." Read the sentence next to the A. Locate the number in the sentence and fill in the number for A in the expression. Continue this process for B. Since B is unknown, write 'B' in the second part of the expression. Explain that if a number is unknown, we use the variable in the expression to represent the unknown number. Then simplify the expression. Read the second part of the scenario below the expression. Model filling in the number for A and the now known number for B. Complete the operation to simplify the expression and find the answer. Model using Math Supports as needed.

Level 2: Model finding the information, writing the math expression and filling in the unknown variable. Then use Manipulatives to illustrate the scenario and solve the problem.

Level 1: Read the scenario in the first problem and stop at the first number. Model counting the Manipulatives for the first number in the scenario and choosing the correct variable for the unknown. Then select the correct numeral for the number of Manipulatives counted and variable for the unknown. Repeat for each number in the scenario, as well as the answer to the scenario.

Provide Practice

Provide students with the appropriate Algebra Problems, Clues Guides 1 and 2 and Math Supports as needed.

Level 3: Have students read, act out, write and simplify the Algebra Problem expressions.
Level 2: Read and act out an Algebra Problem. Have the student illustrate/represent the Algebra Problem using desired Manipulatives. Have the student simplify the problem and then complete the expression.
Level 1: Read and act out an Algebra Problem. Have the student actively participate in counting the number or numbers using Manipulatives. Have the student use his or her active participation mode to select the number counted from a narrowed field or errorless choice(s). Assist the student in using his or her selection to complete the math expression. Interactive numbers or other Math Supports should be used as needed.

Review

- Revisit the learning goal by reviewing selected math expressions with students. Point out how the numbers in the expressions represent the numbers in the problems.

Check Understanding ?

Level 3: Can the student read, write and simplify a math expression (using individual modifications)?
Level 2: Can the student use objects/manipulatives to represent and simplify a math expression?
Level 1: Can the student participate in counting objects and choosing a number to complete an expression?

Lesson 25a - Algebra
Activity 2.1-2.6 - Writing and Solving Equations 1

25a
Activity 2.1-2.6

Instructional Targets

Math Standards for Algebra — Seeing Structure in Expressions

- ***Building Blocks to Algebra:*** Understand and use +, - and = to solve addition and subtraction problems.

Math Standards for Algebra — Reasoning with Equations and Inequalities

- ***Understand solving equations as a process of reasoning and explain the reasoning:*** Order a sequence of steps to solve an equation.
- ***Solve Equations and Inequalities in One Variable:*** Use equations to solve real-world problems when a part is unknown.

Instructional Routine

? or

Introduce

- Introduce this activity by asking a focus question. For example ask, "What do the words, 'How many are left?' mean in a word problem—-add or subtract?" Discuss students' responses.
- Review and discuss the key words used in addition and subtraction problems, relating the words to their signs. Use Clues Guides 3, 4, 5, 6, 7 and 8 located at the beginning of each lesson to provide a visual.
- Discuss the use of a variable to represent an unknown number in the problem.
- Tell students that they will be writing and solving math equations with addition and subtraction. Say, "Today, your job is to write and solve math equations."
- Review the learning goals with students: **Levels 2-3: I will write and solve math equations.**
  Level 1: I will count objects.

Model

Choose Algebra Problems for modeling and practice based on students' needs and abilities. Algebra Problems include Manipulatives (interactive or printable). Additional Math Supports such as the Number Journal, Math Pack Number Cards or real objects may be used to support modeling and practice as appropriate.

- Call attention to a math equation. Point out that numbers in the equation are represented by the letters A, B and C.

Level 3: Model the steps of writing a math equation. Emphasize the location of the information. For example point to the "Write the equation" portion of the first problem and say, "I need to fill in a number for A." Then point to the A located in the first part of the scenario and say, "Here is an A." Read the sentence next to the A. Locate the number in the sentence and fill in the number for A in the equation. Continue this process until the math equation is written. Then solve the problem following the Clues Guide. Check the answer by replacing the variable in the original equation with the answer. Model using Math Supports as needed.

Level 2: Model finding the information and writing the math equation. Then use Manipulatives to illustrate the scenario. Use the Manipulatives to solve the problem and check the answer.

Level 1: Read the scenario in the first problem and stop at the first number. Model counting the Manipulatives for the first number in the scenario. Then select the correct numeral for the number of Manipulatives counted. Repeat for each number in the scenario, as well as the answer to the scenario.

To extend the lesson, model basic properties with numbers in Algebra Problems using the Standards Connections A.

Provide Practice

Provide students with the appropriate Algebra Problems, Clues Guides 3, 4, 5, 6, 7, 8 and Math Supports as needed.

Level 3: Have students read, act out, write and solve the Algebra Problem equations.
Level 2: Read and act out an Algebra Problem. Have student illustrate/represent the Algebra Problem using desired Manipulatives. Have the student solve the problem and then complete the equation.
Level 1: Read and act out an Algebra Problem. Have the student actively participate in counting the number or numbers using Manipulatives. Have the student use his or her active participation mode to select the number counted from a narrowed field or errorless choice(s). Assist the student in using his or her selection to complete the math equation. Interactive numbers or other Math Supports should be used as needed.

Review

- Revisit the learning goal by reviewing selected math equations with students. Point out how the numbers in the equations represent the numbers in the problems.

Check Understanding ?

- **Level 3:** Can the student read, write and solve a math equation (using individual modifications)?
- **Level 2:** Can the student use objects/manipulatives to represent and solve a math equation?
- **Level 1:** Can the student participate in counting objects and choosing a number to complete an equation?

Instructional Targets

Math Standards for Algebra — Seeing Structure in Expressions

- ***Building Blocks to Algebra:*** Model and solve problems involving multiplication or division.
- ***Interpret the Structure of an Expression:*** Identify the different parts of an expression which represent a real-world situation and explain their meaning.
- ***Write Expressions in Equivalent Forms to Solve Problems:*** Write and simplify an expression which represents a real-world situation.

Instructional Routine

? or

Introduce

- Introduce this activity by asking a focus question. For example ask, "What does the word, 'altogether' mean in a word problem—add, multiply or both?" Discuss students' responses.
- Review and discuss the key words used in multiplication and division problems, relating the words to their signs. Use Clues Guides 9 and 10 located at the beginning of each lesson to provide a visual.
- Discuss the use of a variable to represent an unknown number in the problem.
- Tell students that they will be writing and simplifying math expressions with multiplication and division. Say, "Today, your job is to write and simplify math expressions."
- Review the learning goals with students: **Levels 2-3: I will write and simplify math expressions.**
  Level 1: I will count objects.

Model

Choose Algebra Problems for modeling and practice based on students' needs and abilities. Algebra Problems include Manipulatives (interactive or printable). Additional Math Supports such as the Number Journal, Math Pack Number Cards or real objects may be used to support modeling and practice as appropriate.

- Call attention to a math expression. Point out that numbers in the expression are represented by the letters A and B.

Level 3: Model the steps of writing a math expression. Emphasize the location of the information. For example point to the "Write the expression" portion of the first problem and say, "I need to fill in a number for A." Then point to the A located in the first part of the scenario and say, "Here is an A." Read the sentence next to the A. The number for A is unknown, so we use 'A' as the variable to write in the expression. Write the variable 'A' in the expression. Continue this process for B. Since B has a number, locate the number in the sentence and fill in the number for B. Then simplify the expression. Read the second part of the scenario below the expression. Model filling in the now known number for A and the number for B. Complete the operation to simplify the expression and find the answer. Model using Math Supports as needed.

Level 2: Model finding the information, writing the math expression and filling in the unknown variable. Then use Manipulatives to illustrate the scenario and solve the Algebra Problem.

Level 1: Read the scenario in the first problem and stop at the first number. Model counting the Manipulatives for the first number in the scenario and choosing the correct variable for the unknown. Then select the correct numeral for the number of Manipulatives counted and variable for the unknown. Repeat for each number in the scenario, as well as the answer to the scenario.

Provide Practice

Provide students with the appropriate Algebra Problems, Clues Guides 9 and 10 and Math Supports as needed.

Level 3: Have students read, act out, write and simplify the Algebra Problem expressions.
Level 2: Read and act out an Algebra Problem. Have the student illustrate/represent the Algebra Problem using desired Manipulatives. Have the student simplify the problem and then complete the expression.
Level 1: Read and act out an Algebra Problem. Have the student actively participate in counting the number or numbers using Manipulatives. Have the student use his or her active participation mode to select the number counted from a narrowed field or errorless choice(s). Assist the student in using his or her selection to complete the math expression. Interactive numbers or other Math Supports should be used as needed.

Review

- Revisit the learning goal by reviewing selected math expressions with students. Point out how the numbers in the expressions represent the numbers in the problems.

Check Understanding ?

Level 3: Can the student read, write and simplify a math expression (using individual modifications)?
Level 2: Can the student use objects/manipulatives to represent and simplify a math expression?
Level 1: Can the student participate in counting objects and choosing a number to complete an expression?

Lesson 25a - Algebra
Activity 4.1-4.2 - Writing and Solving Equations 2

25a
Activity 4.1-4.2

Instructional Targets

Math Standards for Algebra — Seeing Structure in Expressions
- ***Building Blocks to Algebra:*** Model and solve problems involving multiplication or division.

Math Standards for Algebra — Reasoning with Equations and Inequalities
- ***Understand solving equations as a process of reasoning and explain the reasoning:*** Order a sequence of steps to solve an equation.
- ***Solve Equations and Inequalities in One Variable:*** Use equations to solve real-world problems when a part is unknown.

Instructional Routine

? or

Introduce
- Introduce this activity by asking a focus question. For example ask, "What do the words, 'How many are in each?' mean in a word problem—divide or subtract?" Discuss students' responses.
- Review and discuss the key words used in multiplication and division problems, relating the words to their signs. Use Clues Guides 11 and 12 located at the beginning of each lesson to provide a visual.
- Discuss the use of a variable to represent an unknown number in the problem.
- Tell students that they will be writing and solving math equations with multiplication and division. Say, "Today, your job is to write and solve math equations."
- Review the learning goals with students: **Levels 2-3: I will write and solve math equations.**
  Level 1: I will count objects.

Model

Choose Algebra Problems for modeling and practice based on students' needs and abilities. Algebra Problems include Manipulatives (interactive or printable). Additional Math Supports such as the Number Journal, Math Pack Number Cards or real objects may be used to support modeling and practice as appropriate.
- Call attention to a math equation. Point out that numbers in the equation are represented by the letters A, B and C.

Level 3: Model the steps of writing a math equation. Emphasize the location of the information. For example point to the "Write the equation" portion of the first problem and say, "I need to fill in a number for A." Then point to the A located in the first part of the scenario and say, "Here is an A." Read the sentence next to the A. Locate the number in the sentence and fill in the number for A in the equation. Continue this process until the math equation is written. Then solve the problem following the Clues Guide. Check the answer by replacing the variable in the original equation with the answer. Model using Math Supports as needed.

Level 2: Model finding the information and writing the math equations. Then use Manipulatives to illustrate the scenario. Use the Manipulatives to solve the problem and check the answer.

Level 1: Read the scenario in the first problem and stop at the first number. Model counting the Manipulatives for the first number in the scenario. Then select the correct numeral for the number of Manipulatives counted. Repeat for each number in the scenario, as well as the answer to the scenario.

To extend the lesson, model basic properties with numbers in Algebra Problems using the Standards Connections B.

Provide Practice

Provide students with the appropriate Algebra Problems, Clues Guides 11 and 12 and Math Supports as needed.

