# NEW MILFORD BOARD OF EDUCATION 

New Milford Public Schools
25 Sunny Valley Road, Suite A
New Milford, Connecticut 06776

## COMMITTEE ON LEARNING SUB-COMMITTEE MEETING NOTICE

DATE: August 1, 2023

TIME: 7:30 P.M.
PLACE: Sarah Noble Intermediate School Library Media Center

## AGENDA

## New Milford Public Schools Mission Statement


#### Abstract

The mission of the New Milford Public Schools, a collaborative partnership of students, educators, family, and community is to prepare each and every student to compete and excel in an ever-changing world, embrace challenges with vigor, respect and appreciate the worth of every human being, and contribute to society by providing effective instruction and dynamic curriculum, offering a wide range of valuable experiences, and inspiring students to pursue their dreams and aspirations.


## 1. Call to Order

2. Public Comment

An individual may address the Board concerning any item on the agenda for the meeting subject to the following provisions:
A. A three-minute time limit may be allocated to each speaker with a maximum of twenty minutes being set aside per meeting. The Board may, by a majority vote, cancel or adjust these time limits.
B. If a member of the public comments about the performance of an employee or a Board member, whether positive, negative, or neutral, and whether named or not, the Board shall not respond to such comments unless the topic is an explicit item on the agenda and the employee or the Board member has been provided with the requisite notice and due process required by law. Similarly, in accordance with federal law pertaining to student confidentiality, the Board shall not respond to or otherwise discuss any comments that might be made pertaining to students.

## 3. Items for Discussion and Approval

A. Curriculum

1. CP Children's Literature
2. Honors Children's Literature
3. Accelerated Math

## 4. Items of Information

A. Summer School
B. Teacher Evaluation
C. Early College Experiences Dual Enrollment


## 5. Public Comment

An individual may address the Board concerning any item on the agenda for the meeting subject to the following provisions:
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6. Adjourn

Sub-Committee Members: Tammy McInerney Chairperson<br>Brian McCauley<br>Leslie Sarich<br>Sarah Herring

$\begin{array}{ll}\text { Alternates: } & \text { Olga I. Rella } \\ & \text { Pete Helmus }\end{array}$

## NEW MILFORD PUBLIC SCHOOLS

New Milford, Connecticut


April/2023

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## New Milford Board of Education



Author of Course Guide
Mrs. Janet Swierbut

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## New Milford's Mission Statement

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## Children's Literature

(elective)

## Grades 11/12

Children's Literature is a semester class that introduces students to the world of children's literature and the various genres, themes, and elements of children's books. Through the exploration of classic and contemporary works, students will examine the ways in which children's literature reflects society and culture and helps shape children's identities a laes. Students will read several children's classics as well as contemporary books. Students will explore various ideas conveye in the exts, the historical development and context of children's fiction, and the intersections among language, theay, po ics, if ology, and children's fiction. Most importantly, students examine the ideologies embedded in the texts as well as the ideorie guide our culture, particularly in terms of children and the literature they read. The culminating project for this couse re guir sturents to write their own children's book along with a lesson plan to be taught on a field trip to a local elementary schno all elao ves include the core text reading requirement and, in the fall semester, the personal narrative/college essay assignment.


This course reflects the Vision of a Graduate framework by developing curiosity and love of learning, collaboration and inquiry, and critical thinking.

## Pacing Guide

Unit One: History of Childhood (2 Weeks)
Unit Two: Diversity, Equity \& Inclusion (3 Weeks)
Unit Three: Fairy Tales (2-3 Weeks)
Unit Four: Picturebooks (4 Weeks)


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## ESTABLISHED GOALS

## CCSS.ELA-LITERACY.RI.11-12.1

Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.

## CCSS.ELA-LITERACY.RI.11-12.3

 Analyze a complex set of ideas or sequence of events and explain how specific individuals, ideas, or events interact and develop over the course of the text.
## CCSS.ELA-LITERACY.RI.11-12.2

Determine two or more central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to provide a complex analysis; provide an objective summary of the text.

CCSS.ELA-LITERACY.W.11-12.2 Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.


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| $\begin{aligned} & \hline \text { Code } \\ & \mathrm{T}, \mathrm{M} \end{aligned}$ | Pre-Assessment <br> Students will write a brief literacy history where they describe how they learned to read, who helped them learn to read, and early successes/failures learning to read. Students discuss their thoughts on childhood, including stages and milestones. Students will read and/or discuss their favorite books from childhood. |  |
| :---: | :---: | :---: |
| T,M,A <br>  <br> T,A,M <br>  <br> T,M <br> T,M,A | Summary of Key Learning Events and Instruction <br> Student success at transfer meaning and acquisition depends on... <br> Investigating the following: <br> This question could be posed as a warm-up question and then students could choose several classic books to compare and contrast. <br> Are children innately good and become corrupted as they are im society, or are children born sinful and need to be taughtgood ehayine? Provide examples from each of the models of childhood. <br> In small groups have the students ponder these questions the ther would bring the groups together to have a whole cland disc sion. <br> Is there such a thing as a universal childhood Wh ars some of the factors that account for the differey twe child $n$, both in terms of historical differences and differer es bet een chmoren in our time? <br> Students will read the textbook to g. Ser background knowledge of historical perspectives. <br> How does literature provide a glimpse into childhood? <br> These questions will be posed by the teacher and students will reflect and write about their personal experiences. <br> When does childhood end? What rituals, ceremonies, or rites of passage mark its ending? What kind of activity or experience can you imagine that might be used to achieve or recognize the end of childhood? How have children's books you have read marked the end of childhood? | Progress Monitoring <br> Throurc ut the unit, the teacher monitors progress through self- eflec $n$ exercises to encourage metacognition, wha class a cussion, observation of small group discussion, lized feedback through conferences, and evaluation of $w$ tten responses (through rubrics). |

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## ESTABLISHED GOALS

CCSS.ELA-LITERACY.L.11-12.3
Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.

## CCSS.ELA-LITERACY.L.11-12.5

Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

CCSS.ELA-LITERACY.W.11-12.7
Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

CCSS.ELA-LITERACY.RI.11-12.1 Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.

## Transfer

Students will be able to independently use their learning to...

- Develop an understanding of diversity, equity, and inclusion in children's literature.
- Apply critical thinking skills to analyze how authors represent diverse characters and experiences.
- Develop an appreciation for diverse perspectives andexperiences through literature.
- Recognize that DEI includes race, gender \& ability


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## Pre-Assessment

Discuss the question of ownership. Are the stories of a particular race, ethnicity, culture or other group "owned" by members of that community? Is it "theft" to write about or appropriate another culture or group's stories? Students will discuss this question in small groups and present to the class.

## Summary of Key Learning Events and Instruction

Student success at transfer meaning and acquisition depends on ...
Students will read Chapter 10 in the textbook and respond to a series of questions through warm-ups, group work and independent reflection.

Introduction to diversity, equity, and inclusion in children's literatu

- What do the terms mean and how has this been addressed historically?
Questions of audience are important for racially and culturally se literature. How can a reader's familiarity--or lack of famijiar cultural, racial or ethnic group affect how a work is recein interpreted?

When it comes to books about race, culture o d et nicity, how do other different experiences, backgrounds, ses, sires nd knowledge affect how a text is interpreted ap

Discuss the question of whether au rs have an ethical responsibility to consider the racial implications of the ictional works or characters. Are there ever limits to creative freedom?

What does it mean to have a gender identity?What role does social class play in making available certain gender identities and performances?

This activity will be a short-term group project
Compare classic children's literature to newer books on the market today. How is DEI being recognized as an important part of our culture?

Resources:
Progress Monitoring

Throughout the unit, the teacher monitors progress through self- efled un exercises to encourage metacognition, cussion, observation of small group discussion, lized feedback through conferences, and evaluation of w tten responses (through rubrics).

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## ESTABLISHED GOALS

CCSS.ELA-LITERACY.W.11-12.3
Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.

CCSS.ELA-LITERACY.RI.11-12.1 Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.

CCSS.ELA-LITERACY.RL.11-12.5 Analyze how an author's choices concerning how to structure specific parts of a text (e.g., the choice of where to begin or end a story, the choice to provide a comedic or tragic resolution) contribute to its overall

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structure and meaning as well as its aesthetic impact.

CCSS.ELA-LITERACY.RL.11-12.3
Analyze the impact of the author's choices regarding how to develop and relate elements of a story or drama (e.g., where a story is set, how the action is ordered, how the characters are introduced and developed.


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stage 3

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| Code M. A | Pre-Assessment <br> Students will be asked: When you hear the term "fairy tale", what thoughts come to mind? Brainstorm as a class. Students will respond in their journals to the following prompts: Is the term "fairy tale" always used in a positive way, or can it have negative connotations? What are some of your favorite fairy tales to read/hear? Why? Discuss as a class: What can fairy tales teach us about life? |  |
| :---: | :---: | :---: |
| T,M,A <br>  <br> T,A,M <br>  <br>  <br> T,M | Summary of Key Learning Events and Instruction <br> Student success at transfer meaning and acquisition depends on... <br> A basic structure of lessons may follow this format: <br> - Students write in journals <br> - Whole class discussion and/or small group discussion <br> - Students select and read fairy tales <br> - Students apply relevant ideas from the lesson to their read of selected fairy tales <br> Students will read excertps from Chapter 4, Fairytales <br> Investigating the following: <br> Watch The Princess \& the Frog. Complete a viewing racks the common elements of fairy tales. <br> We tend to take the presence of granted. What would fairy tales be like without or fairy godmothers? What role sho magic play in fairy tales? Students will refelct and write a response. <br> Fairy tales are frequently critiqued for their "happily ever after" endings, which are viewed as simplifying the complexity of life. Yet some writers of fairy tales ended their tales with sad, bittersweet, or ambivalent endings. What changes when a fairy tale ending is unhappy? What are some possible motivations in offering tales without happy endings? <br> Take four fairy tales and write a description of the settings of the tales. Then think about setting these fairy tales in another time and place. What would change for each fairy tale? Make a chart of the similarities and | Progress Monitoring <br> Throughout the unit, the teacher monitors progress through self-refletion exercises to encourage metacognition, who eclas discussion, observation of small group discussion, ind fualized eedback through conferences, and evaluation responses (through rubrics). |

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differences between the original fairy tales and the relocated ones? Use your chart to draw conclusions about the importance of setting in fairy tales.