Level 3: Have students read, act out, write and solve the Algebra Problem equations.
Level 2: Read and act out an Algebra Problem. Have the student illustrate/represent the Algebra Problem using desired Manipulatives. Have the student solve the problem and then complete the equation.
Level 1: Read and act out an Algebra Problem. Have the student actively participate in counting the number or numbers using Manipulatives. Have the student use his or her active participation mode to select the number counted from a narrowed field or errorless choice(s). Assist the student in using his or her selection to complete the math equation. Interactive numbers or other Math Supports should be used as needed.

Review
- Revisit the learning goal by reviewing selected math equations with students. Point out how the numbers in the equations represent the numbers in the problems.

Check Understanding ?

Level 3: Can the student read, write and solve a math equation (using individual modifications)?
Level 2: Can the student use objects/manipulatives to represent and solve a math equation?
Level 1: Can the student participate in counting objects and choosing a number to complete an equation?

Instructional Target

Math Standards for Number and Quantity: The Complex Number System

- ***Perform arithmetic operations with complex numbers.***
  Use the commutative, associative and distributive properties to add, subtract and multiply whole numbers.

Differentiated Tasks

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• In the context of a real-world scenario, students will use the commutative, associative, or distributive properties to add, subtract or multiply whole numbers.	• In the context of a real-world scenario, model addition, subtraction or multiplication of sets of objects.	• Count a set of objects in an addition, subtraction or multiplication problem through an active participation response (e.g., voice output device, eye gaze choice objects).

The understanding of the properties of numbers is a strategy for solving math sentences. Type in a number sentence on the left side of the equal sign, and have students select numbers to make the math sentence true.

+	Basic Properties of Numbers	
Property	**Explanation**	**Addition**
Commutative	Order doesn't matter	a + b = b + a ex: 1 + 2 = 2 + 1 3 = 3
Associative	Grouping doesn't matter	(a + b) + c = a + (b + c) ex: (2 + 3) + 4 = 2 + (3 + 4) 5 + 4 = 2 + 7 9 = 9

Commutative Property

When adding two numbers, the order in which you add them does not matter. Changing the order of the numbers will not change the sum.

Associative Property

Explain to students that parentheses tell us what operation we have to do first. However, when there are only addition operations within a number sentence, the grouping of the numbers will not matter. Either way you add them together, you will get the same sum.

+	Basic Properties of Numbers	
Property	**Explanation**	**Addition**
Commutative	Order doesn't matter	a + b = b + a ex: 1 + 2 = 2 + 1 3 = 3
Associative	Grouping doesn't matter	(a + b) + c = a + (b + c) ex: (2 + 3) + 4 = 2 + (3 + 4) 5 + 4 = 2 + 7 9 = 9

+	Basic Properties of Numbers					
Commutative Property of Addition						
Order doesn't matter			a + b = b + a ex: 1 + 2 = 2 + 1 3 = 3			
a	+	b	=	b	+	a
	+		=		+	
			=			
Is the equation true?			Yes		No	

+	Basic Properties of Numbers											
Associative Property of Addition												
Grouping doesn't matter						(a + b) + c = a + (b + c) ex: (2 + 3) + 4 = 2 + (3 + 4) 5 + 4 = 2 + 7 9 = 9						
(	a	+	b	)	+	c	=	a	+	(	b	+	c	)
(		+		)	+		=		+	(		+		)
					+		=		+					
							=							
Is the equation true?							Yes				No			

Instructional Target

Math Standards for Number and Quantity: The Complex Number System

- ***Perform arithmetic operations with complex numbers.***
  Use the commutative, associative and distributive properties to add, subtract and multiply whole numbers.

Differentiated Tasks

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• In the context of a real-world scenario, students will use the commutative, associative, or distributive properties to add, subtract or multiply whole numbers.	• In the context of a real-world scenario, model addition, subtraction or multiplication of sets of objects.	• Count a set of objects in an addition, subtraction or multiplication problem through an active participation response (e.g., voice output device, eye gaze choice objects).

The understanding of the properties of numbers is a strategy for solving math sentences. Type in a number sentence on the left side of the equal sign, and have students select numbers to make the math sentence true.

X	Basic Properties of Numbers	
Property	**Explanation**	**Multiplication**
Commutative	Order doesn't matter	a x b = b x a ex: 2 x 3 = 3 x 2 6 = 6
Associative	Grouping doesn't matter	(a x b) x c = a x (b x c) ex: (2 x 3) x 4 = 2 x (3 x 4) 6 x 4 = 2 x 12 24 = 24
Distributive	Adding the addends, then multiplying the sum by the factor is the same as multiplying each addend by the factor then adding them together.	a x (b + c) = (a x b) + (a x c) ex: 2 x (3 + 1) = (2 x 3) + (2 x 1) 2 x 4 = 6 + 2 8 = 8

Commutative Property

When multiplying two numbers, the order in which you multiply them does not matter. Changing the order of the numbers will not change the product.

Associative Property

Explain to students that parentheses tell us what operation we have to do first. However, when there are only multiplication operations within a number sentence, the grouping of the numbers will not matter. Either way you multiply them together, you will get the same product.

Distributive Property

Explain to students that distribute means to share out. In multiplication, the factor can be shared over each addend, by multiplying each addend by the factor, then adding the products to find the answer. This will produce the same answer as adding the two addends first within the parentheses and then multiplying the sum by the factor.

X	Basic Properties of Numbers	
Property	**Explanation**	**Multiplication**
Commutative	Order doesn't matter	a x b = b x a ex: 2 x 3 = 3 x 2 6 = 6
Associative	Grouping doesn't matter	(a x b) x c = a x (b x c) ex: (2 x 3) x 4 = 2 x (3 x 4) 6 x 4 = 2 x 12 24 = 24
Distributive	Adding the addends, then multiplying the sum by the factor is the same as multiplying each addend by the factor then adding them together.	a x (b + c) = (a x b) + (a x c) ex: 2 x (3 + 1) = (2 x 3) + (2 x 1) 2 x 4 = 6 + 2 8 = 8

X	Basic Properties of Numbers						
Commutative Property of Multiplication							
Order doesn't matter			a x b = b x a ex: 2 x 3 = 3 x 2 6 = 6				
a	x	b	=	b	x	a	
	x		=		x		
			=				
Is the equation true?			Yes		No		

X	Basic Properties of Numbers													
Associative Property of Multiplication														
Grouping doesn't matter						(a x b) x c = a x (b x c) ex: (2 x 3) x 4 = 2 x (3 x 4) 6 x 4 = 2 x 12 24 = 24								
(	a	x	b	)	x	c	=	a	x	(	b	x	c	)
(		x		)	x		=		x	(		x		)
					x		=		x					
							=							
Is the equation true?							Yes				No			

	Basic Properties of Numbers																
Distributive Property																	
Adding the addends, then multiplying the sum by the factor is the same as multiplying each addend by the factor then adding them together.							a x (b + c) = (a x b) + (a x c) ex: 2 x (3 + 1) = (2 x 3) + (2 x 1) 2 x 4 = 6 + 2 8 = 8										
a	x	(	b	+	c	)	=	(	a	x	b	)	+	(	a	x	c	)
	x	(		+		)	=	(		x		)	+	(		x		)
	x						=						+					
							=											
Is the equation true?							**Yes**						**No**					

Lesson 25b - Algebra
In Science Club

25b

Instructional Targets

Math Standards for Algebra — Creating Equations
- ***Building Blocks to Creating Equations:*** Graph positive and negative numbers in a real-world scenario.
- ***Create equations that describe numbers or relationships:*** Represent a real-world situation with an equation or inequality.
- ***Graph Equations on Coordinate Axes:*** Graph coordinate points of an equation.

Math Standards for Algebra — Reasoning with Equations and Inequalities
- ***Solve equations and inequalities in one variable:*** Use equations to solve real-world problems when a part is unknown. Use inequalities to solve real-world problems in which a part is unknown.
- ***Represent and Solve Equations and Inequalities Graphically:*** Interpret the meaning of a point on the graph of a line.

Math Standards for Algebra — Arithmetic with Polynomials and Rational Expressions
- ***Perform Arithmetic Operations on Polynomials:*** Add and subtract polynomials.

Math Standards for Functions: Interpreting and Building Functions
- ***Interpret functions that arise in applications in terms of the context:*** Use functions to solve real-world problems.
- ***Understand the Concept of a Function and Use Function Notation:*** Describe the rate of change of a function using words and numbers.
- ***Build a function that models a relationship between two quantities:*** Create a function that represents the relationship between two quantities. Construct a graph that represents a defined change in a function.

Math Standards for Life Skills for Ratio and Proportional Relationships
- ***Life Skills for Ratio and Proportional Relationships:*** Identify and write a ratio to compare part-to-part and part-to-whole relationships.

Math Standards for Statistics and Probability: Interpreting Categorical and Quantitative Data
- ***Interpret linear models:*** Describe a rate of change based on a line on a graph.
- ***Summarize, represent and interpret data on a single count or measurement value:*** Interpret data from a graph.

Differentiated Tasks

Level 3 — Students will...
- Independently identify points in all four quadrants of the coordinate plane.
- Write and solve an equation with a variable.
- Plot points on a graph to represent an equation.
- Solve a real-world problem using equations involving one variable.
- Solve a real-world problem using inequalities involving one variable.
- Identify and explain the point on a graph of a line.
- Independently solve equations involving adding and subtracting polynomials in the context of real-world problems.
- Solve a real-world problem using a function.
- Identify and explain the rate of change of a function.
- In the context of a real-world scenario, complete a function table to represent the relationship between two quantities.
- Plot points on a graph to represent the rate of change of a function.
- Identify and write a ratio to describe part-to-part and part-to-whole relationships in the context of a real-world scenario.
- Identify and explain the rate of change of a line graph.
- Compare data from tables and graphs to report specific information.

Level 2 — Students will...
- Locate points in all four quadrants of the coordinate plane, with support.
- Select pictures and numbers to model an equation with a variable.
- With support, plot points on a graph using coordinate points of an equation.
- Solve a real-world problem using equations involving one variable and models.
- Solve a real-world problem using inequalities involving one variable and models.
- Identify and explain the point on a graph of a line.
- Solve equations involving adding and subtracting polynomials in the context of real-world problems with support.
- Solve a real-world problem using a function and models.
- Identify the rate of change of a function.
- In the context of a real-world scenario, complete a function table with support.
- With support, students will plot points on a graph using coordinate points.
- Model part-to-part and part-to-whole relationships in the context of a real-world scenario.
- Identify the rate of change of a line graph with support.
- Identify specific data from a table or graph.

Level 1 — Students will...
- Select points in a quadrant of the coordinate plane from a narrowed field or errorless choice(s).
- Select a picture or number to model an equation with a variable from a narrowed field or errorless choice(s).
- Select plotted points on a graph of an equation from a narrowed field or errorless choice(s).
- Select numbers from a narrowed field and errorless choice(s) to solve a real-world problem involving one variable.
- Select numbers from a narrowed field and errorless choice(s) to solve a real-world problem involving one variable.
- Select the point on a graph of a line from a narrowed field or errorless choice(s).
- Solve equations involving adding and subtracting polynomials in the context of real-world problems with support.
- Select numbers from a narrowed field or errorless choice(s) to solve real-world problems.
- Select a rate of change of a function from a narrowed field or errorless choice(s).
- In the context of a real-world scenario, select numbers from a narrowed field or errorless choice(s) to fill in a function table.
- Select plotted points on a graph from a narrowed field or errorless choice(s).
- Match objects represented in part-to-part and part- to-whole relationships in the context of a real-world scenario.
- Select a rate of change of a line graph with support.
- Report data that is presented in a table or graph.

Topic Connection

Throughout this unit, students learn about the scientific inquiry process and famous scientists. The scenarios in this lesson focus on items used in a science club or experiment. As you work through the scenarios, talk with students about the different objects and how they might be used.

Topic Words

experiment	scientific method	test
science	scientist	

Math Words

add	divide	function	more*	polynomial	solve
altogether	equal	inequality	multiply	positive	subtract
bar graph	equation	less*	negative	ratio	variable
count	expression	line graph	plot	simplify	

* Power Words

Benchmark Assessments
- Math Problem Solving: Adding and Subtract
- Math Problem Solving: Multiply and Divide
- Basic Math: Numbers and Counting to 20
- Early Learning: Emerging Math
- Emerging Skills: Early Emerging Math Rubric

Lesson at a Glance

	Activity 1.1 - 1.3	Activity 2.1 - 2.3	Activity 3.1 - 3.2	Activity 4.1 - 4.3	Activity 5.1 - 5.2
Instructional Activities	Writing and Solving Equations 3 (addition, subtraction, multiplication, division and polynomials)	Analyzing Graphs (Bar Graphs, Line Graphs and Plotting on a 4-Quadrant Graph)	Writing, Solving and Graphing Equations and Inequalities	Writing and Graphing Functions	Writing Ratios: Part-to-Part Part-to-Total
ULS Materials and Resources	**Write Equations 1** **Write and Solve Equations 1a-1b** **Write Equations 2** **Write and Solve Equations 2a-2b** **Clues Guide 13** **Write and Solve Polynomial Equations 1a-1b** **Manipulatives** **Fill-In Cards**	**Analyzing Bar Graphs** **Plotting Coordinate Points on a Four-Quadrant Graph 1 & 2** **Analyzing Line Graphs** **Manipulatives** **Fill-In Cards**	**Write, Solve and Graph Equations 1a-1b** **Write, Solve and Graph Equations 1a-3b** **Manipulatives** **Fill-In Cards**	**Write Solve and Graph Functions 1a-3b** **Manipulatives** **Fill-In Cards**	**Clues Guide 14** **Ratios: Part-to-Part 1-2** **Clues Guide 15** **Ratios: Part-to-Total 1-2** **Manipulatives** **Fill-In Cards**

See how these activities fit into the **Suggested Unit Pacing**.

Math Supports: Math Story Problems include interactive manipulatives. Use additional tools, such as those listed below, real objects or printable manipulatives to support student learning as needed.

Instructional Tools: Number Journal
Instructional Tools: Math Pack/ Numbers
Instructional Guides: Mathematics
L³ Skills: Math Skills

n2y Math Manipulatives Kit

- Circle Counters
- Foam Tiles
- Magnet Numbers
- MathLine®
- Foldable MathLine®
- Sorting Bowls

Additional Materials

Instructional Targets

Math Standards for Algebra — Creating Equations

- ***Create equations that describe numbers or relationships:*** Represent a real-world situation with an equation or inequality.

Math Standards for Algebra — Reasoning with Equations and Inequalities

- ***Solve equations and inequalities in one variable:*** Use equations to solve real-world problems when a part is unknown.

Math Standards for Algebra — Arithmetic with Polynomials and Rational Expressions

- ***Perform Arithmetic Operations on Polynomials:*** Add and subtract polynomials.

Instructional Routine

? or

Introduce	• Introduce this activity by asking a focus question. For example, ask, "What does a variable represent—a known number or an unknown number?" Discuss students' responses. • Review and discuss the different variables that can be used besides A, B and C. Discuss the steps in solving an equation and how to know which item to represent with the variable. Discuss the term polynomial and explain that some problems will have more than two terms. Use Clues Guide 13 as a visual. Refer back to Clues Guide 5 when working with polynomial Algebra Problems that have R as the unknown. Refer back to other Clues Guides as they relate to the operations and unknown variables in the scenarios. • Tell students that they will be writing and solving math equations and some will have more than two terms. Say, "Today, your job is to write and solve math equations." • Review the learning goals with students: **Levels 2-3: I will write and solve math equations.** **Level 1: I will count objects.**
Model	Choose Algebra Problems for modeling and practice based on students' needs and abilities. Algebra Problems include Manipulatives (interactive or printable). Additional Math Supports such as the Number Journal, Math Pack Number Cards or real objects may be used to support modeling and practice as appropriate. Use Manipulatives to illustrate scenarios, solve problems and check answers as needed. Call attention to a math equation. Point out that students will have to fill in the variables and signs of the operation used in these problems. • Model the steps of writing and solving a math equation. Emphasize the location of the information. For example, in "Write and Solve Equations 1a," point to the write-in spaces for the operation signs and say, "I need to fill in the operation. Since the problem asks, 'How many altogether?' I will need to add." Continue this process until the equation is written. • Solve the problem following Clues Guides 3, 4, 5, 6, 7, 11 or 12. Then check the answer by replacing the variable in the original equation with the answer. Model using Math Supports as needed. Call attention to a polynomial equation. Point out that numbers in the equation are represented by letters other than A, B and C. • Model the steps of writing and solving a polynomial equation. Emphasize that the variables used are the initials of the students' names, except for C, which still represents the total. For example, in "Write and Solve Polynomial Equations 1a," point to the first line next to Randy and say, "I need to write the variable R." (Point to the line as you type in R.) Do this for each variable. Read the sentence next to the R. Find the number in the sentence and place it in the equation. Continue this process until the polynomial equation is written. • Solve the problem following Clues Guide 13. Then check the answer by replacing the variable in the original equation with the answer. Model using Math Supports as needed.
Provide Practice	***Provide students with the appropriate Algebra Problems, Clues Guides 3, 4, 5, 6, 7, 11, 12 and 13, and Math Supports as needed.*** **Level 3:** Have students read, act out, write and solve the Algebra Problem equations. **Level 2:** Read and act out an Algebra Problem. Have the student illustrate/represent the Algebra Problem using desired Manipulatives. Have the student solve the problem and then complete the equation. **Level 1:** Read and act out an Algebra Problem. Have the student actively participate in counting the number or numbers using Manipulatives. Have the student use his or her active participation mode to select the number counted from a narrowed field or errorless choice(s). Assist the student in using his or her selection to complete the math equation. Interactive numbers or other Math Supports should be used as needed.
Review	• Revisit the learning goal by reviewing selected math equations with students. Point out how the numbers in the equations represent the numbers in the problems.

Check Understanding ?

Level 3: Can the student read, write and solve a math equation (using individual modifications)?
Level 2: Can the student use objects/manipulatives to represent and solve a math equation?
Level 1: Can the student participate in counting objects and choosing a number to complete an equation?

Lesson 25b - Algebra
Activity 2.1 - 2.3 - Analyzing Graphs

25b
Activity 2.1 - 2.3

Instructional Targets

Math Standards for Algebra — Creating Equations
- ***Building Blocks to Creating Equations:*** Graph positive and negative numbers in a real-world scenario.
- ***Create equations that describe numbers or relationships:*** Represent a real-world situation with an equation or inequality.
- ***Graph Equations on Coordinate Axes:*** Graph coordinate points of an equation.

Math Standards for Algebra — Reasoning with Equations and Inequalities
- ***Solve equations and inequalities in one variable:*** Use equations to solve real-world problems when a part is unknown.
- ***Represent and Solve Equations and Inequalities Graphically:*** Interpret the meaning of a point on the graph of a line.
- ***Summarize, represent and interpret data on a single count or measurement variable:*** Interpret data from a graph.

Instructional Routine

or

Introduce
- Introduce this activity by asking a focus question about graphs. For example ask, "What kind of graph can we use to show the results of a survey—a bar graph, a line graph or both?" Discuss students' responses.
- Review and discuss that graphs can be used to show information in many different ways. It is important to be able to read and understand information on a graph.
- Tell students that they will be writing and solving math equations from information on graphs and plotting points on a 4-quadrant graph. For example, say, "Your job is to write and solve equations based on information from a a graph and plot points on a 4-quadrant graph."
- Review the learning goals with students: **Levels 2-3: I will write and solve equations and plot points on a coordinate graph.**
  Level 1: I will count objects and select points on a graph.

Model

Display each graph and read the scenarios. Discuss the information on the graphs.
- Explain the steps needed to answer the questions below the graph.
- Display the first problem. Read the problem and emphasize the information needed to write the equation.
- Call attention to the math equations below each scenario. Explain how to find what each variable represents.
- Use the graph to determine the number of each. Encourage students to count and identify the numeral of the counted number. Place the numbers in the equation.
- Using Manipulatives count and solve for the unknown variable. Encourage students to count with you and help identify the target numeral.

Display the Four-Quadrant Graph. Discuss the information on the graph.
- Explain the process for graphing points on a coordinate graph. Point out the numbers on the x and the y axes as you trace each line to the intersecting point. Work backwards to find the coordinates for the buildings and place the numbers in the coordinate location.

Provide Practice

Provide students with the appropriate Algebra Problems, Clues Guides and Math Supports as needed.

Level 3: Have the student read, act out, write and solve the equations, and plot points on a coordinate graph.

Level 2: Read and act out an Algebra Problem. Have the student illustrate/represent the Algebra Problem using desired Manipulatives. Have the student solve the problem and then complete the equation and select points on a graph.

Level 1: Read and act out an Algebra Problem. Have the student actively participate in counting the number or numbers using Manipulatives. Have the student use his or her active participation mode to select the number counted from a narrowed field or errorless choice(s). Assist the student in using his or her selection to complete the equation. Interactive numbers or other Math Supports should be used as needed.

Review
- Revisit the learning goal by reviewing selected equations with students. Point out how the numbers in the equations represent the numbers in the problems. Revisit plotting coordinate points. Point out that the first number in the pair is on the horizontal axis and the second number is on the vertical axis.

Check Understanding

- **Level 3:** Can the student read, write and solve an equation, and plot points on a coordinate graph (using individual modifications)?
- **Level 2:** Can the student use objects/manipulatives to represent and solve an equation and select points on a graph?
- **Level 1:** Can the student participate in counting objects and choosing a number to complete an equation and points on a graph?

Lesson 25b - Algebra
Activity 3.1 - 3.2 - Writing, Solving and Graphing Equations & Inequalities

25b
Activity 3.1 - 3.2

Instructional Target

Math Standards for Algebra — Creating Equations

- ***Building Blocks to Creating Equations:*** Graph positive and negative numbers in a real-world scenario.
- ***Create equations that describe numbers or relationships:*** Represent a real-world situation with an equation or inequality.

Math Standards for Algebra — Reasoning with Equations and Inequalities

- ***Solve equations and inequalities in one variable:*** Use equations to solve real-world problems when a part is unknown. Use inequalities to solve real-world problems in which a part is unknown.
- ***Represent and Solve Equations and Inequalities Graphically:*** Interpret the meaning of a point on the graph of a line.