Choose one theoretical approach mentioned in the textbook used to interpret fairy tales. How does the approach explore questions of human development, psychology, and social organization? Students will evaluate a fairytale and apply new learning.

## Resources:

All Resources and materials must adhere to all New Milford Board of Education policies and regulations and are subject to New Milford Board of Education approval. Resources and materials must be researched and vetted by the writers and department heads prior to submission for approval.

Shared articles, video clips and the text book: Reading Children Literature - A Crit
(second edition)



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## ESTABLISHED GOALS

CCSS.ELA-LITERACY.RL.11-12.1 Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.

CCSS.ELA-LITERACY.RL.11-12.2
Determine two or more themes or central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to produce a complex account; provide an objective summary of the text.

CCSS.ELA-LITERACY.SL.11-12.1
Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 11-12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

CCSS.ELA-LITERACY.SL.11-12.4


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| Code | Evaluative Criteria | Assessment Evidence |
| :---: | :---: | :---: |
|  | The picture book is appropriate for a first grade audience <br> Students craft a believable story with appealing illustrations/images <br> There is a lesson or purpose to the book <br> Students create a meaningful lesson/activity to enhance the book and receive feedback from younger students | PERFORMANCE TASK(S): <br> Create your own book! <br> Student Goal/challenge - Write your own picture book and design a lesson plan <br> for a first grade classroom <br> Role for student - Author/Elementary school teacher <br> Situation- You e dol a demo lesson for a teaching position <br> Products ano erinces generated by students - <br> Write ndillust a children's book about a subject of your choice <br> son plar hat includes: <br> Learning Goals <br> Two activities that use ideas/strategies from the textbook and Unit Four <br> Standards/criteria for judging success - <br> You write an appealing children's story, illustrated with quality images that is ready for publishing <br> Your lesson plan follows the models provided by the textbook and the teacher |



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## ESTABLISHED GOALS

CCSS.ELA-LITERACY.L.11-12.3
Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.

CCSS.ELA-LITERACY.L.11-12.5 Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

## CCSS.ELA-LITERACY.W.11-12.7

Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.


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A short writing assignment to assess students' ability to recognize and use literary devices in their writing.

| Summary of Key Learning Events and Instruction | Progress Monitoring |
| :--- | :--- |

Student success at transfer meaning and acquisition depends on...

The following learning events and instruction should follow the mini-lesson model of instruction: mini-lesson, small group work, conferring, and independent work.

Gativ
sessments through class discussions and

Ond ing feedback from the teacher on student progress
orrd areas for improvement.
Progress Monitoring

Summative assessment at the end of the unit to measure students' understanding and growth in their ability to analyze and write children's poetry.


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## NEW MILFORD PUBLIC SCHOOLS

New Milford, Connecticut



Children's Literature
Honors
April/2023

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## New Milford Board of Education

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Superintendent of Schools
Dr. Janet Parlato

Assistant Superintendent
Ms. Holly Hollander

Author of Course Guide
Mrs. Janet Swierbut

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## New Milford's Mission Statement

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## Children's Literature

(elective)

## Grades 11/12

Children's Literature is a semester class that introduces students to the world of children's literature and the various genres, themes, and elements of children's books. Through the exploration of classic and contemporary works, students will examine the ways in which children's literature reflects society and culture and helps shape children's identities and values. Students will read several children's classics as well as contemporary books. Students will explore various ideas conveyed in the texts, the historical development and context of children's fiction, and the intersections among language, theory, politics, ideology, and children's fiction. Most importantly, students examine the ideologies embedded in the texts as well as the ideologies that guide our culture, particularly in terms of children and the literature they read. The culminating project for this course requires students to write their own children's book along with a lesson plan to be taught on a field trip to a local elementary school. All electives include the core text reading requirement and, in the fall semester, the personal narrative/college essay assignment. In the honors level course, the pacing is faster and an extra poetry unit is included.

This course reflects the Vision of a Graduate framework by developing curiosity and love of learning, collaboration and inquiry, and critical thinking.

## Pacing Guide

Unit One: History of Childhood (2 Weeks)
Unit Two: Diversity, Equity \& Inclusion (3 Weeks)
Unit Three: Fairy Tales (2-3 Weeks)
Unit Four: Picturebooks (4 Weeks)
Unit Five: Poetry: (2-3 Weeks/Honors)

## ESTABLISHED GOALS

## CCSS.ELA-LITERACY.RI.11-12.1

Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.

## CCSS.ELA-LITERACY.RI.11-12.3

 Analyze a complex set of ideas or sequence of events and explain how specific individuals, ideas, or events interact and develop over the course of the text.
## CCSS.ELA-LITERACY.RI.11-12.2

Determine two or more central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to provide a complex analysis; provide an objective summary of the text.

## CCSS.ELA-LITERACY.W.11-12.2

Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.

## Transfer

Students will be able to independently use their learning to...

- Analyze the historical context of children's literature and its impact on society.
- Identify the different genres of children's literature and their characteristics.
- Evaluate the representation of childhood in various works of children's literature
- Become enthusiastic, versatile, skillful, and critical readers of children's literature.

| Meaning |  |
| :---: | :---: |
| UNDERSTANDINGS <br> Students will understand that... <br> - Literature reflects the values and beliefs of a society. <br> - Children's literature has the power to shape children's perceptions of the world. <br> - Examining the history of childhood helps us to understand the primary audience of children's literature. <br> - Reading literature helps readers of any age make sense out of the world. | ESSENTIAL QUESTIONS <br> Students will keep considering... <br> - Why read children's literature critically? <br> - In what ways do the characters in children's literature represent universal experiences? <br> - How does children's literature help readers to interpret, understand, and define human life? <br> - How has the perception of childhood changed over time? <br> - How does the historical context of a work of children's literature impact its meaning? |
| Acquisition |  |
| Students will know... | Students will be skilled at ... |

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- The history of children's literature from the 18th century to the present day.
- The different genres of children's literature and their characteristics.
- The historical and cultural context of various works of children's literature.
- The seven historical models of childhood
- Dual address: children's literature is written for both children and adults
- Children's literature transmits shared cultural values
- Analyzing the historical and cultural context of a work of children's literature.
- Identifying the characteristics of different genres of children's literature.
- Evaluating the representation of childhood in various works of children's literature.


|  | $\begin{array}{l}\text { OTHER EVIDENCE: } \\ \text { Students will show they have achieved Stage } 1 \text { goals by... } \\ \text {-Close reading of various texts }\end{array}$ |
| :---: | :--- | :--- |
|  |  |
|  |  |
|  |  |
| -Informal responses in journals |  |
| -Short quizzes on selected material from textbook |  |
| -Participation in small group and class discussions |  |
| -Defining key terms |  |$\}$

stage 3

| $\begin{aligned} & \text { Code } \\ & \text { T,M } \end{aligned}$ | Pre-Assessme <br> Students will write a brief literacy history where they describe how they lear successes/failures learning to read. Students discuss their thoughts on child and/or discuss their favorite books from childhood. | ed to read, who helped them learn to read, and early ood, including stages and milestones. Students will read |
| :---: | :---: | :---: |
| T,M,A <br> T,A,M <br> T,M <br> T,M,A | Summary of Key Learning Events and Instruction <br> Student success at transfer meaning and acquisition depends on... <br> Investigating the following: <br> This question could be posed as a warm-up question and then students could choose several classic books to compare and contrast. <br> Are children innately good and become corrupted as they are immersed in society, or are children born sinful and need to be taught good behavior? Provide examples from each of the models of childhood. <br> In small groups have the students ponder these questions. The teacher would bring the groups together to have a whole class discussion. <br> Is there such a thing as a universal childhood? What are some of the factors that account for the differences between children, both in terms of historical differences and differences between children in our time? <br> Students will read the textbook to gather background knowledge of historical perspectives. <br> How does literature provide a glimpse into childhood? <br> These questions will be posed by the teacher and students will reflect and write about their personal experiences. <br> When does childhood end? What rituals, ceremonies, or rites of passage mark its ending? What kind of activity or experience can you imagine that might be used to achieve or recognize the end of childhood? How have children's books you have read marked the end of childhood? | Progress Monitoring <br> Throughout the unit, the teacher monitors progress through self-reflection exercises to encourage metacognition, whole class discussion, observation of small group discussion, individualized feedback through conferences, and evaluation of written responses (through rubrics). |


|  | These questions relate to the 7 models of childhood and students will look <br> for examples in classic and modern texts. <br> What can children do that adults cannot, and what can adults do that <br> children cannot? Provide exceptions to your expectations for these <br> age-defined limitations. What are examples of adults doing things we <br> think of typical of children and vice versa? What do your answers suggest <br> about the child as radically Other to, or existing along a continuum with, <br> the adult? | T,M, <br> Resources: <br> All Resources and materials must adhere to all New Milford Board of <br> Education policies and regulations and are subject to New Milford Board <br> of Education approval. Resources and materials must be researched and <br> vetted by the writers and department heads prior to submission for <br> approval <br> Shared articles, video clips and the text book: Reading Children's <br> Literature - A Critical Introduction by Carrie Hintz and Eric L. Tribunella <br> (second edition) |
| :--- | :--- | :--- |

## ESTABLISHED GOALS

CCSS.ELA-LITERACY.L.11-12.3
Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.

## CCSS.ELA-LITERACY.L.11-12.5

Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

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Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

CCSS.ELA-LITERACY.RI.11-12.1 Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.

## Transfer

Students will be able to independently use their learning to...