Instructional Routine

? or

Introduce	• Introduce this activity by asking a focus question about number lines. For example, ask, "On a number line, what number would be between 0 and 5—3, 4 or both?" Discuss students' responses. • Discuss that 3 is greater than 0, but less than 5, so it is between. Use both signs (> and <) to symbolize this. Review and discuss that number lines can be used to solve equations and inequalities. Remind students that an unknown number can be represented with many different letters. • Tell students that they will be writing math equations and inequalities and using a number line to solve and graph the answer. For example, say, "Your job is to write, solve and graph equations and inequalities." • Review the learning goals with students: **Levels 2-3: I will write, solve and graph equations and inequalities on a number line.** **Level 1: I will count objects and select points on a number line.**
Model	Choose Algebra Problems for modeling and practice based on students' needs and abilities. Algebra Problems include Manipulatives (interactive or printable). Additional Math Supports such as the Number Journal, Math Pack Number Cards or real objects may be used to support modeling and practice as appropriate. • Call attention to a math equation and inequality. Point out that numbers in the equations are represented by 'n'. Model the steps of writing a math equation. Emphasize the location of the information and that n is rewritten because it represents the unknown value. Model how to graph the point. Then model the steps for writing a math inequality. For example in "Write, Solve and Graph Inequalities 1a," point to the blank under n and say, "I need to fill in this space with an 'n' because it is the unknown." Then fill the next blank space with the number specified in the top line of the scenario. Locate the this number on the number line and place the open-point ray with the open point over the number. The arrow is pointing in the less than direction. Discuss with students that any number in that direction would make the inequality true. Then check the answer by placing each guess on the number line and in the inequality. Model using Math Supports as needed. Read the algebra scenario and stop at the first number. Model counting the manipulatives for the first number in the scenario. Then select the correct numeral for the number of manipulatives counted. Repeat for each number in the scenario, as well as each answer to the scenario.
Provide Practice	***Provide students with the appropriate Algebra Problems and Math Supports as needed.*** **Level 3:** Have the student read, act out, write, solve and graph the equations and inequalities. **Level 2:** Read and act out an Algebra Problem. Have the student illustrate/represent the Algebra Problem using desired Manipulatives. Have the student solve the problem and then complete the equation and inequality and select points on a number line. **Level 1:** Read and act out an Algebra Problem. Have the student actively participate in counting the number or numbers using Manipulatives. Have the student use his or her active participation mode to select the number counted from a narrowed field or errorless choice(s). Assist the student in using his or her selection to complete the equation or inequality and select points. Interactive numbers or other Math Supports should be used as needed.
Review	• Revisit the learning goal by reviewing selected equations and inequalities with students.

Check Understanding ?

Level 3: Can the student write, solve and graph an equation and inequality on a number line (using individual modifications)?
Level 2: Can the student use objects/manipulatives to represent and solve an equation and select points on a number line?
Level 1: Can the student participate in counting objects and choosing a number to complete an equation and points on a number line?

Lesson 25b - Algebra
Activity 4.1 - 4.3 - Writing and Graphing Functions

25b
Activity 4.1 - 4.3

Instructional Target

Math Standards for Algebra — Creating Equations
- ***Graph Equations on Coordinate Axes:*** Graph coordinate points of an equation.

Math Standards for Algebra — Reasoning with Equations and Inequalities
- ***Represent and Solve Equations and Inequalities Graphically:*** Interpret the meaning of a point on the graph of a line.

Math Standards for Functions: Interpreting and Building Functions
- ***Interpret functions that arise in applications in terms of the context:*** Use functions to solve real-world problems. Describe the rate of change of a function using words and numbers.
- ***Build a function that models a relationship between two quantities:*** Create a function that represents the relationship between two quantities. Construct a graph that represents a defined change in a function.

Math Standards for Statistics and Probability: Interpreting Categorical and Quantitative Data
- ***Interpret linear models:*** Describe a rate of change based on a line on a graph.

Instructional Routine

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Introduce	• Introduce this activity by asking a focus question about coordinate points. For example, ask, "How many numbers do you need to graph a point on a coordinate graph—1 or 2?" Discuss students' responses. • Discuss that a number is needed on each axes. One number tells how many spaces to move either left or right, and the other tells how many to move up or down. These are called coordinate pairs. Remind students that an unknown number can be represented with many different letters. Explain that we will be using x and y for functions. The x represents the horizontal line and the y represents the vertical line. • Tell students that they will be filling in a table that will give them several coordinate pairs to graph and form a line. For example, say, "Your job is to solve a real-world problem with a function table." • Review the learning goals with students: **Levels 2-3: I will solve a problem using a function table.** **Level 1: I will count objects and select points of a function.**
Model	Choose function scenarios for modeling and practice based on students' needs and abilities. Algebra Problems include Manipulatives (interactive or printable). Additional Math Supports such as the Number Journal, Math Pack Number Cards or real objects may be used to support modeling and practice as appropriate. • Call attention to the first function table and graph. Point out that the problem can be written as a function and graph. • Point to the "Rule" and read it to the students. Then point to the "Points" and tell them that once they complete the entire set of coordinates, they will use these to graph the function. • Point to the 1st x column and model the steps of completing the function table. Emphasize the pattern that is forming. For example, point to the numbers in the 1st x column, read out the numbers and say, "Each time, the number increases by ____." Model filling in the numbers in the blank spaces. • Point to the x column under "Rule" and model filling in the blank spaces with numbers. • Point to the y column under "Rule" and model filling in the blank spaces. Model completing the "Rule" with each x to find each y. • Point to the 2nd y column and tell students to fill in the blank spaces in this column with the number they got for y under "Rule". • Point to the "Point" and tell students that we have to fill in the y for every x so we know the coordinate points to complete the graph below. • Model answering the questions, graphing the coordinate points, drawing the line and predicting the answer to the last question based on the pattern. Model using Math Supports as needed. • Use Manipulatives to illustrate the scenario, solve the problem and check the answer as needed. Read the scenarios and Model counting with Manipulatives as needed.
Provide Practice	***Provide students with the appropriate function scenarios and Math Supports as needed.*** **Level 3:** Have the student read, act out, write, solve a problem using a function table. **Level 2:** Read and act out an Algebra problem. Have the student illustrate/represent the Algebra Problem using desired Manipulatives. With assistance, have the student complete the table and solve the problem. **Level 1:** Read and act out an Algebra Problem. Have the student actively participate in counting the number or numbers using Manipulatives. Have the student use his or her active participation mode to select the number counted from a narrowed field or errorless choice(s). Assist the student in using his or her selection to complete the function table. Interactive numbers or other Math Supports should be used as needed.
Review	• Revisit the learning goal by reviewing selected functions problems with students.

Check Understanding ?

Level 3: Can the student write, and solve a function table (using individual modifications)?
Level 2: Can the student use objects/manipulatives to represent and complete a function table?
Level 1: Can the student participate in counting objects and choosing a number to complete a function table?

Activity 5.1 - 5.2 - Writing Ratios: Part-to-Part and Part-to-Total

Instructional Target

Math Standards for Life Skills for Ratio and Proportional Relationships

- ***Life Skills for Ratio and Proportional Relationships:*** Identify and write a ratio to compare part-to-part and part-to-whole relationships.

Instructional Routine

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Introduce

- Introduce this activity by asking a focus question about ratios and relationships. For example, ask, "How many wheels does every bicycle have—1 or 2?" Discuss students' responses.
- Discuss that a bicycle and the number of wheels it has represents a part-to-part ratio. For every 1 bicycle, there are 2 wheels. This is a ratio of 1 bicycle to 2 wheels. A ratio compares two numbers and describes a pattern. If there are two bicycles, then there are 4 wheels. Each time another bicycle is added, 2 more wheels are added. Refer to Clues Guide 14 to further explain part-to-part ratios.
- Explain that there is another type of ratio called a part-to-total ratio. A part-to-total ratio compares part of the total to the overall total. Tell students that for every pack of markers, there is 1 red marker. In every pack there are 8 markers. The part-to-total ratio of red markers to total markers is 1 to 8. Refer to Clues Guide 15 to further explain part-to-total ratios.
- Tell students that they will modeling, writing and matching ratios to describe a real-life relationship. For example, say, "Your job is to model and write a ratio to describe a relationship."
- Review the learning goals with students: **Levels 3-2: I will model and write a ratio to describe a relationship.**
  Level 1: I will match objects that represent a relationship.

Model

Choose ratio scenarios for modeling and practice based on students' needs and abilities.

- Read the part-to-part ratio scenario. Think aloud while modeling the steps of selecting the appropriate number of manipulatives for each part of the ratio. Then model writing the number for each part of the ratio.
- Read the part-to-total ratio scenario. Think aloud while modeling the steps of selecting the appropriate number of manipulatives for the part and the total of the ratio. Then model writing the number for the part and the total of the ratio.
- Model using Clues Guides 14 and 15 and math supports as needed.

Provide Practice

Provide students with Clues Guides 14 and 15, appropriate real-world Math Stories, Manipulatives/lesson objects and the Math Supports as needed.

Level 3: Have the student identify and write a ratio to describe a part-to-part and part-to-total relationship.

Level 2: Have the student model a ratio to describe a part-to-part and part-to-total relationship.

Level 1: Have the student match objects represented in part-to-part and part-to-total relationships. Have the student use his or her active participation mode to select the number counted from a narrowed field or errorless choice(s).

Review

- Revisit the learning goal by reviewing selected ratio problems with students.

Check Understanding ?

Level 3: Can the student identify and write a ratio to describe a part-to-part and part-to-total relationship (using individual modifications)?

Level 2: Can the student model a ratio to describe a part-to-part and part-to-total relationship?

Level 1: Can the student participate in counting objects and matching objects represented in a relationship?

Instructional Targets

Social Studies Standards for U.S. History
- ***U.S. History:*** Identify the cause or result of a historical event or period of time.

Social Studies Standards for World History
- ***World History:*** Identify the cause or result of a historical event or period of time.

Reading Standards for Informational Text
- ***Range and Level of Text Complexity:*** Read and use grade level and age-appropriate informational materials, including periodicals, articles, social studies and technical texts that are adapted to student reading level.
- ***Craft and Structure:*** Identify how sentences, paragraphs, chapters or features support an informational text's purpose. Identify the author's purpose or point of view in an informational text and/or compare it to another point of view. Evaluate ways authors support their claim and if their claim is fact or opinion.

Differentiated Tasks

Level 3 Students will...
- Describe the cause and result of a historical event or period of time and any effects that the event or time still has on life today.
- Independently read informational materials, including social studies and technical texts that have been adapted to student reading level.
- Identify and describe sentences, paragraph, chapters or features that support an informational text's purpose.
- Identify words, phrases or features that support the author's intent or purpose.
- Identify an author's argument and describe how evidence supports an argument.

Level 2 Students will...
- Identify the causes and effects of a historical event.
- Read supported and shared informational materials, including social studies and technical texts that have been adapted to student reading level.
- Identify sentences, paragraphs, chapters or features that support an informational text's purpose.
- Identify the intent of the text as to inform or to persuade.
- Select a sentence that supports an author's claim.

Level 1 Students will...
- Identify a particular event in history as something that happened in the past.
- Actively participate in supported reading of informational materials, including social studies and technical texts that have been adapted to student ability level.
- Select a text feature that supports the purpose from a narrowed field or errorless choice(s).
- Identify a picture representing the intent of the text from a narrowed field or errorless choice(s).
- Select a sentence that supports an author's claim from a narrowed field or errorless choice(s).

Topic Connection

Throughout this unit, students learn about scientific inquiry and famous scientists. In this lesson, students will learn about additional scientists and read an informational article to learn about different types of scientists and what they study.

Topic Words

data	science	solve
problem*	scientist	

History Words

after	long ago	time
before	past	
historical event	sequence	

* Power Words

Lesson at a Glance

	Activity 1	Activity 2
Instructional Activities	Find the Text Features	Introduce Trading Cards
See how these activities fit into the **Suggested Unit Pacing**.		
ULS Materials and Resources	**Article: "Types of Scientists"** (Advanced, Higher, Regular) **Communication Board** **Text Features Chart** (Level 3, Level 2, Level 1) **Fill-In Cards and Fill-In Picture/Word Cards**	**Trading Card Posters** (Same as Trading Cards) **Trading Cards** Mario Molina Tu Youyou Fred Begay Rosalind Franklin Lonnie Johnson Rachel Carson
Additional Materials		

Activity 1 - Find the Text Features

Instructional Targets

Reading Standards for Informational Text

- ***Range and Level of Text Complexity:*** Read and use grade level and age-appropriate informational materials, including periodicals, articles, social studies and technical texts that are adapted to student reading level.
- ***Craft and Structure:*** Identify how sentences, paragraphs, chapters or features support an informational text's purpose. Identify the author's purpose or point of view in an informational text and/or compare it to another point of view. Evaluate ways authors support their claim and if their claim is fact or opinion.

Instructional Routine

Introduce	• Introduce the activity by asking a focus question about scientists. For example, ask, "What can we do to learn new information about scientists—read an article or make a schedule?" Discuss students' responses. • Explain to students that scientists study many different types of science. For example, they can study animals, plants, energy, chemicals or matter. • Tell students they will be reading an informational text about different types of scientists. Tell students that their job is to identify why the article was written. • Review the learning goal with students: **I will identify why the article was written.**
Model	***Display the Article: "Types of Scientists." The article is presented in advanced, higher and regular formats. Choose the appropriate text format based on each student's individual skills and abilities.*** • Display the Text Features Chart. The chart is provided in three levels (Level 3, Level 2 and Level 1). Display the level that meets the needs of the majority of students. Read and explain the information in the chart. For example, say, "The purpose is the reason why the article is written. An article can be written to give information or to persuade someone by giving an opinion." • Model identifying the text features as you read the article. For example, say, "I see 'ecologist' is underlined. This tells me that this is an important detail." • Model how to complete the Text Features Chart by referring to the article text. For example, say, "The article gives me real information about different types of scientists and what they study. This tells me that the purpose of this article is to give information."
Provide Practice	***Provide students with the Article: "Types of Scientists" and the Text Features Chart.*** **Level 3:** Have the student independently identify the purpose of the "Types of Scientists" article and identify, locate and describe a sentence that supports the purpose by completing the Text Features Chart. **Level 2:** With support, have the student identify the purpose of the "Types of Scientists" article and identify and locate a sentence that supports the purpose by completing the Text Features Chart. Picture supports such as the Communication Board or article illustrations may be used. **Level 1:** Have the student identify a picture that represents the purpose of the "Types of Scientists" article and select a text feature that supports the purpose by participating in reading the article and selecting answers to complete the Text Features Chart.
Review	• Review the student learning goal by discussing the reasons why informational text is written: to give information or to persuade someone.

Check Understanding

- **Level 3:** Can the student independently identify the purpose of the article and identify, locate and describe a sentence that supports the purpose?
- **Level 2:** Can the student use appropriate supports to identify the purpose of the article and identify and locate a sentence that supports the purpose?
- **Level 1:** Can the student actively participate in selecting a picture that represents the purpose of the article and selecting a text feature that supports the purpose?

Instructional Targets

Social Studies Standards for U.S. History

- ***U.S. History:*** Identify the cause or result of a historical event or period of time.

Social Studies Standards for World History

- ***World History:*** Identify the cause or result of a historical event or period of time.

Standards for Informational Text

- ***Range and Level of Text Complexity:*** Read and use grade level and age-appropriate informational materials, including social studies and technical texts that are adapted to student reading level.

Instructional Routine

Introduce	• Introduce the activity by asking a focus question about history. For example, ask, "What do we call events that happened yesterday—the past or the future?" Discuss students' responses. • Explain things that happen in the past can make a difference today. For example, "Tu Youyou found a treatment for malaria from plants. Today, many people use this medicine to heal their body when they are sick with malaria." • Display the larger Trading Card Posters in the classroom and use them to introduce and discuss the famous scientists shown. • Tell students that their job is to learn about the famous scientists and how their inventions or discoveries help us today. • Review student learning goal: **I will tell others about famous scientists and how their work helps us today.**
Model	• Display the first Trading Card. • Read the name of the famous scientist. Present the information on the card to students. • Discuss with students the famous scientists and how his or her work helps us today. Point out that the scientist used the scientific method. • Point out any interesting information about the scientist.
Provide Practice	***Provide students with Trading Cards.*** **Level 3:** Have student independently read information on three Trading Cards. Encourage student to share how the scientists' work helps people today. **Level 2:** Have student read information on two Trading Cards using support. Ask student to identify something the scientist did that helps us today. Provide answer options as needed. **Level 1:** Have student participate in reading information on one Trading Card using supports. Have student use active response mode to select something the scientist did that helps us today from a narrowed field or errorless choice(s). Consider options for collecting and trading cards.
Review	• Review the student learning goal by reviewing the information on the Trading Cards and their effects on life today. • Encourage students to discuss other scientific work that affects us today.

Check Understanding

- **Level 3:** Can the student independently read information on a Trading Card? Can the student describe how the scientists' work helps people today?
- **Level 2:** Can the student use appropriate supports to read information on a Trading Card? Can the student identify something the scientist did that helps us today? Answer options can be provided.
- **Level 1:** Can the student actively participate in supported reading of information? Can the student select something the scientist did that helps us today from a narrowed field or errorless choice(s)?

Lesson 27 - Oral Report
Scientists

27

Instructional Targets

Standards for Speaking and Listening

- ***Presentation of Knowledge and Ideas:*** Present information in an organized manner appropriate to a task, audience or situation. Integrate media to enhance a presentation. Adapt communication, using formal or informal language to communicate effectively in a variety of contexts and tasks.

Standards for Writing

- ***Text Types and Purposes:*** Generate paragraphs to analyze a topic, including supporting facts and evidence. Generate informative paragraphs, including a topic sentence, supporting facts or details and a concluding sentence.

Standards for Language

- ***Conventions of Standard English:*** Apply correct capitalization and punctuation in sentences. Use correct spelling in writing sentences.
- ***Production and Distribution of Writing:*** Use technology, including the internet, to compose a paragraph.

Differentiated Tasks

Level 3 Students will...

- Communicate on a topic specific to the purpose and audience.
- Select and use multimedia components to enhance a presentation.
- Communicate by using formal or informal language specific to the task or topic.
- Create one or more paragraphs expressing an analysis of a topic or text with supporting reasons and clear evidence.
- Create one or more paragraphs, including a topic sentence with supporting facts, details and a concluding sentence.
- Demonstrate conventions of written language, including appropriate capitalization and ending punctuation.
- Demonstrate use of common spelling conventions in written language.
- Select and use digital tools, including the internet, to generate a paragraph.

Level 2 Students will...

- Communicate on a topic specific to the purpose and audience, using picture supports.
- With support, add multimedia components to a presentation.
- Effectively communicate in a variety of contexts and tasks.
- Select pictures with text to express an opinion with supporting reasons.
- Select pictures with text to create a written document containing factual sentences on a topic.
- Identify beginning capital letters and ending punctuation in a written sentence.
- Spell familiar words with letter-sound matches.
- With support, use digital tools, including the internet, to generate multiple sentences.

Level 1 Students will...

- Communicate basic information on a topic or experience using communication technology and picture supports.
- Participate in creating multimedia components to support a presentation.
- Communicate by using supported modes of expression.
- Given a narrowed field or errorless choice(s) of pictures, make a selection of pictures to communicate an opinion.
- Given a narrowed field or errorless choice(s) of pictures, make a selection to communicate facts on a given topic.
- Locate capital letters and ending punctuation in a sentence.
- With support, students will choose a correctly spelled word (may be errorless choice).
- With support and adaptive tools, use digital tools to create a sentence.

Topic Connection

Throughout this unit, students learn about science, the scientific method and famous scientists. In this lesson, students will generate a report on what scientists study and Stephen Hawking.

Topic Words

experiment	problem*	scientific method
guess*	science	scientist

Literacy Words

audience	fact	present
communicate	oral report	topic
edit	practice	visual aid

* Power Words

Benchmark Assessments

- Writing: Writing Probe
- Emerging Skills: Early Emerging Writing Rubric

Lesson at a Glance

	Activity 1	Activity 2	Activity 3	Activity 4
Instructional Activities	Write Report	Add Multimedia Components	Edit Report and Practice	Give Oral Report
	See how these activities fit into the **Suggested Unit Pacing** .			
ULS Materials and Resources	**Sample Reports:** *Scientists* *Stephen Hawking* **Oral Report Planner** **Oral Report Template** (Level 3, Level 2, Level 1) **Picture/Word Cards** scientist invent animals plants Stephen Hawking problem experiment space	**Completed Oral Report Template** **Sample Reports:** *Scientists* *Stephen Hawking*	**Completed Oral Report Template** **Sample Reports:** *Scientists* *Stephen Hawking*	**Completed Oral Report Template** **Standards Connection A** **Standards Connection B**
	SymbolStix PRIME			
Additional Materials				

Instructional Target

Standards for Writing

- ***Text Types and Purposes:*** Generate paragraphs to analyze a topic, including supporting facts and evidence. Generate informative paragraphs, including a topic sentence, supporting facts or details and a concluding sentence.
- ***Production and Distribution of Writing:*** Use technology, including the internet, to compose a paragraph.

Instructional Routine

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Introduce	• Introduce the activity by asking a focus question about writing a report. For example, ask, "What can we write to tell others about scientists—report or schedule?" • Discuss with students that a report is a telling of facts about a topic. An oral report means that the writer speaks and reads the report out loud to an audience. • Explain to students that they will be preparing an oral report on Scientists and Stephen Hawking. • Tell students they will brainstorm different ideas for the oral report. • Review the learning goal with students: **I will choose a topic and write an oral report.**
Model	• Choose a sample report to display. Review and discuss how information on the report was selected. • Model brainstorming by asking questions. Ask, "What are some facts people should know about this topic?" or "What could we tell others about this topic in 2-3 sentences?" Use the Oral Report Planner to capture information about the topic. • Determine which is the most pertinent and factual information and select 2-3 pieces of information to be used in the report. Ask, "Why is this topic interesting?" and record answers in the Oral Report Planner. • Display the Oral Report Template. Three levels of the template are provided: Level 3 (text only), Level 2 (single symbol-supported) and Level 1 (symbol-supported). Choose one of the topics and display the Oral Report Template in the level that meets a majority of the students' needs. • Demonstrate how to take answers from the Oral Report Planner and create complete sentences. • Fill in the provided template with complete sentences.
Provide Practice	***Provide students with the appropriate Oral Report Template, Picture/Word Cards, Standards Connection and any alternative forms of writing needed.*** **Level 3:** Have the student brainstorm and write a paragraph with a topic sentence, supporting facts, details and a concluding sentence. **Level 2:** Have the student brainstorm and use pictures and/or other supports to write sentences about a topic with support. **Level 1:** Have the student choose pictures to communicate/dictate information about a topic from a narrowed field or errorless choice(s).
Review	• Review the learning goal by discussing the process of choosing and writing on a topic. • Review oral reports and ensure there is sufficient and correct details.

Check Understanding ?

- **Level 3:** Can the student write a paragraph with a topic sentence, supporting facts, details and a concluding sentence?
- **Level 2:** Can the student formulate sentences about a topic using picture supports?
- **Level 1:** Can the student choose pictures to communicate/dictate information about a topic?