- Develop an understanding of diversity, equity, and inclusion in children's literature.
- Apply critical thinking skills to analyze how authors represent diverse characters and experiences.
- Develop an appreciation for diverse perspectives and experiences through literature.
- Recognize that DEI includes race, gender \& ability

| Meaning |  |
| :---: | :---: |
| UNDERSTANDINGS | ESSENTIAL QUESTIONS |
| Students will understand that... | Students will keep considering... |
| - Children's literature has the power to shape and reflect cultural values and attitudes. | How do authors represent diverse experiences in children's literature? |
| - The representation of diverse perspectives in literature is important for promoting empathy and understanding. | How can we use critical analysis to identify and challenge stereotypes and biases in children's literature? |
| - Critical analysis of children's literature helps readers recognize and challenge stereotypes | - Why is it important to include diverse perspectives in children's literature? |

- Children's literature has the power to shape and reflect cultural values and attitudes.
The representation of diverse perspectives in literature is important for promoting empathy
- Critical analysis of children's literature helps readers recognize and challenge stereotypes and biases.
perspectives in children's literature?


| Code | Evaluative Criteria | Assessment Evidence |
| :---: | :---: | :---: |
|  | Further information: <br> - Impact - task achieves intended purpose <br> - Content - has a clear and effective structure creating unity and completeness <br> - Quality - Address all aspects of the assignment; correct citations and documentation <br> - Process - Uses a variety of quality and applicable methods to gather information | PERFORMANCE TASK(S): |
|  |  | Students will show that they really understand evidence of... |
| T,A |  |  |
| T,M |  | Goal/Challenge: The goal of this assessment is for students to analyze and reflect on a children's book of their choice from the perspective of diversity and inclusion. The challenge is for students to apply their knowledge of diversity and |
| T,M |  | inclusion concepts and practices to critically evaluate the book's representation of diverse characters and themes. |
| T,A |  | Role for Student: Students will take on the role of a diversity and inclusion consultant tasked with assessing the book's representation of diverse characters and themes. |
|  |  | Audience for Student Work: The audience for this project will be a children's book publisher or literary agent who is interested in publishing diverse and inclusive books for children. |
|  |  | Situation: In the real world, publishers and literary agents are actively seeking diverse and inclusive books to add to their collections. By completing this assessment, students will gain valuable skills and knowledge that will be applicable to real-world situations and careers. |
|  |  | Products and Performances Generated by Student: Students will be required to submit a written report that includes the following elements: |
|  |  | - A brief summary of the book they chose and the target audience. <br> - An analysis of the representation of diverse characters and themes in the book, using concepts and practices related to diversity and inclusion. <br> - A critical evaluation of the book's representation of diverse characters and themes, highlighting strengths and weaknesses. <br> - Recommendations for how the book could be improved to better represent diversity and inclusion, including suggestions for revisions or additional content. |

Standards/Criteria for Judging Success: The success of this project will be judged based on the following criteria:

- The depth and accuracy of the analysis of the book's representation of diverse characters and themes.
- The quality of the critical evaluation, including the ability to identify strengths and weaknesses and provide thoughtful recommendations for improvement.
- The clarity and effectiveness of the written report, including organization, coherence, and mechanics.
- The demonstration of knowledge and understanding of diversity and inclusion concepts and practices.


## OTHER EVIDENCE:

Students will show they have achieved Stage 1 goals by...

- Close reading a selection of DEI books books
- Short quizzes on selected material from textbook
- Short responses to essential questions written in class
- Comparing/analyzing various historical and modern texts
- Participation in small group and class discussions
- Defining key terms


## Pre-Assessment

Discuss the question of ownership. Are the stories of a particular race, ethnicity, culture or other group "owned" by members of that community? Is it "theft" to write about or appropriate another culture or group's stories? Students will discuss this question in small groups and present to the class.

## Summary of Key Learning Events and Instruction

Student success at transfer meaning and acquisition depends on...

Students will read Chapter 10 in the textbook and respond to a series of questions through warm-ups, group work and independent reflection.

Introduction to diversity, equity, and inclusion in children's literature.

- What do the terms mean and how has this been addressed historically?

Questions of audience are important for racially and culturally diverse literature. How can a reader's familiarity--or lack of familiarity--with a cultural, racial or ethnic group affect how a work is received or interpreted?

When it comes to books about race, culture and ethnicity, how do other different experiences, backgrounds, purposes, desires and knowledge affect how a text is interpreted and understood?

Discuss the question of whether authors have an ethical responsibility to consider the racial implications of their fictional works or characters. Are there ever limits to creative freedom?

What does it mean to have a gender identity?What role does social class play in making available certain gender identities and performances?

This activity will be a short-term group project
Compare classic children's literature to newer books on the market today. How is DEI being recognized as an important part of our culture?

Resources:

## Progress Monitoring

Throughout the unit, the teacher monitors progress through self-reflection exercises to encourage metacognition, whole class discussion, observation of small group discussion, individualized feedback through conferences, and evaluation of written responses (through rubrics).

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Shared articles, video clips and the textbook: Reading Children's Literature - A Critical Introduction by Carrie Hintz and Eric L. Tribunella (second edition)

ESTABLISHED GOALS

## CCSS.ELA-LITERACY.W.11-12.3

Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.

CCSS.ELA-LITERACY.RI.11-12.1 Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.

CCSS.ELA-LITERACY.RL.11-12.5
Analyze how an author's choices concerning how to structure specific parts of a text (e.g., the choice of where to begin or end a story, the choice to provide a comedic or tragic resolution) contribute to its overall structure and meaning as well as its aesthetic impact

CCSS.ELA-LITERACY.RL.11-12.3 Analyze the impact of the author's choices regarding how to develop and relate elements of a story or drama (e.g., where a story is set, how the

## Transfer

Students will be able to independently use their learning to...

- Use techniques like plot, pacing, dialogue and character development to write a fairy tale (tell a story)
- Identify the conventions of literary genres
- Understand how authors use verisimilitude to create believable worlds
- Use literary theory to interpret the same text in different ways

|  | ning |
| :---: | :---: |
| UNDERSTANDINGS <br> Students will understand that ... <br> - Fairy tales reflect cultural values and beliefs. <br> - Fairy tales often contain archetypal characters and themes. <br> - Fairy tales can be interpreted in a variety of ways and may have multiple meanings. <br> - Telling stories builds a sense of community | ESSENTIAL QUESTIONS <br> Students will keep considering... <br> - What defines a fairy tale? <br> - How do cultural values and beliefs influence the content and interpretation of fairy tales? <br> - How can we use our knowledge of fairy tales to create our own stories? |
| Acquisition |  |
| Students will know... | Students will be skilled at... |

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| action is ordered, how the characters are introduced and developed. | - Narrative techniques - Characterization, tone/mood, imagery, symbolism, metaphor/simile <br> - Genre conventions of fairy tales <br> - Key terms used in defining fairy tales <br> - The importance of setting in a story <br> - Theoretical approaches to interpret fairy tales <br> - The role of magic in fairy tales <br> - How to create their own fairy tales and reflect on their creative process. | - Determining the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings <br> - Using narrative techniques, such as dialogue, pacing, description, reflection, and multiple plot lines, to develop experiences, events, and/or characters <br> - Using a variety of techniques to sequence events so that they build on one another to create a coherent whole and build toward a particular tone and outcome <br> - Using precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters <br> - Citing textual evidence |
| :---: | :---: | :---: |



|  |  |  |
| :--- | :--- | :--- |
|  |  | OTHER EVIDENCE: <br> Students will show they have achieved Stage 1 goals by... <br> -Close reading of various texts |
|  | - Short responses to essential questions written in class <br> - Completing a viewing guide for Princess \& the Frog <br> -Short quizzes on selected material from textbook <br> -Participation in small group and class discussions <br> -Defining key terms |  |
|  |  |  |


| Code M. A | Pre-Assessment <br> Students will be asked: When you hear the term "fairy tale", what thoughts come to mind? Brainstorm as a class. Students will respond in their journals to the following prompts: Is the term "fairy tale" always used in a positive way, or can it have negative connotations? What are some of your favorite fairy tales to read/hear? Why? Discuss as a class: What can fairy tales teach us about life? |  |
| :---: | :---: | :---: |
| T,M,A <br> T,A,M <br> T,M | Summary of Key Learning Events and Instruction <br> Student success at transfer meaning and acquisition depends on ... <br> A basic structure of lessons may follow this format: <br> - Students write in journals <br> - Whole class discussion and/or small group discussion <br> - Students select and read fairy tales <br> - Students apply relevant ideas from the lesson to their reading of selected fairy tales <br> Students will read excertps from Chapter 4, Fairytales <br> Investigating the following: <br> Watch The Princess \& the Frog. Complete a viewing log that tracks the common elements of fairy tales. <br> We tend to take the presence of magical elements for granted. What would fairy tales be like without magical elements, such as talking animals or fairy godmothers? What role should magic play in fairy tales? Students will refelct and write a response. <br> Fairy tales are frequently critiqued for their "happily ever after" endings, which are viewed as simplifying the complexity of life. Yet some writers of fairy tales ended their tales with sad, bittersweet, or ambivalent endings. What changes when a fairy tale ending is unhappy? What are some possible motivations in offering tales without happy endings? <br> Take four fairy tales and write a description of the settings of the tales. Then think about setting these fairy tales in another time and place. What would change for each fairy tale? Make a chart of the similarities and | Progress Monitoring <br> Throughout the unit, the teacher monitors progress through self-reflection exercises to encourage metacognition, whole class discussion, observation of small group discussion, individualized feedback through conferences, and evaluation of written responses (through rubrics). |

differences between the original fairy tales and the relocated ones? Use your chart to draw conclusions about the importance of setting in fairy tales.

Choose one theoretical approach mentioned in the textbook used to interpret fairy tales. How does the approach explore questions of human development, psychology, and social organization? Students will evaluate a fairytale and apply new learning.

## Resources:

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## ESTABLISHED GOALS

CCSS.ELA-LITERACY.RL.11-12.1
Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.

## CCSS.ELA-LITERACY.RL.11-12.2

Determine two or more themes or central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to produce a complex account; provide an objective summary of the text.

## CCSS.ELA-LITERACY.SL.11-12.1

Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 11-12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

CCSS.ELA-LITERACY.SL.11-12.4
Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing

| Transfer |  |
| :---: | :---: |
| Students will be able to independently use their learning to... <br> - Explain how words and images relate <br> - Analyze the artistic choices in the production of picture books <br> - Use strategies to help younger readers acquire literacy skills <br> - Develop criteria to evaluate children's literature <br> - Compare and contrast different works, authors, and time periods of children's literature |  |
| Meaning |  |
| UNDERSTANDINGS <br> Students will understand that... <br> - Critical literacy gives a voice to historically underrepresented groups <br> - Children's books are complex works <br> - Children develop literacy when presented with varied strategies for reading | ESSENTIAL QUESTIONS <br> Students will keep considering... <br> - How does critical literacy influence how we read a text? <br> - What characteristics make a children's book great?- <br> - What approaches can we use to support, deepen, and extend children's responses to literature? |
| Acquisition |  |
| Students will know... <br> - Criteria for evaluating a good book <br> - How words and images relate to create meaning | Students will be skilled at... <br> - Analyzing visuals of a book <br> - Adapting speech to a variety of contexts and tasks <br> - Citing strong and thorough textual evidence to |

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perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.

- Artistic choices and media used in the production of picture books
- The basic components of a lesson plan - The role of critical literacy in children's books
support analysis of what the text says explicitly as well as inferences drawn from the text
- Analyzing and evaluating the effectiveness of an author's structure
- Analyzing a case in which grasping a point of view requires distinguishing what is directly stated in a text from what is really meant

| Code | Evaluative Criteria | Assessment Evidence |
| :---: | :---: | :---: |
|  | The picture book is appropriate for a first grade audience <br> Students craft a believable story with appealing illustrations/images <br> There is a lesson or purpose to the book <br> Students create a meaningful lesson/activity to enhance the book and receive feedback from younger students | PERFORMANCE TASK(S): <br> Create your own book! <br> Student Goal/challenge - Write your own picture book and design a lesson plan for a first grade classroom <br> Role for student - Author/Elementary school teacher <br> Audience for student work - students in a first grade classroom <br> Situation - You are doing a demo lesson for a teaching position <br> Products and performances generated by students - <br> Write and illustrate a children's book about a subject of your choice <br> A lesson plan that includes: <br> - Learning Goals <br> - Two activities that use ideas/strategies from the textbook and Unit Four <br> Standards/criteria for judging success - <br> You write an appealing children's story, illustrated with quality images that is ready for publishing <br> Your lesson plan follows the models provided by the textbook and the teacher |


|  |  | OTHER EVIDENCE: <br> Students will show they have achieved Stage 1 goals by.... <br> -Whole class and small group discussion <br> -Defining key terms <br> -Close reading images and text in a picturebook <br> -Short quizzes on selected material from textbook <br> -Informal responses to essential questions <br> -Practicing illustrating by using varied media |
| :--- | :--- | :--- |


response.
Students will select a picture book from the classroom library. Close read the text to produce a teacher provided "anatomy" of the book. Outline includes setting development, character development, and how the story unfolds on the page.

Students will select a picture book from the classroom library. How would it be different if it was composed in a different medium? Cite examples from the chapter in your responses.

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## ESTABLISHED GOALS

## CCSS.ELA-LITERACY.L.11-12.3

Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening.

## CCSS.ELA-LITERACY.L.11-12.5

Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

CCSS.ELA-LITERACY.W.11-12.7
Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

## CCSS.ELA-LITERACY.RI.11-12.1

 Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.
## Transfer

Students will be able to independently use their learning to...

- Explain how writers use language to manipulate meaning in a text
- Discuss approaches to support, deepen, and extend children's responses to literature
- Use poetry to explore issues of childhood
- Express their own thoughts and feelings through poetry writing.

| Meaning |  |
| :---: | :---: |
| UNDERSTANDINGS <br> Students will understand that... <br> - Poetry encourages readers of all ages to play with language. <br> - Illustrations and the structure/shape of a poem contribute to its meaning <br> - Poetry can be used to teach children about the mysteries of the world <br> - Poetry can provide insight into the cultural, historical, and social contexts in which it was written. | ESSENTIAL QUESTIONS <br> Students will keep considering... <br> - Why should children read poetry? <br> - How does the structure and shape of a text influence its meaning? <br> - Should poetry for children be didactic? <br> - How does poetry reflect the cultural and historical context in which it was written? |
| Acquisition |  |
| Students will know... <br> - Poetic devices/key terms <br> - Figurative language and its effect on a poem <br> - Criteria for evaluating poetry written for children | Students will be skilled at ... <br> - Interpreting figures of speech in context and analyze their role in the text. <br> - -Analyzing nuances in the meaning of words with similar denotations. |

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|  |  | original poem that reflects their knowledge of literary devices and children's <br> poetry themes. It also allows for student choice in terms of form and theme, <br> which encourages creativity and engagement. The presentation component <br> allows for peer feedback and reinforces public speaking skills. |
| :--- | :--- | :--- |

A short writing assignment to assess students' ability to recognize and use literary devices in their writing.

Summary of Key Learning Events and Instruction
Student success at transfer meaning and acquisition depends on...

The following learning events and instruction should follow the mini-lesson model of instruction: mini-lesson, small group work, conferring, and independent work.

Students will explain the difference between poetry picture books and concrete poetry. Choose one of each and analyze poetic devices and their effect on the story. Speculate how a child would respond to both.

Students will read selected poems from Robert Louis Stevenson's A Child's Garden of Verses. Close read one poem and analyze how his use of figurative language contributes to the overall meaning of the poem.

Students will read an excerpt from the textbook and use the textbook to create a practical guide that a child can use to read poems.

In a small group, think of a danger children face in the twenty-first century. Write a humorous cautionary tale in verse, looking at Shel Silverstein and Hilaire Belloc for inspiration. Then write a serious poem about the problem. Explain how both poems differ.

Whole class discussion: Nonsense poetry and light verse are a major part of the tradition of poetry for children. Why do you think

Progress Monitoring

Formative assessments through class discussions and written assignments.

Ongoing feedback from the teacher on student progress and areas for improvement.

Summative assessment at the end of the unit to measure students' understanding and growth in their ability to analyze and write children's poetry.
nonsense has played such an important role in children's poetry?

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# NEW MILFORD PUBLIC SCHOOLS 

New Milford, Connecticut


Grade 6 Accelerated

Mathematics

June 2023

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## New Milford's Mission Statement

The mission of the New Milford Public Schools, a collaborative partnership of students, educators, family and community, is to prepare each and every student to compete and excel in an ever-changing world, embrace challenges with vigor, respect and appreciate the worth of every human being, and contribute to society by providing effective instruction and dynamic curriculum, offering a wide range of valuable experiences, and inspiring students to pursue their dreams and aspirations.

## Grade 6 Accelerated

In this unique accelerated course, students focus on critical areas that build on grade 5 work and extend their learning into grade 7 content that builds upon the topics of: ratios and proportions, rational numbers and algebraic thinking standards. The successful completion of this course allows students to develop critical foundational knowledge to continue their work in the 7th grade accelerated course with a pathway to algebra in 8th grade. Note that this course is very fast paced and allows students to build concepts with meaning for transfer. The course entry is evidence based on a criteria utilizing multiple data points, performance and educator feedback.

Students begin their work by building on their prior knowledge of surface area by reasoning about relationships among shapes using hands-on models. Students compose and decompose shapes from more familiar ones to determine the area, surface area and solve real world problems. While investigating nets to find surface area, students will have an opportunity to work with algebraic expressions and extend that understanding into working with exponents. This work picks up later in the year and develops into writing, identifying, solving and analyzing equivalent expressions and equations with variables. The learning will continue further later in the year, upon building other prerequisites, into 7th grade content. This involves the use of earlier knowledge about expressions, properties of operations, and negative numbers to generate equivalent expressions and evaluate expressions. Students develop an understanding of rewriting an expression to demonstrate various aspects of real world problems. In addition, the students are provided with an opportunity to deepen their understanding of what it means to solve equations involving rational numbers, as well as construct and solve inequalities by graphing the solution sets.

For the Number System standards, sixth grade work focuses on expanding prior understanding of multiplication and division of whole numbers and decimals while applying the relationship between multiplication and division in order to explain why the procedure for dividing fractions works. Students use visual models to divide whole numbers by fractions and fractions by fractions to solve word problems. Furthermore, students extend their knowledge of numbers to the system of rational numbers which includes negative numbers. The focus for the grade is on the order and absolute value of rational numbers and location of the points in all four quadrants of the coordinate plane. However, this accelerated pathway extends students' understanding of grade seven work by exploring models
that represent the operations with integers, performs operations involving rational numbers, as well as build vocabulary and solve real world problems.

This course will take students' introduction of ratio concepts and equivalent ratios, grade 6 content, into grade seven where learners investigate to understand and calculate scale factors. Students develop skills such as: using ratio language to describe a ratio relationship between two quantities and solve ratio problems, identify, use, and represent equivalent ratios in the coordinate plane, justify solutions using ratio language and models such as double number line, tape diagram and tables. From this work, students are prepared to extend and apply their learning into converting measurements using unit rates. Learners investigate and learn the concept of percents which will lead to the use of percents to solve problems.

Later, grade seven content builds on equivalent ratios. Students use grade six content of unit rates and division with fractions to understand, interpret and represent proportional relationships in tables and graphs. Students go on to solve ratio problems and finally generalize formulas for circumference and area of circle using proportional reasoning to understand the relationship between them, including the constant of proportionality, pi and use them to solve problems.

Last, students have the opportunity to develop their ability to think statistically. Learners explore populations, learn about variables associated with populations and use measures of center such as (average, mode and median) to describe data sets. Students conclude their studies by displaying numerical data in plots on a number line, including dot plots, histograms and box plots and performing a statistical investigation to include the collection, organization and analysis of the data in order to capture the learning.