Activity 2 - Add Multimedia Components

Instructional Target

Standards for Speaking and Listening

- ***Presentation of Knowledge and Ideas:*** Integrate media to enhance a presentation.

Instructional Routine

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Introduce	• Introduce the activity by asking a focus question about multimedia. For example, ask, "What can we do to make our oral report more interesting—add pictures or do nothing?" • Discuss how visual aids/pictures play an important role in keeping the audience's attention, as well as providing additional information on the topic. • Tell students that they will be adding visual aids or pictures to the oral reports. • Review the learning goal with students: **I will choose and create a visual aid using technology.**
Model	• Display a Sample Report. Ask, "What kind of pictures or information would make a good visual aid to go along with this report? What would make this report more interesting for the audience?" • Create a list of possible ideas. Review the ideas and explain why some may work better than others. • Review sources in which to gather various forms of multimedia, such as the internet, books, magazines, photographs, SymbolStix PRIME or even short videos. • Explain the various formats to display the information including posters and multimedia formats such as presentation software or websites. • Using the Sample Report, select one format and model the creation of the presentation incorporating gathered multimedia.
Provide Practice	**Level 3:** Have the student choose a display format for his or her oral report. Have the student find pictures or appropriate visual aids. Have the student create his or her visual display. **Level 2:** Have the student choose a display format for his or her oral report. With support, have the student choose visual aids and create their oral report. **Level 1:** Have the student choose a display format for his or her oral report. Have the student choose visual aids from a narrowed field or errorless choice(s) and participate in the creation of their visual display. Note: Encourage students to use a variety of multimedia formats to create a visual aid.
Review	• Review the learning goal by discussing students' visual aids. • Discuss selected visual aids with students. Are the visual aids appropriate? Do they improve the oral report?

Check Understanding ?

- **Level 3:** Can the student select a display format? Can the student locate visual aids? Can the student create a multimedia display?
- **Level 2:** Can the student select a display format? Can the student choose visual aids? Can the student create a multimedia display with support?
- **Level 1:** Can the student choose a display format? Can the student choose a visual aid from a narrowed field or errorless choice(s)? Can the student participate in the creation of a multimedia display?

Instructional Target

Standards for Language

- ***Conventions of Standard English:*** Apply correct capitalization and punctuation in sentences. Use correct spelling in writing sentences.

Instructional Routine

Introduce	• Introduce the activity by asking a focus question about editing. For example, ask, "What should every sentence start with—a capital letter or a question mark?" • Review key vocabulary: present, communicate, edit, practice and audience. • Remind students that an oral report is given or presented to an audience. • Explain that in order to be presented, the report needs to be edited and practiced. The report needs to be free of mistakes so it is easy to read. • Tell students that once editing is complete, they will give an oral report. • Review the learning goal with students: **I will edit my writing and practice reading my report.**
Model	• Display a Sample Report with some errors (missing periods, incomplete sentences). • Discuss the importance of punctuation. • Review the Sample Report and make corrections. • Display the following punctuation marks: period, comma, question mark, exclamation point. Ask, "What does a period tell the reader to do?" Repeat this question with a comma, a question mark and an exclamation point. • Explain to students that once the report is error free, it is time to practice presenting the report. • Model giving the presentation.
Provide Practice	***Provide the student with his or her completed Oral Report Template, including any multimedia used and any communication aids needed.*** **Level 3:** Have the student edit the report for capitalization, punctuation, spelling and complete sentences. Have the student practice giving his or her report. **Level 2:** Have the student identify capital letters and ending punctuation. Have the student spell familiar words with letter-sound matches. Have the student practice giving his or her report. **Level 1:** Have the student participate in the editing process by identifying capital letters, punctuation and correctly spelled words. Have the student practice communicating basic information on the topic using his or her communication mode, picture supports and any other supports needed.
Review	• Review the learning goal by asking students to discuss the process. • Review the students' oral reports. • Check for errors in punctuation. • Have the student read the oral report for practice.

Check Understanding

Level 3: Can the student edit their oral report (writing)? Can the student practice giving an oral report?

Level 2: Can the student identify capital letters and punctuation in a report? Can the student spell familiar words in a report?Can the student practice giving an oral report with support?

Level 1: Can the student locate capital letters, ending punctuation and correctly spelled words with support? Can the student practice communicating basic information using their active communication mode?

Instructional Targets

Standards for Speaking and Listening

- ***Presentation of Knowledge and Ideas:*** Present information in an organized manner appropriate to a task, audience or situation. Integrate media to enhance a presentation. Adapt communication, using formal or informal language to communicate effectively in a variety of contexts and tasks.

Instructional Routine

? or

Introduce	• Introduce the activity by asking a focus question about presenting. For example, ask, "What should you do when presenting a report—speak clearly or speak quickly?" Discuss students' responses. • Review with students that an oral report is a report with facts presented to a person or a group. • Tell students that they will be giving their oral report and listening to other students' reports. • Remind students that they will also be using their visual aids. • Review the learning goal with students: **I will give an oral report.**
Model	• Model presenting an oral report with use of visual aids. • Demonstrate good and bad characteristics of presenting (volume, speed, body movement, etc.).
Provide Practice	**Level 3:** Have the student present an oral report by reading and using his or her visual aid. **Level 2:** Have the student present an oral report using picture supported written report and visual aids. **Level 1:** Have the student communicate basic information about a topic using their communication mode and picture supports.
Review	• Review the learning goal by asking students to describe their oral report experience. • After all presentations are done, review what any students may have learned from an oral report. • Ask students what they liked best about the act of presenting, and what they need to work on.
Extend	• To extend this lesson, choose Standards Connection A or B. Use Standards Connection A to identify and research a new topic. Students will find and list resources and create an organized paragraph with information gathered from research. Use Standards Connection B to identify the speaker's purpose when giving an oral report.

Check Understanding ?

- **Level 3:** Can the student present an oral report? Can the student use the prepared visual aid?
- **Level 2:** Can the student communicate information about a topic? Can the student use a visual aid?
- **Level 1:** Can the student communicate basic information about a topic using their preferred communication mode? Can the student use technology and picture supports to participate in giving an oral report?

Instructional Targets

Standards of Writing

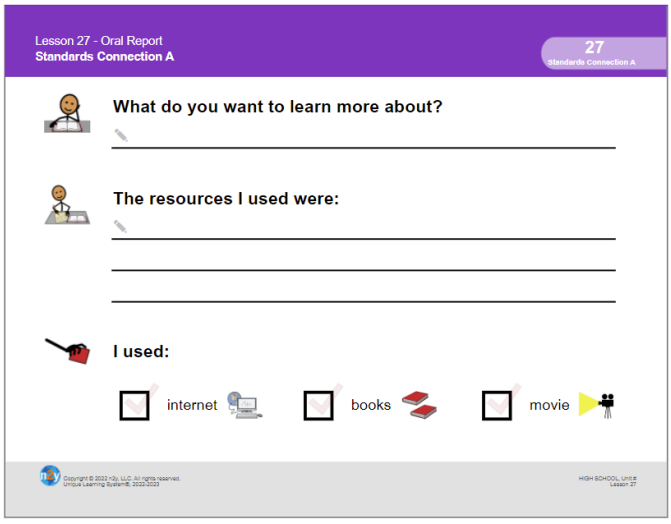
- ***Research to Build Knowledge:*** Research and gather information from (adapted) literary or informational materials to answer a question or solve a problem. Generate a written text to summarize information from multiple sources; cite sources.

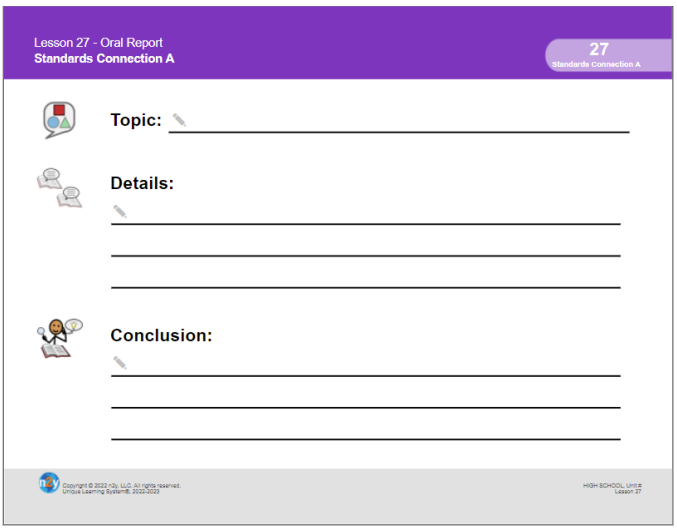
Differentiated Tasks

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• Research and gather information from multiple print and digital sources to answer a question or solve a problem. • Generate a report of one or more paragraphs to summarize information and list sources.	• Collect information from print or digital sources to answer a question or solve a problem. • Generate multiple sentences to summarize information.	• Select a picture from a narrowed field or errorless choice(s) to contribute to a shared research. • Select a picture from a narrowed field or errorless choice(s) to contribute to a shared writing task.

Use the Standards Connection to help students identify a research topic of interest, list resources and generate an organized paragraph with researched information. The book reports and the unit chapter can help students choose a topic.

Refer students to this age-appropriate search engine: https://www.kiddle.co/





Instructional Target

Standards for Speaking and Listening

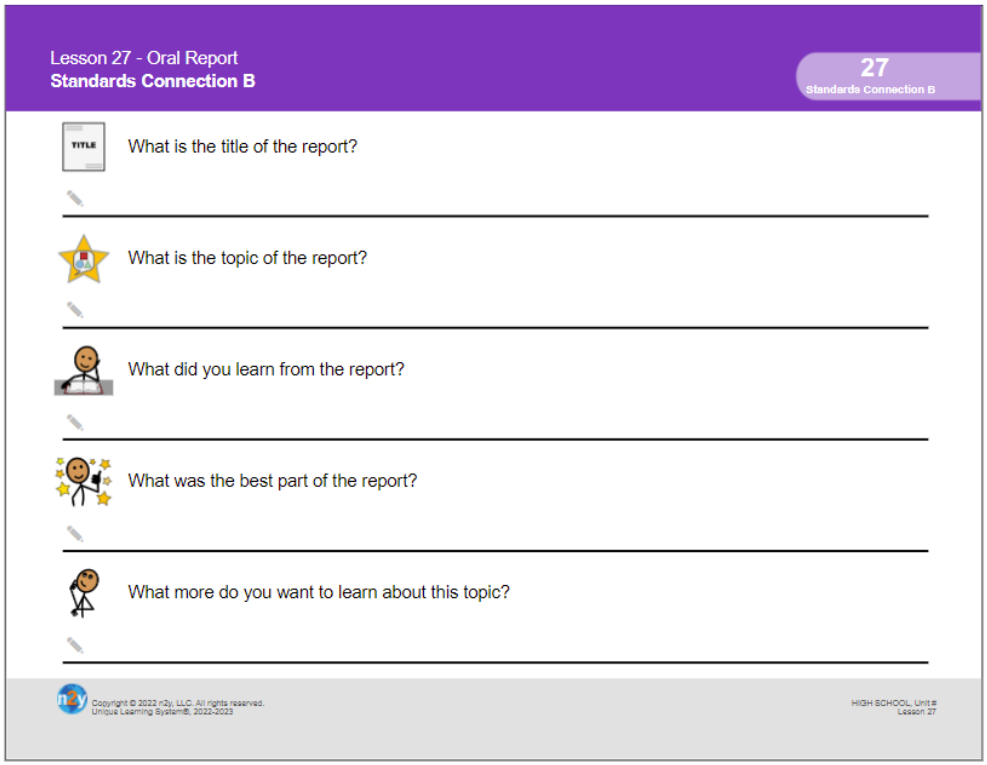
- ***Comprehension and Collaboration:*** Identify a speaker's purpose and main ideas.