## Pacing Guide

Unit Title ..... \# of Weeks
Unit 1: Expressions and Equations: Area, Algebraic Expressions, and Exponents ..... 6
Unit 2: Decimals and Fractions: Base-Ten Operations, Division with Fractions, and Volume ..... 3
Unit 3: Ratio Reasoning: Ratio Concepts and Equivalent Ratios ..... 2
Unit 4: Ratio Reasoning: Unit Rates and Percents ..... 2
Unit 5: Algebraic Thinking: Equivalent Expressions and Equations with Variables ..... 3
Unit 6: Proportional Relationships: Ratios, Rates and Circles ..... 4
Unit 7: Positive and Negative Numbers: Absolute Value, Inequalities, and the Coordinate Plane ..... 3
Unit 8: Numbers and Operations: Add and Subtract Rational Numbers ..... 3
Unit 9: Numbers and Operations: Multiply and Divide Rational Numbers ..... 3
Unit 10: Algebraic Thinking: Expressions, Equations, and Inequalities ..... 3
Unit 11: Statistical Thinking: Data Distributions and Measures of Center and Variability ..... 3

## Stage 1 Desired Results

## ESTABLISHED GOALS

## CCSS.MATH.CONTENT.6.G.A. 1

Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real world and mathematical problems.

## CCSS.MATH.CONTENT.6.G.A. 4

Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.

## CCSS.MATH.CONTENT.6.EE.A. 1

Write and evaluate numerical expressions involving whole number exponents.

## CCSS.MATH.CONTENT.6.EE.A. 2

Write, read, and evaluate expressions in which letters stand for numbers.

## CCSS.MATH.CONTENT.6.EE.A.2a

Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation "Subtract y from 5" as 5-y.
CCSS.MATH.CONTENT.6.EE.A.2b Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example, describe the expression $2(8+7)$ as a product of two factors; view $(8+7)$ as both a

## Transfer

Students will be able to independently use their learning to model real world problems correctly and solve them with precision.

## Meaning

## UNDERSTANDINGS

Students will understand that...

- area of triangles, parallelograms and other polygons is related to the area of rectangles and its formula for calculating area
- area of parallelograms can be decomposed into parts that can be composed into rectangles
- similar to parallelograms, other polygons can be decomposed into parts and rearranged into familiar figures with known area formulas
- orders of operations and expressions can be used to capture the decomposition or composition of figures while determining area of polygons
- nets are two dimensional patterns for three dimensional figures and
- nets are used to visualize the faces and area of three dimensional figures
- surface area of a prism or pyramids as the sum of the areas of its faces
- an exponent is a notation representing repeated multiplication
- any base to the zero power is 1
- variables represent unknown quantities (a number or a specific set of numbers)
- the properties of operations used with numbers also apply to expressions with variables

ESSENTIAL QUESTIONS
Students will keep considering...

1. How can you find the area of a polygon by decomposing (deconstructing) it into other shapes?
2. What strategies could you use to recognize the existence of, and visualize components of three dimensional shapes that are not visible from a given viewpoint?
3. How can variables be used to represent and solve equations and inequalities in real world problems?
4. How can an equation be used to represent and solve a real world/mathematical situation?
single entity and a sum of two terms. CCSS.MATH.CONTENT.6.EE.A.2c Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). For example, use the formulas $\mathrm{V}=\mathrm{s} 3$ and A $=6 \mathrm{~s} 2$ to find the volume and surface area of a cube with sides of length $s=$ 1/2.

## CCSS.MATH.CONTENT.6.EE.B. 6

Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.
CCSS.MATH.CONTENT.6.NS.B.4:
Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12 . Use the distributive property to express a sum of two whole numbers $1-100$ with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express $36+8$ as $4(9+2)$.

- variables and expressions represent real-world experience(s)
- that a factor is a whole number that divides without a remainder into another number
- that a multiple is a whole number that is a product of the whole number and any other factor

| Students will know... | Students will be skilled at... |
| :--- | :--- |

- area
- base (of a parallelogram)
- base (of a power)
- base (of a triangle)
- coefficient
- compose
- cube
- decompose
- difference
- dimension
- edge
- evaluate
- exponent
- expression
- face
- factor
- greatest common factor (GCF)
- height (of a parallelogram)
- height (of a triangle)
- least common multiple (LCM)
- multiple
- net
- parallelogram
- perpendicular
- polygon
- power
- power of 10
- Finding the area of parallelograms, triangles and other polygons
- Identifying and sketching a net for a given three dimensional figure
- Finding the surface area of three dimensional figures
- Finding and evaluating numerical and algebraic expressions, including examples with whole number exponents only
- Finding the greatest common factor (GCF) and the least common multiple (LCM) of two whole numbers to solve real-world problems


| Stage 2-Evidence |  |  |
| :---: | :---: | :---: |
| Code | Evaluative Criteria | Assessment Evidence |
| T, M, A | Rubric Criteria: <br> Mathematical Concepts: <br> 4 - Explanation shows complete understanding of mathematical concepts. <br> 3 - Explanation shows substantial understanding of mathematical concepts. <br> 2 - Explanation shows some understanding of mathematical concepts. <br> 1 - Explanation shows very limited understanding of mathematical concepts OR is not written. <br> Strategy/Procedures: <br> 4 - Uses an efficient and effective strategy to solve the problem(s). <br> 3 - Uses an effective strategy to solve the problem(s). <br> 2 - Sometimes uses an effective strategy to solve the problem(s), but does not do it consistently. <br> 1 - Rarely uses an effective strategy to solve the problem(s). <br> Mathematical Errors: <br> 4-90-100\% of the steps and solutions have no mathematical errors. <br> 3 - Almost all (85-89\%) of the steps and solutions have no mathematical errors. <br> 2 - Most (75-84\%) of the steps and solutions have no mathematical errors. <br> 1 - More than 75\% of the steps and solutions have mathematical errors. <br> Completion: <br> 4 - All problems are completed. <br> 3-75\% of all problems are completed. <br> $2-50 \%$ of all problems are completed. <br> $1-25 \%$ or less of problems are completed. <br> Neatness and Organization: <br> 4 - The work is presented in a neat, clear, organized fashion that is easy to read. | PERFORMANCE TASK(S): <br> Goal: Use a real life scenario to choose appropriate models and strategies to plan for and solve a real world task related to agriculture, buying supplies <br> Role: Writing, using and evaluating algebraic expressions in real world situation(s) <br> Audience: Classmates <br> Products: Students reason about the supplies needed each week and the amount of storage available that Juan has for his hens. Analyzing the quantities available at the store, students decide the frequency for Juan's trips to the feed store. Last, students write an expression that represents the total cost of Juan's purchases for each trip to the store. <br> Standards for Success: scoring rubric including focus on explanation, process and accuracy of the solution <br> Differentiation: For more advanced students, utilize the challenge problem of having students identify the least number of bags each person could have bought by using the least common multiples. <br> For extra support, make a table to show how long the supply will last. Consider students of language learners and accommodations by providing images, as well as a calculator, charts or graphic organizer to assist with the algorithms and organization |


|  | 3 - The work is presented in a neat and organized <br> fashion that is usually easy to read. <br> $2-$ The work is presented in an organized fashion but <br> may be hard to read at times. <br> 1 - The work appears sloppy and unorganized. It is <br> hard to know what information goes together |  |
| :---: | :--- | :--- |
| T, M, A <br> T, M, A |  | OTHER EVIDENCE: <br> Common Unit Assessment: Area, algebraic expressions, and exponents <br> Prompt: What is important to understand about writing, interpreting and <br> evaluating numerical expressions to understand working with algebraic <br> expressions? <br> Skill Check: Daily Warm-ups and/or Exit Tickets <br> Homework: Almost daily |
| M, M, A |  |  |

STAGE 3

| Stage 3 - Learning Plan |  |  |
| :---: | :---: | :---: |
| Code <br> M <br> M | Pre-Assessm <br> - Unit Pre-Assessment and/or i-Ready Diagnostic results and/or Begi <br> - Teacher monitors for prerequisite understanding(s) and misconcep | ning of Unit Self Check n(s) though warm up questions |
| $\begin{gathered} \text { T, A } \\ \text { T, A } \\ \text { T, A } \\ \text { T, A } \\ \text { T, A } \\ \hline \text { T, M, A } \end{gathered}$ | Summary of Key Learning Events and Instruction <br> - Students will begin to explore and find the area of a parallelogram using whole number side lengths by composing/decomposing figures into known/prior knowledge figures associated with rectangles. <br> - Teacher will continue to guide students into developing and formulating the formula for a parallelogram. <br> - Students will continue to identify the base/height of parallelograms, as well as continue to practice the use of the formula $A=b \times h$ to find areas of parallelograms with fractional or decimal side lengths. <br> - Students will continue their work to explore the area of triangles by composing and decomposing into rectangles and parallelograms using hands-on activities. <br> - Teacher will facilitate students' discoveries to identify the base and height of a triangle, as well as develop the formula for the area of a triangle. <br> - Students will move further in this unit to identify and draw nets for three dimensional figures and use nets to find the surface area | Progress Monitoring <br> - Warm ups <br> - Classwork <br> - IXL <br> - Homework <br> - Exit Tickets <br> - Embedded Assessments <br> - Unit Assessment |

of those three dimensional figures.

- Teacher will develop opportunities to bridge into students' prior knowledge of recognizing/vocabulary of rectangular and triangular prisms and pyramids.
- Students will continue to identify the number of faces, edges, and vertices of three dimensional figures, as well understand that surface area of prisms and pyramids derives from the sum of the areas of their surfaces.
- Students move further in the units by writing simple algebraic expressions of verbal descriptions.
- Students discover further and the teacher facilitates the use of mathematical language to describe the parts of expressions.
- Students will continue to evaluate expressions by replacing variables with specific values and utilizing the orders of operations.
T, A - Students will explore the meaning of whole number exponents and what they represent.
- Teacher will provide opportunities and link prior knowledge of writing numerical and algebraic expressions by including the use of exponents.
- Students will evaluate numerical and algebraic expressions that involve exponents and develop a solid understanding of the order of operations when exponents are included.
- Students will conclude the unit by exploring and finding the greatest common factor of two whole numbers less than or equal to 100 , as well as least common multiple of two whole numbers less than or equal to 12 .
- Students will apply and use GCF or LCM to solve real-world problems.
- Assess students' knowledge and application and review misconceptions.
- Performance Task: Students will Use a real life scenario to choose appropriate models and strategies to plan for and solve a real world task related to agriculture, buying supplies.
- Assess knowledge and application though the unit CFA and review misconceptions as needed.

UNIT 2 - DECIMALS AND FRACTIONS: Base - Ten Operations, Division with Fractions, and Volume

| Stage 1 Desired Results |  |  |
| :---: | :---: | :---: |
| ESTABLISHED GOALS | Transfer |  |
| CCSS.MATH.CONTENT.6.NS.A. 1 <br> Interpret and compute quotients of fractions, and solve word problems | Students will be able to independently use their learning to attend to the precision of different quantities using standardized systems. |  |
|  | Meaning |  |
| fractions, e.g., by using visual fraction models and equations to represent the problem. For example, create a story context for $(2 / 3) \div(3 / 4)$ and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that $(2 / 3) \div(3 / 4)=8 / 9$ because $3 / 4$ of $8 / 9$ is $2 / 3$. (In general, $(a / b) \div(c / d)=$ ad/bc.) How much chocolate will each person get if 3 people share $1 / 2 \mathrm{lb}$ of chocolate equally? How many 3/4-cup servings are in $2 / 3$ of a cup of yogurt? How wide is a rectangular strip of land with length $3 / 4 \mathrm{mi}$ and area $1 / 2$ square mi ? <br> CCSS.MATH.CONTENT.6.NS.B. 2 <br> Fluently divide multi-digit numbers using the standard algorithm. <br> CCSS.MATH.CONTENT.6.NS.B. 3 <br> Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. CCSS.MATH.CONTENT.6.G.A. 2 | UNDERSTANDINGS <br> Students will understand that... <br> - the place value system plays a fundamental role when calculating with decimals <br> - the place value system can be used to further extend whole number division to express remainders as decimals <br> - $\quad$ similar to division of whole numbers, dividing with fractions can be interpreted as partitioning a quantity into groups of equal size and there is a relationships between the quotient, the dividend and the divisor <br> - Knowing about the relationship between multiplication and division helps when dividing with fractions <br> - Filling a solid with cubes and counting them gives the same result as using a volume formula <br> - Volume is three dimensional involving, length, width and height (sometimes the base can represent the length or width) | ESSENTIAL QUESTIONS <br> Students will keep considering... <br> 1. How are multiplying fractions and dividing fractions connected? <br> 2. Why does a fraction get smaller if multiplied by another fraction? Why does it grow if multiplied by a whole number greater than 1 ? <br> 3. Why can you multiply by the reciprocal when dividing fractions? <br> 4. What are the steps for dividing a fraction by fraction? Can we use common denominators to divide fraction by fraction? <br> 5. What is volume and how does it relate to the attributes of an individual figure? <br> 6. What strategies could you use to recognize the existence of, and visualize components of three dimensional shapes that are not visible from a given viewpoint? |
| Find the volume of a right rectangular | Acquisition |  |
| prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V=I w h$ and $V=b h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and | Students will know... <br> - algorithm <br> - base <br> - common denominator <br> - cube <br> - denominator <br> - dividend | Students will be skilled at... <br> - Using strategies for adding, subtracting, and multiplying decimals <br> - Using strategies for dividing with multi digit whole numbers and decimals <br> - Computing the quotients of fractions by using visual fraction models <br> - Dividing fractions and solving real world problems |


| mathematical problems. | - divisor <br> - equivalent fractions <br> - fraction <br> - numerator <br> - partial products <br> - partial quotient <br> - place value <br> - power of 10 <br> - quotient <br> - reciprocal <br> - remainder | - Finding the volume of a right rectangular prism with fractional edge lengths <br> - Using math vocabulary and precise language to describe strategy(s) that solves a problem <br> - Finding the volume of a rectangular prism <br> - Solving mathematical real world problems involving volume |
| :---: | :---: | :---: |


| Stage 2-Evidence |  |  |
| :---: | :---: | :---: |
| Code | Evaluative Criteria | Assessment Evidence |
| T, M, A | Rubric Criteria: <br> Mathematical Concepts: <br> 4 - Explanation shows complete understanding of mathematical concepts. <br> 3 - Explanation shows substantial understanding of mathematical concepts. <br> 2 - Explanation shows some understanding of mathematical concepts. <br> 1 - Explanation shows very limited understanding of mathematical concepts OR is not written. <br> Strategy/Procedures: <br> 4 - Uses an efficient and effective strategy to solve the problem(s). <br> 3 - Uses an effective strategy to solve the problem(s). <br> 2 - Sometimes uses an effective strategy to solve the problem(s), but does not do it consistently. <br> 1 - Rarely uses an effective strategy to solve the problem(s). <br> Mathematical Errors: <br> 4-90-100\% of the steps and solutions have no mathematical errors. <br> 3 - Almost all (85-89\%) of the steps and solutions have no mathematical errors. <br> 2 - Most (75-84\%) of the steps and solutions have no mathematical errors. <br> 1 - More than 75\% of the steps and solutions have mathematical errors. <br> Completion: <br> 4 - All problems are completed. <br> 3-75\% of all problems are completed. <br> $2-50 \%$ of all problems are completed. <br> $1-25 \%$ or less of problems are completed. <br> Neatness and Organization: <br> 4 - The work is presented in a neat, clear, organized fashion that is easy to read. | PERFORMANCE TASK(S): <br> Goal: Use a real life scenario to apply the concept of volume and division with fractions in order to design a packing plan for shipment with the requirements provided. <br> Role: Using volume, operations with fractions and decimals <br> Audience: Classmates <br> Products: Students analyze and reason the information given in the task in order to design a packing plan that meets the requirements of: finding the maximum number of cubes in a certain package considering the fractional dimensions, utilize the fewest number of boxes for an order, and no package must hold less than half of its content. <br> Standards for Success: scoring rubric including focus on explanation, process and accuracy of the solution <br> Differentiation: For more advanced students, utilize the challenge problem of having students to design a second package using more complex requirements. Consider students of language learners and accommodations by providing images, as well as a calculator, charts or graphic organizer to assist with the algorithms and organization |


|  | 3-The work is presented in a neat and organized <br> fashion that is usually easy to read. <br> 2 - The work is presented in an organized fashion but <br> may be hard to read at times. <br> 1 - The work appears sloppy and unorganized. It is <br> hard to know what information goes together |  |
| :--- | :--- | :--- |
| T, M, A <br> T, M, A |  | OTHER EVIDENCE: <br> Common Unit Assessment: Ten Operations, Division with Fractions, and Volume <br> Prompt: Why is the base 10 system and operations with whole numbers <br> important to understand operations with fractions? <br> Skill Check: Daily Warm-ups and/or Exit Tickets <br> M, A <br> T, M, A |
|  |  | Homework: Almost daily |

STAGE 3

## Stage 3 - Learning Plan

## Code

## Pre-Assessment

M

- Unit Pre-Assessment and/or i-Ready Diagnostic results and/or Beginning of Unit Self Check

M

- Teacher monitors for prerequisite understanding(s) and misconception(s) though warm up questions

T, A

- Students will extend their conceptual understanding of addition, subtraction and multiplication of decimals by bridging from the use of concrete models to the use of standard algorithms.
- With teacher facilitation and use of context, word problems, students practice the addition, subtraction, and multiplication of multi digit decimals using the standard algorithm.
- Students will explore and further develop the division of whole numbers using partial quotients by utilizing their prior knowledge from 5th grade of dividing whole numbers with up to four digit dividends and two digit divisors.
- Teachers will facilitate students' learning and understanding to formulate the connection between partial quotients and the standard algorithm using real life context.
- Students will continue to interpret the remainder of the real word problems.
- Students explore what it means to divide a fraction by a fraction using models and real life scenarios.
- Teachers moves are critical in this unit to direct students in understanding the use of multiplication equations that are related

Progress Monitoring

- Warm ups
- Classwork
- IXL
- Homework
- Exit Tickets
- Embedded Assessments
- Unit Assessment
to the division equations involving fractions; it is important for students to interpret the quotients as pertaining to a real world problem in order to further develop the meaning of division with fractions.
- Students continue to practice the division of fractions by understanding why we multiply by a reciprocal; teacher must make the connection that dividing with equal denominators is also possible but the reciprocal might be more efficient.
- Students will move further in the unit by understanding volume and the critical vocabulary associated.
- Teacher provides opportunities for students to physically explore the idea and the formula for calculating volume by using real work problems and context.
- Assess students' knowledge and application and review misconceptions.
T
- Performance Task: Students will use a real life scenario to choose appropriate models and strategies to plan for and solve a real world task related to volume and use of fractions.
- Assess knowledge and application through the unit CFA and review misconceptions as needed.


## ESTABLISHED GOALS

## CCSS.MATH.CONTENT.6.RP.A. 1

Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."

## CCSS.MATH.CONTENT.6.RP.A. 3

Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. CCSS.MATH.CONTENT.6.RP.A.3a Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.

## Transfer

Students will be able to independently use their learning to attend to the meaning and model symbolically with mathematics real-life situations involving ratios.

## Meaning

## UNDERSTANDINGS <br> ESSENTIAL QUESTIONS

Students will understand that...

- A ratio is one way of comparing two quantities when there are a units of one quantity for every $b$ units of another
- Equivalent ratios make the comparison and one can use that they know about multiples and factors to find equivalent ratios
- Reasoning about equivalent ratios can help one find the amount of one quantity when you know the amount of another quantity

Students will know...

- coordinate plane
- equivalent ratio
- ordered pair
- ratio
- $x$-axis
- x -coordinate
- $y$-axis
- y-coordinate

Students will keep considering...