Differentiated Tasks

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• Summarize information from a speaker's topic.	• Give a description of information, using picture supports from a speaker's topic.	• Respond to questions related to a speaker's topic, using picture supports and communication technologies.

The Standards for Speaking and Listening are a means of building critical expressive and receptive communication skills. This extended activity provides an opportunity for students to practice active listening. Incorporate augmentative systems (low tech and high tech) to encourage self-generated sentences.

Have students use this chart to summarize information about the report.



Lesson 27 - Oral Report
Standards Connection B

27
Standards Connection B

TITLE What is the title of the report?

What is the topic of the report?

What did you learn from the report?

What was the best part of the report?

What more do you want to learn about this topic?

HIGH SCHOOL, Unit #
Lesson 27

Lesson 28 - Science Experiment
Let's Have a Science Fair

28

Instructional Targets

Standards for Scientific Inquiry

- Identify questions to guide scientific investigations.
- Conduct simple scientific investigations.
- Use tools to gather data and information.
- Analyze and interpret data.
- Communicate and support findings.

Differentiated Tasks

Level 3 Students will...	Level 2 Students will...	Level 1 Students will...
• Follow steps of a scientific process related to grades 9-12 science topics.	• With support, follow steps of a scientific process related to grades 9-12 science topics.	• Actively participate in a scientific process related to grades 9-12 science topics.

Topic Connection

Throughout this unit, students are studying science and scientists in preparation for participating in a science fair. In this lesson, students will choose a science fair project and follow the steps of the scientific method to complete the experiment. Ten experiments are available for use within this lesson, or students can choose their own experiment.

Topic Words

conclusion	guess*	scientific method
data	question*	scientist
experiment	science	solve

Science Words

ask*	experiment	observe
conclusion	guess*	question*
data	hypothesis	scientific process

* Power Words

Lesson at a Glance

	Activity 1	Activity 2	Activity 3	Activity 4
Instructional Activities	Ask a Question	Make a Guess / Hypothesis	Conduct the Experiment	Review and Share Findings
See how these activities fit into the **Suggested Unit Pacing**.				
ULS Materials and Resources	**Scientific Method Poster** **My Science Fair Project, Step 1** (Level 3, Level 2, Level 1) **Experiment Step 1** For chosen experiment(s)	**Scientific Method Poster** **My Science Fair Project, Step 2** (Level 3, Level 2, Level 1) **Experiment Step 2** For chosen experiment(s)	**Scientific Method Poster** **My Science Fair Project, Steps 3 & 4** (Level 3, Level 2, Level 1) **Experiment Steps 3 & 4** For chosen experiment(s) **Picture/Word Cards** Will vary depending on chosen experiment	**Scientific Method Poster** **My Science Fair Project, Steps 5** (Level 3, Level 2, Level 1) **Experiment Steps 4 & 5** For chosen experiment(s) **My Science Fair Poster** **Participation Certificate** **Picture/Word Cards** Will vary depending on chosen experiment.
	Instructional Tools: Scientific Inquiry Processes			
Additional Materials			**Experiment Materials** Materials will vary depending on chosen experiment	

Instructional Targets

Standards for Scientific Inquiry
- Identify questions to guide scientific investigations.
- Communicate and support findings.

Instructional Routine

Introduce	• Introduce the activity by asking a focus question. For example, ask, "Where would I go if I wanted to see many different science experiments—a fishing pond or a science fair?" Discuss students' responses. • Explain to students that a science fair is an event where different science projects are displayed. Visitors walk through the science fair to look at the displays. Sometimes, judges look at the projects and hand out awards. • Tell students they will be participating in a science fair. Say, "Today, you have two jobs. First you will choose a topic for your science fair project. Then you will complete Step 1 in the scientific method: Ask a Question." • Review the learning goal with students: **I will choose a topic for my science fair project. I will ask a question about my topic.**
Model	• Model choosing a topic for a science fair project. For example, say, "When choosing a science fair project, it is important to choose a topic that I like or am interested in. I like dogs, baseball and potato chips. I really like to eat potato chips. I would like to do a science project about potato chips." • Display and read the Scientific Method Poster with students. Then say, "The first step in the scientific method is to ask a question. To come up with a question, I need to think about what I know and what I want to know about my topic, potato chips. I know potato chips come in many different flavors and all the flavors taste different. I wonder if all the flavors are salty. I will ask the question: Are all potato chips salty?" • Display the experiment pages for the provided Tastes Experiment and read Step 1 aloud, and/or model recording the question on the My Science Fair Project activity page.
Provide Practice	***Talk with students about topics they may want to investigate for their science fair project. Then provide each student with the appropriately leveled My Science Fair Project activity. Students who choose to complete one of the provided experiments can complete the experiment pages instead of the My Science Fair Project activity page.*** **Level 3:** Have the student choose a topic for his or her science fair project. Then, have the student ask and record a question. Provide a prompt, such as, "What would you like to learn about? What do you know about (topic)?" **Level 2:** Have the student choose a topic for his or her science fair project and then ask and record a question with support. Visual supports may include the Picture/Word Cards for the experiments provided in this lesson. **Level 1:** Have the student choose a topic for his or her science fair project by making a selection from a narrowed field or errorless choice(s). Then have the student use his or her active response mode to participate in asking and recording a question.
Review	• Discuss the topics and questions students chose for their science fair projects. Then choose and share a date for the science fair.

Check Understanding

Level 3: Can the student select a topic and ask a question for their science fair project?

Level 2: Can the student select a topic and ask a question for their science fair project? How?

Level 1: Can the student choose a topic for his or her science fair project by making a selection? Can the student actively participate in asking and recording a question? How?

Instructional Target

Standards for Scientific Inquiry
- Identify questions to guide scientific investigations.

Instructional Routine

Introduce	• Introduce the activity by asking a focus question about the scientific method. For example ask, "What is the first step in the scientific method—organize data or ask a question?" Discuss students' responses. • Continue discussion by reviewing the Scientific Method Poster, focusing on the second step. Tell the students about Step 2: Making a hypothesis or a guess. • Tell students that they will now complete Step 2 of their experiment. For example, say, "Your job is to make a guess/hypothesis for your science experiment." • Review the learning goal with students: **I will make a guess/hypothesis for my science experiment.**
Model	• Continue using the Tastes Experiment to model. • Display the experiment pages and/or the appropriately leveld My Science Fair Project activity page. Remind students that in Step 1, they asked a question. Emphasize that right now they can only make a guess, or hypothesis, about the answers to the question(s). Point out that the final answers will come from doing the experiment. • Read Step 2 and model making a guess/hypothesis. For example, say, "I know that plain potato chips are salty. I think that only plain potato chips are salty." Continue modeling to show the students how to record the guess/hypothesis on either the My Science Fair Project activity page or the I Think statements in Step 2 of the Tastes Exerperiment. • Optional: Review the items needed for the science experiment and make a shopping list for these items.
Provide Practice	**Level 3:** Have the student make a guess/hypothesis by writing or dictating what they think will happen. **Level 2:** Have the student make a guess by choosing one of the "I Think" statements from the provided experiment. **Level 1:** Have the student make a guess by making a selection from the "I Think" statements (may be errorless choice).
Review	• Talk with students about the scientific process. Point out that today, they completed the first two steps of the process—they asked a question and they made a guess. • Tell students that next they will conduct the experiment and gather data.

Check Understanding

- **Level 3:** Can the student make a guess/hypothesis by writing or dictating?
- **Level 2:** Can the student make a guess/hypothesis from a set of choices?
- **Level 1:** Can the student make a guess/hypothesis from a choice (may be errorless)?

Instructional Targets

Standards for Scientific Inquiry
- Conduct simple scientific investigations.
- Use tools to gather data and information.

Instructional Routine

Introduce	• Introduce the activity by asking a focus question. For example, ask, "What is the second step in the scientific method—eating dinner or making a hypothesis/guess?" Discuss students' responses. • Continue discussion by reviewing the Scientific Method Poster, focusing on the third and fourth steps: Do an experiment and organize data. • Tell students they will now complete Steps 3 and 4 of the scientific process—they will conduct an experiment and gather data. For example, say, "Your job is to now conduct an experiment and gather and record data (information). • Review the learning goals with students: **I will conduct an experiment.** **I will gather and record data.**
Model	• Continue using the Tastes Science Experiment to model. Display the experiment page and the appropriately leveled My Science Fair Project activity page. Model reading the steps to complete the experiment, showing students how to fill out Step 3 of the My Science Fair Project ativity page. • Model how to gather and record data for the science experiment. For example, after tasting the plain potato chip, mark how the chip tastes in Step 4 of the experiment. After completing Step 4 of the experiment, return to the My Science Fair Project activity page and answer the Step 4 question, 'What happened?'.
Provide Practice	**Level 3:** Have the student independently follow the directions to conduct the experiment and gather and record data. **Level 2:** With support, have the student follow the directions to conduct the experiment and gather and record data. **Level 1:** Have the student use his or her active response participation mode to participate in conducting the experiment and gathering and recording data.
Review	• Review the steps to the experiment and discuss what happened. • Point out that today, students completed Steps 3 and 4 of the scientific process—they conducted an experiment and they gathered data. Explain that the next step is to review and discuss the data they gathered.

Check Understanding

Level 3: Can the student independently follow steps to complete an experiment? Can the student independently gather and record data?

Level 2: Can the student follow steps to complete an experiment with support? Can the student gather and record data with support?

Level 1: Can the student actively participate in an experiment? How? Can the student actively participate in gathering and recording data? How?

Instructional Targets

Standards for Scientific Inquiry
- Analyze and interpret data.
- Communicate and support findings.

Instructional Routine

Introduce	• Introduce the activity by asking a focus question. For example, ask, "What is the last step in the scientific method—find the conclusion or watch a movie?" • Prompt students to recall their experiments. For example, say, "You gathered and recorded data about your experiment. The last step in the scientific method is to look at the data and decide if the guess/hypothesis you made was correct. • Review the learning goals with students: **I will look at my data.** **I will decide if my guess was correct.**
Model	• Display a completed Step 4: Organize Data form. Model interpreting the data by analyzing the chart. Check to see if any of the students had results that differ. • Display Step 5: Find the Conclusion and demonstrate how to use the data to answer the (concluding) questions. • Model how to review a guess with students. For example, say, "I guessed that only plain potato chips would taste salty. All of the potato chips tasted salty." • Determine if your guess was correct. Discuss why your guess was correct or incorrect. Model how to fill out the answer to Step 5 of the My Science Fair Project activity page using the concluding questions fom the experiment.
Provide Practice	**Level 3:** Have the student independently review their completed Step 4: Organize Data form and answer questions to complete Step 5. Have students share their findings. **Level 2:** With support, have the student review their completed Step 4: Organize Data form and answer questions to complete Step 5. Have students share their findings with support as needed. **Level 1:** With support, have the student review the completed Step 4: Organize Data form. Have the student complete Step 5 by using their active participation mode.
Review	• Explain that students have now completed all five of the steps in the scientific process. Review the steps. • Have students create a poster to present their science experiment at the science fair. Students can use the My Science Fair Poster directions to create posters about their projects.