1. How can you represent the relationship between two quantities or measures?
2. What is a rate and how do you identify equivalent rates?
3. How can I use models (tape diagrams, double number lines, ratio tables, coordinate plane, etc) to display an understanding of ratios and proportional relationships?

| Stage 2 - Evidence |  |  |
| :---: | :---: | :---: |
| Code | Evaluative Criteria | Assessment Evidence |
| T, M, A | Rubric Criteria: <br> Mathematical Concepts: <br> 4 - Explanation shows complete understanding of mathematical concepts. <br> 3 - Explanation shows substantial understanding of mathematical concepts. <br> 2 - Explanation shows some understanding of mathematical concepts. <br> 1 - Explanation shows very limited understanding of mathematical concepts OR is not written. <br> Strategy/Procedures: <br> 4 - Uses an efficient and effective strategy to solve the problem(s). <br> 3 - Uses an effective strategy to solve the problem(s). <br> 2 - Sometimes uses an effective strategy to solve the problem(s), but does not do it consistently. <br> 1 - Rarely uses an effective strategy to solve the problem(s). <br> Mathematical Errors: <br> 4-90-100\% of the steps and solutions have no mathematical errors. <br> 3 - Almost all (85-89\%) of the steps and solutions have no mathematical errors. <br> 2 - Most (75-84\%) of the steps and solutions have no mathematical errors. <br> 1 - More than 75\% of the steps and solutions have mathematical errors. <br> Completion: <br> 4 - All problems are completed. <br> 3-75\% of all problems are completed. <br> $2-50 \%$ of all problems are completed. <br> $1-25 \%$ or less of problems are completed. <br> Neatness and Organization: <br> 4 - The work is presented in a neat, clear, organized fashion that is easy to read. | PERFORMANCE TASK(S): <br> Goal: Students will apply ratio concepts and reasoning about equivalent ratios to a real life scenario where students need to develop a plan that mixes paint according to given specifications. <br> Role: Using equivalent ratios and maintaining correct ratios <br> Audience: Classmates <br> Products: Students make sense of the problem presented and reason to compare the amounts of each primary color of paint used with the amount of paint given in the problem. Given the specifications and using accurate ratios, students make a plan to determine the amounts needed/ cups of paint in order to make orange and purple paint. <br> Standards for Success: scoring rubric including focus on explanation, process and accuracy of the solution <br> Differentiation: For extending opportunity, allow students to research and/or provide other specifications to mix paint for the creation of other color paint. Consider students of language learners and accommodations by providing images, as well as a calculator, charts or graphic organizer to assist with the algorithms and organization. |


|  | 3-The work is presented in a neat and organized <br> fashion that is usually easy to read. <br> $2-$ The work is presented in an organized fashion but <br> may be hard to read at times. <br> 1 - The work appears sloppy and unorganized. It is <br> hard to know what information goes together |  |
| :---: | :--- | :--- |
| T, M, A <br> T, M, A |  | OTHER EVIDENCE: <br> Common Unit Assessment: Ratios Concepts and equivalent ratios <br> Prompt: What is important to understand ratios and how can they be <br> interpreted visually and symbolically using mathematics? <br> Skill Check: Daily Warm-ups and/or Exit Tickets <br> Homework: Almost daily |
| M, A |  | T, A |

STAGE 3

## Stage 3 - Learning Plan

\begin{tabular}{|c|c|c|}
\hline Code \(\begin{array}{r} \\ \\ M \\ M\end{array}\) \& \multicolumn{2}{|l|}{\begin{tabular}{l}
Pre-Assessment \\
- Unit Pre-Assessment and/or i-Ready Diagnostic results and/or Beginning of Unit Self Check \\
- Teacher monitors for prerequisite understanding(s) and misconception(s) though warm up questions
\end{tabular}} \\
\hline M
T, A
T, A
T, A

T, A \& \begin{tabular}{l}
Summary of Key Learning Events and Instruction <br>
- Students will work independently to complete pre-assessment of prior knowledge; teacher will plan and facilitate learning to clarify any prior misconception foundational to the new learning. <br>
- Teacher will engage students by presenting an activity to help students explore and discuss that a ratio is a relationship or comparison of two quantities or measures. Students discover by looking at images and develop ratio language to describe them such as "There are 3 game controllers for each screen." <br>
- Teachers will develop and present engaging warm-up questions to help explain the similarities and differences of fractions and ratios. Students review and practice equivalent fractions. <br>
- Teacher will develop a lesson and engage learners with the idea of comparing two quantities by describing how many units of one quantity there are for every $x$ units of another quantity. Students understand and practice that ratio language can be used to compare two quantities. <br>
- Teacher will develop a lesson and engage learners with the idea that a ratio can compare quantities in different units or quantities that represent parts of a larger whole. Students understand and

 \& 

Progress Monitoring <br>

- Warm ups <br>
- Classwork <br>
- IXL <br>
- Homework <br>
- Exit Tickets <br>
- Embedded Assessments <br>
- Unit Assessment
\end{tabular} <br>

\hline
\end{tabular}

| T, M,A <br> T, M, A <br> T, M, A | practice using mathematical notation to represent ratios. <br> - Teacher will model the use of tape diagrams, ratio tables, and picture diagrams to show how to represent ratios. Students explore the idea that two different ratios can express the same comparison. <br> - Students will practice independently and in teacher created groups the process of finding ratios in part to part, part to whole comparisons. <br> - Further in the unit, students explore strategies for generating equivalent ratios. Students recognize that equivalent ratios can be derived from multiplying both quantities in a ratio and practice doing so in word problems. <br> - Teacher(s) will model and facilitate students' learning to graph points that represent equivalent ratios; from this activity, students recognize that a graph is another way to represent and generate equivalent ratios. <br> - Lastly, students develop strategies to compare ratios and solve problems; students deepen their understanding of using tables and tape diagrams to compare ratios and generate equivalent ratios. <br> - Assess students' knowledge and application and review misconceptions. <br> - Performance Task: will apply ratio concepts and reasoning about equivalent ratios to a real life scenario where students need to develop a plan that mixes paint according to given specifications. <br> - Assess knowledge and application though the unit CFA and review misconceptions as needed. misconceptions as needed. |
| :---: | :---: |

## ESTABLISHED GOALS

## CCSS.MATH.CONTENT.6.RP.A. 2

## Understand the concept of a unit rate

 $a / b$ associated with a ratio $a: b$ with $b \neq$ 0 , and use rate language in the context of a ratio relationship. For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $3 / 4$ cup of flour for each cup of sugar." "We paid $\$ 75$ for 15 hamburgers, which is a rate of $\$ 5$ per hamburger." (Note: Expectations for unit rates in this grade are limited to non complex fractions.) CCSS.MATH.CONTENT.6.RP.A. 3Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. CCSS.MATH.CONTENT.6.RP.A.3b Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?
CCSS.MATH.CONTENT.6.RP.A.3c Find a percent of a quantity as a rate per 100 (e.g., $30 \%$ of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.

## CCSS.MATH.CONTENT.6.RP.A.3.d

Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

Transfer
Students will be able to independently use their learning to attend to the meaning and model symbolically with mathematics real-life situations involving ratios and percentages.

## Meaning

## UNDERSTANDINGS

Students will understand that...

- A ratio is a relationship or comparison of two quantities, or measures, where there are $a$ units of one quantity for every $b$ units of the other
- Equivalent ratios make the same comparison and knowledge about the multiples and factors can be used to find equivalent ratios
- Order is important when writing a ratio and ratios are written or expressed as: $a$ to $b, a: b$, or $a / b$
- A ratio can compare two parts or a part and a whole
- Reasoning about equivalent ratios can help find the amount of one quantity when you know the amount of the other quantity
- A rate is a special ratio that compares two quantities with different units of measure; for example a truck going 200 miles on 10 gallons of gas
- A unit rate expresses a ratio as a part to one
- The @ sign can used to interpret rate, as well as words per and/or each
- A percent is a way of expressing a rate per 100

| Acquisition |  |
| :--- | :--- |
| Students will know... | Students will be skilled at... |
| • convert | • Comparing rates to solve real-world problems |
| - equivalent fractions | - Using unit rates to find equivalent ratios |
| - equivalent ratios | - Converting measurement units using rates |
|  | - Expressing a percent as a decimal or a fraction |

- convert
- equivalent fractions
- Converting measurement units using rates
- Expressing a percent as a decimal or a fraction

|  | $\bullet$ fraction |
| :--- | :--- | :--- |
| $\bullet$ | per |
| $\bullet$ | percent |
| $\bullet$ | rate |
| $\bullet$ | ratio |
| $\bullet$ | unit rate |
|  |  |

- Finding a given percent of a number
- Finding what percent one number is of another number
- Finding the whole when given a part and a percent
- Using mathematical vocabulary precisely to explain ratios, rates and percents

STAGE 2
Stage 2 - Evidence

| Code | Evaluative Criteria | Assessment Evidence |
| :---: | :---: | :---: |
| T, M, A | Rubric Criteria: <br> Mathematical Concepts: <br> 4 - Explanation shows complete understanding of mathematical concepts. <br> 3 - Explanation shows substantial understanding of mathematical concepts. <br> 2 - Explanation shows some understanding of mathematical concepts. <br> 1 - Explanation shows very limited understanding of mathematical concepts OR is not written. <br> Strategy/Procedures: <br> 4 - Uses an efficient and effective strategy to solve the problem(s). <br> 3 - Uses an effective strategy to solve the problem(s). <br> 2 - Sometimes uses an effective strategy to solve the problem(s), but does not do it consistently. <br> 1 - Rarely uses an effective strategy to solve the problem(s). <br> Mathematical Errors: <br> $4-90-100 \%$ of the steps and solutions have no mathematical errors. <br> 3 - Almost all (85-89\%) of the steps and solutions have no mathematical errors. <br> 2 - Most (75-84\%) of the steps and solutions have no mathematical errors. | PERFORMANCE TASK(S): <br> Goal: Students will apply their understanding of unit rates and percentages in order to find the amount of time and how many miles each person drives on a road trip. <br> Role: Using ratios and percentages in real life situations <br> Audience: Classmates <br> Products: Students make sense of the problem presented and reason to identify the different representations used for each condition such as, the rate of speed for the trip and how many miles the trip is. Students will accurately use different types of models and test their solutions. <br> Standards for Success: scoring rubric including focus on explanation, process and accuracy of the solution <br> Differentiation: For extension opportunities, provide a different scenario changing the conditions and allowing for more complex thinking. <br> Consider students of language learners and accommodations by providing images, as well as a calculator, charts or graphic organizer to assist with the algorithms and organization. |


|  | 1 - More than 75\% of the steps and solutions have <br> mathematical errors. <br> Completion: <br> $4-$ All problems are completed. <br> $3-75 \%$ of all problems are completed. <br> $2-50 \%$ of all problems are completed. <br> $1-25 \%$ or less of problems are completed. <br> Neatness and Organization: <br> $4-$ The work is presented in a neat, clear, organized <br> fashion that is easy to read. <br> $3-$ The work is presented in a neat and organized <br> fashion that is usually easy to read. <br> $2-$ The work is presented in an organized fashion but <br> may be hard to read at times. <br> $1-$ The work appears sloppy and unorganized. It is <br> hard to know what information goes together | OTHER EVIDENCE: <br> Common Unit Assessment: Unit Rates and Percents <br> Skill Check: Daily Warm-ups and/or Exit Tickets <br> Homework: Almost daily |
| :--- | :--- | :--- |
| T, M, A <br> M, A |  |  |
| T, A A |  |  |