Check Understanding

Level 3: Can the student independently analyze data to determine if their guess is correct? Can the student share and support their finding?

Level 2: Can the student use data to determine if their guess is correct with support? Can the student share their findings with support?

Level 1: Can the student actively participate in analyzing data with support? Can the student use their active communication mode to share their findings?

Instructional Targets

Social Studies Standards for History
- ***American History:*** Use multiple sources to create a sequence of events from a historical period.

Social Studies Standards for History
- ***World History:*** Use multiple sources to create a sequence of events from a historical period.

Reading Standards for Informational Text
- ***Range and Level of Text Complexity:*** Read and use grade level and age-appropriate informational materials, including social studies and technical texts that are adapted to student reading level.

Differentiated Tasks

Level 3 Students will...

- Use multiple sources to create a description of a historical event or period of time.
- Independently read informational materials, including social studies and technical texts that have been adapted to student reading level.

Level 2 Students will...

- Use various sources to create a sequence of events in history.
- Read supported and shared informational materials, including social studies and technical texts that have been adapted to student reading level.

Level 1 Students will...

- Select pictures to sequence a series of events in history.
- Actively participate in supported reading or informational materials, including social studies and technical texts that have been adapted to student ability level.

Topic Connection

Throughout this unit, students learn about scientific inquiry and the scientific method. In this lesson, students will learn about important scientific discoveries made by different scientists throughout history. As they learn about the events, talk about how scientists used the scientific method to make the discovery.

Topic Words

observe	scientific method	scientist

History Words

A.D.	before*	historical events	past
after*	date	history	sequence
B.C.	earliest	order	timeline

* Power Words

Lesson at a Glance

	Activity 1	Activity 2
Instructional Activities	Reading a Timeline	Sequencing Events
See how these activities fit into the **Suggested Unit Pacing** .		
ULS Materials and Resources	**Timeline**	**Sequencing Templates** (Level 3, Level 2, Level 1) **Timeline Cards**
Additional Materials		

Instructional Target

Reading Standards for Informational Text

- ***Range and Level of Text Complexity:*** Read and use grade level and age-appropriate informational materials, including social studies and technical texts that are adapted to student reading level.

Instructional Routine

Introduce	• Introduce the activity by asking a focus question about historical sequencing. For example, ask, "What can we use to know what happened in the past, and in what order it happened—a phone book or a timeline?" Discuss students' responses. Explain that a timeline shows events in the order in which they happen. The earliest date appears at the beginning (first) of the timeline and the most recent date appears at the end of the timeline (last). • Tell students they will read a timeline identifying important scientific discoveries or inventions made by different scientists throughout history. • Review the learning goal with students: **I will read a timeline.**
Model	• Display the Timeline. • Read the first date on the Timeline. Explain that the date tells when an event happened. Model tracking the Timeline event. Read and discuss the event. • Continue reading the other events. Comment on the sequence of events using words such as before and after. If necessary, explain the difference between A.D. and B.C. • Model how to further research one of the events or topics using the internet or a print resource. For example, say, "I wonder if Isaac Newton discovered anything else besides gravity. I will use the internet to look it up." Attempt to find an event with a date that would add to the timeline.
Provide Practice	**Level 3:** Have the student independently read parts of the timeline. **Level 2:** Have the student use the picture supports to read parts of the timeline. **Level 1:** Have the student actively participate in reading parts of the timeline using a preferred communication mode.
Review	• Review the Timeline with students. • Discuss what people could learn about the past based on those dates. • Explain to students that it is important to know about dates in our history because we can learn from them.

Check Understanding

- **Level 3:** Can the student independently read parts of the timeline?
- **Level 2:** Can the student read parts of the timeline using picture supports?
- **Level 1:** Can the student participate in reading a timeline? How?

Instructional Target

Social Studies Standards for History
- ***American History:*** Use multiple sources to create a sequence of events from a historical period.

Social Studies Standards for History
- ***World History:*** Use multiple sources to create a sequence of events from a historical period.

Instructional Routine

Introduce	• Introduce the activity by asking a focus question about historical sequencing. For example, ask, "When we look at the Timeline, what do we use to tell what happened first—the dates or the colors?" Discuss students' responses. • Review and reread the Timeline from Activity 1. • Remind students that a timeline shows events in the order in which they happened. Explain that the students' job will be to complete the timeline to put it in order. For example, say, "Today, your job is to complete the Timeline by putting events in order." • Review the learning goal with students: **I will put events in order.**
Model	• Display a Sequencing Template. Templates are provided in three levels; choose the level that is most fitting for the majority of your students' needs. • Demonstrate how to put the events into the proper sequence by looking at the provided dates. For example, say, "Events on a timeline go in order from the earliest date to the most recent date. I'm going to look for the earliest date." Identify the first date, read the event and model placing the event on the Timeline. • Repeat with one or two more events / dates.
Provide Practice	***Provide each student with the appropriate Sequencing Template based on their skills and abilities.*** **Level 3:** Have the student put the dates and events in order to create a timeline. **Level 2:** Have the student put the dates on the Timeline to show the sequence of events. **Level 1:** Have the student participate in sequencing events by selecting a picture from a narrowed field or errorless choice(s).
Review	• Review the completed Timeline with students and discuss what people could learn about the past based on those dates. • Explain to students that it is important to know about dates in our history because we can learn from them.

Check Understanding

- **Level 3:** Can the student put the dates and events in order?
- **Level 2:** Can the student put the dates in order?
- **Level 1:** Can the student select pictures to sequence an event using their active communication mode?

Instructional Target

Standards for Writing

- ***Range of Writing:*** Participate routinely in supported writing activities, using conventional formats.
- ***Text Types and Purposes:*** Generate narrative paragraphs, including a logical sequence of events, descriptive details and reflective conclusion.

Differentiated Tasks

Level 3 Students will...

- Write routinely for a range of discipline-specific tasks, purposes and audiences.
- Create one or more paragraphs containing narrative elements, including a sequence of events and a reflective conclusion.

Level 2 Students will...

- Participate routinely in supported writing activities for a range of discipline-specific tasks, purposes and audiences.
- With support, select pictures with text to create a logical sequence of events that tell a story.

Level 1 Students will...

- Actively participate in shared writing and communication activities for a range of discipline-specific tasks, purposes and audiences.
- Given a narrowed field or errorless choice(s) of pictures, make a selection to tell a story sequence.

Topic Connection

Throughout this unit, students are learning about scientific inquiry and scientists. In this lesson students will write about learning about science, scientists and science during a season.

Topic Words

experiment	science
question*	scientist

Literacy Words

capitalization	journal	revise
entry	prompt	sentence
illustrate	punctuation	write*

* Power Words

Benchmark Assessments

- Writing: Writing Probe
- Emerging Skills: Early Emerging Writing Rubric

Lesson at a Glance

	Activity 1	Activity 2		
Instructional Activities	Journal Entry 1: Whole Group Entry	Journal Entry 2: Learning About Science	Journal Entry 3: Thankful for Scientists	Journal Entry 4: Seasons of Science

See how these activities fit into the **Suggested Unit Pacing**.

ULS Materials and Resources	**Journal Cover** **Writing Template** **Illustration Page** **Standards Connection** (Lesson 16)	**Writing Templates** (Level 3, Level 2, Level 1) **Fill-In Word Cards** **Fill-In Picture/Word Cards** **Illustration Page** **Standards Connection** (Lesson 16)
	SymbolStix PRIME **L³ Skills: Language Arts Skills**	
Additional Materials		

Instructional Target

Standards for Writing

- ***Range of Writing:*** Participate routinely in supported writing activities, using conventional formats.
- ***Text Types and Purposes:*** Generate narrative paragraphs, including a logical sequence of events, descriptive details and reflective conclusion.

Instructional Routine

? or

Introduce	• Introduce the activity by asking a focus question, such as, "What is a place to write thoughts and memories called—a journal or a magazine?" Remind students that journals are a way to write and save personal thoughts and memories. • Explain to students that they will work together to complete a journal entry about the day's events. • Review the learning goal with students: **I will help write a journal entry about today's events.**
Model	• Display the Writing Template and model writing the date. Then read the prompt aloud. • Model brainstorming ways to complete the prompt by asking, "What event(s) can we write about?" Model writing one or two sentences about the event(s). Model writing a conclusion. • After writing, model rereading and checking the sentences for capitalization, end punctuation, a sequence of events and conclusion.
Provide Practice	***Incorporate use of appropriate writing alternatives, such as dictation, adaptive keyboards and eye gaze, to fit students' needs and abilities. Visual supports may include story illustrations, unit symbols or symbols from SymbolStix PRIME.*** **Level 3:** Have the student contribute to the journal entry by writing words or sentences about a sequence of events with a conclusion. **Level 2:** Have the student contribute to the journal entry by writing words or sentences about a sequence of events with a conclusion, with support. **Level 1:** Have the student use his or her active participation mode to contribute to the journal entry. For example, have the student suggest an event to include by making a selection from a narrowed field or errorless choice(s).
Review	• Revisit the learning goal by reading the completed journal entry aloud. • Check or have students check for correct capitalization and punctuation. A checklist for revising journal entries is provided in the Standards Connection.

Check Understanding ?

- **Level 3:** Can the student contribute to a journal entry by writing words or sentences about a sequence of events with a conclusion?
- **Level 2:** Can the student contribute to a journal entry by writing words or sentences about a sequence of events with a conclusion, with support?
- **Level 1:** Can the student participate in shared writing activities by making a selection from a narrowed field or errorless choice(s)?

Instructional Target

Standards for Writing

- ***Range of Writing:*** Participate routinely in supported writing activities, using conventional formats.

Instructional Routine

? or

Introduce

- Introduce the activity by asking a focus question related to the journal topic. For example, before writing about science, ask, "How can you learn more about science—ask a question or take a bath?"
- Remind students that journals are a way to write and save personal thoughts and memories. Say, "Today, your job is to write about _____."
- Review the learning goal with students: **I will write about _____.**

  learning about science

  why I am thankful for scientists

  science during a season

Model

- Choose and display a Writing Template and read the prompt(s) aloud.
- Model brainstorming ways to answer the prompt(s).
- Write or complete one or two sentences, then model checking for capitalization and end punctuation.

Provide Practice

Provide appropriate writing alternatives, such as adaptive keyboards, eye gaze and dictation, to fit students' needs and abilities.

Level 3: Provide the student with Writing Template, Level 3 or Level 2. Have the student write in response to the prompt. Encourage the student to use correct capitalization and end punctuation.

Level 2: Provide the student with Writing Template, Level 3 or Level 2, and Fill-In Word Cards. Have the student write in response to the prompt by completing the sentences. Students may write words or use the Fill-In Word Cards to complete the sentences. Have the student add ending punctuation, providing assistance as needed.

Level 1: Provide the student with Writing Template, Level 1 and Fill-In Picture/Word Cards. Have the student select from a narrowed field or errorless choice(s) to complete each sentence.

Review

- Revisit the learning goal by inviting students to read their journal entries aloud.
- **Writing Conference:** Use the Standards Connection to meet with students to review and revise journal entries for conventions.

Check Understanding ?

Level 3: Can the student write in response to a prompt? Can the student use correct capitalization and end punctuation?

Level 2: Can the student write in response to a prompt by completing sentences? Can the student add missing end punctuation with assistance?

Level 1: Can the student write in response to a prompt by selecting a word or phrase from a narrowed field or errorless choice(s)?