STAGE 3

| Stage 3 - Learning Plan |  |  |
| :---: | :---: | :---: |
| Code <br> M <br> M | Pre-Assessme <br> - Unit Pre-Assessment and/or i-Ready Diagnostic results and/or Begin <br> - Teacher monitors for prerequisite understanding(s) and misconcept | ning of Unit Self Check n(s) though warm up questions |
| T, A <br> T, A <br> T, A | Summary of Key Learning Events and Instruction <br> - Students will extend their knowledge and reasoning about ratios to explore rates; students will explore the idea that a rate is a ratio that compares the number of units of one quantity to 1 unit of another quantity. Rates are often started using the word "per"and omitting the number 1. <br> - Teacher will develop a lesson to engage students in using various strategies for using unit rates to find an unknown quantity in an equivalent ratio. <br> - Students will discuss and practice to understand that real life rate problems can be solved by dividing numbers in a ratio to find the unit rate and use the unit rate as a multiplier to solve other | Progress Monitoring <br> - Warm ups <br> - Classwork <br> - IXL <br> - Homework <br> - Exit Tickets <br> - Embedded Assessments <br> - Unit Assessment |

mathematical problems.

- Teacher and students explore, discuss and solve unit rate problems including constant speed and unit pricing
T, A - Students will continue to apply the concept of unit rates to find unknown values in equivalent ratios when three or more values are given.
T, A - Teacher will develop a lesson engaging students using various strategies to convert measurements by using ratio reasoning in context within metric and customary systems.
T, A - Teacher will develop a lesson engaging students to explore percents as a rate per 100. Students practice to understand the modeling of percent(s) on a hundredths grid and/ or on a bar model similar to a fraction representation.
- Teacher will develop a lesson engaging students to understand that a percent is another way to express a portion of a quantity. It is critical that students discuss and practice to understand the relationships between fractions, percents and decimals.
- Students discuss and practice, using real life scenarios, percents at a rate of 100 .
- Assess students' knowledge and application and review misconceptions.
- Performance Task: Students will apply their understanding of unit rates and percentages in order to find the amount of time and how many miles each person drives on a road trip.
- Assess knowledge and application though the unit CFA and review misconceptions as needed


## ESTABLISHED GOALS

## CCSS.MATH.CONTENT.6.NS.B.4:

Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12 . Use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express $36+8$ as $4(9+2)$.

## CCSS.MATH.CONTENT.6.EE.A. 3

Apply the properties of operations to generate equivalent expressions. For example, apply the distributive property to the expression $3(2+x)$ to produce the equivalent expression $6+3 x$; apply the distributive property to the expression $24 x+18 y$ to produce the equivalent expression $6(4 x+3 y)$; apply properties of operations to $\mathrm{y}+\mathrm{y}+\mathrm{y}$ to produce the equivalent expression $3 y$. CCSS.MATH.CONTENT.6.EE.A. 4 Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). For example, the expressions $\mathrm{y}+\mathrm{y}+\mathrm{y}$ and 3 y are equivalent because they name the same number regardless of which number y stands for.

## CCSS.MATH.CONTENT.6.EE.B. 5

Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a

## Transfer

Students will be able to independently use their learning to make use of algebraic structure by finding patterns and use algebraic relationships to solve problems.

## UNDERSTANDINGS <br> Students will understand that...

- Variables can be used to write and evaluate expressions with whole number exponents
- Any base to the zero power is 1
- Properties can be used to generate equivalent expressions and identify equivalence
- Variables can be used to represent, write, and solve equations and inequalities for real world problems
- What it means to solve an equation and what is meant by a solution of an equation
- An equation with variables can be true or false depending on the value substituted for the variable
- Solving an equation means finding a value for the variable that makes the equation true
- What it means to solve an inequality and what is the meaning of the solution
- Evaluate whether a number in a specific set is a solution to an inequality


## Acquisition

Students will know...

- axis
- coefficient
- dependent variable
- distributive property
- equation
- equivalent expressions
- expression


## Meaning

## ESSENTIAL QUESTIONS

Students will keep considering...

1. How can you apply properties of operations to generate equivalent expressions?
2. How can variables be used to represent and solve equations and inequalities in real world problems?
3. How can an equation be used to represent and solve a real world/mathematical situation?
4. How can you distinguish between an independent variable and a dependent variable?
5. How does the change in one variable affect the change in the other?
6. How can you relate tables and graphs to equations?

Students will be skilled at...

- Identifying and writing equivalent expressions
- Determining whether a given value is a solution to an equation
- Writing equations with variables to represent real world problems
- Solving equations that represent real world problems
- Identifying independent and depend variables
given number in a specified set makes an equation or inequality true.


## CCSS.MATH.CONTENT.6.EE.B. 7

## Solve real-world and mathematical

 problems by writing and solving equations of the form $x+p=q$ and $p x=$ $q$ for cases in which $p, q$ and $x$ are all nonnegative rational numbers.
## CCSS.MATH.CONTENT.6.EE.C. 9

Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d=65 t$ to represent the relationship between distance and time.

- greatest common factor
- independent variable
- inverse operations
- like terms
- ordered pair
- rate
- reciprocal
- solution of an equation
- term
- variable
- Writing equations(s) to represent the relationships between independent and depend variables
- Analyzing the relationship between variables
- Using math vocabulary and precise language to describe writing equivalent expressions and solving equations

| Stage 2 - Evidence |  |  |
| :---: | :---: | :---: |
| Code | Evaluative Criteria | Assessment Evidence |
| T, M, A | Rubric Criteria: <br> Mathematical Concepts: <br> 4 - Explanation shows complete understanding of mathematical concepts. <br> 3 - Explanation shows substantial understanding of mathematical concepts. <br> 2 - Explanation shows some understanding of mathematical concepts. <br> 1 - Explanation shows very limited understanding of mathematical concepts OR is not written. <br> Strategy/Procedures: <br> 4 - Uses an efficient and effective strategy to solve the problem(s). <br> 3 - Uses an effective strategy to solve the problem(s). <br> 2 - Sometimes uses an effective strategy to solve the problem(s), but does not do it consistently. <br> 1 - Rarely uses an effective strategy to solve the problem(s). <br> Mathematical Errors: <br> 4-90-100\% of the steps and solutions have no mathematical errors. <br> 3 - Almost all (85-89\%) of the steps and solutions have no mathematical errors. <br> 2 - Most (75-84\%) of the steps and solutions have no mathematical errors. <br> 1 - More than 75\% of the steps and solutions have mathematical errors. <br> Completion: <br> 4 - All problems are completed. <br> 3-75\% of all problems are completed. <br> $2-50 \%$ of all problems are completed. <br> $1-25 \%$ or less of problems are completed. <br> Neatness and Organization: <br> 4 - The work is presented in a neat, clear, organized fashion that is easy to read. | PERFORMANCE TASK(S): <br> Goal: Students will apply their understanding of writing and solving equations in a real life scenario by determining the plan and cost of a fence. <br> Role: Developing and solving equations to real life situations <br> Audience: Classmates <br> Products: Students make sense of the problem presented and reason to: find the length of the fence, choose the width of the board to best fit the conditions in the problem, and determine total cost. <br> Standards for Success: scoring rubric including focus on explanation, process and accuracy of the solution <br> Differentiation: For extension opportunities, provide a different scenario changing the conditions and allowing for more complex thinking. Consider students of language learners and accommodations by providing images, as well as a calculator, charts or graphic organizer to assist with the algorithms and organization. |


|  | 3 - The work is presented in a neat and organized <br> fashion that is usually easy to read. <br> $2-$ The work is presented in an organized fashion but <br> may be hard to read at times. <br> $1-$ The work appears sloppy and unorganized. It is <br> hard to know what information goes together | OTHER EVIDENCE: <br> Common Unit Assessment: Area, algebraic expressions, and exponents <br> Prompt: What is the best way to represent and analyze a relationship between <br> variables? <br> Skill Check: Daily Warm-ups and/or Exit Tickets <br> Homework: Almost daily |
| :--- | :--- | :--- |
| T, M, A <br> M, A |  |  |
| M, A |  |  |

## STAGE 3

| Stage 3 - Learning Plan |  |  |
| :---: | :---: | :---: |
| Code <br> M <br> M | Pre-Assessm <br> - Unit Pre-Assessment and/or i-Ready Diagnostic results and/or Begi <br> - Teacher monitors for prerequisite understanding(s) and misconcep | ning of Unit Self Check on(s) though warm up questions |
| $\begin{aligned} & \text { T, A } \\ & \text { T, A } \\ & \text { T, A } \\ & \text { T, A } \\ & \text { T, A } \\ & \text { T, A } \end{aligned}$ | Summary of Key Learning Events and Instruction <br> - Students will engage in tasks that explore the idea that writing a numerical expression in a different form can help in making sense of a problem. <br> - Teacher will develop opportunities to help students understand that the distributive property can be applied in reverse to write a sum as a product; teacher will correct misconceptions by exploring examples and non-examples. <br> - Teacher and students discuss and utilize strategies for applying the distributive property to write equivalent expressions through word problems. <br> - Teacher will develop a lesson for students to explore the idea of using a bar model to model an equation with and without a variable. <br> - Students will further explore and use hanger diagrams to represent the relationship between two expressions and that a balanced hanger represents an equation and an unbalanced hanger represents an inequality. <br> - Teachers provide opportunities for students to explore substitution to determine whether a given value makes an | Progress Monitoring <br> - Warm ups <br> - Classwork <br> - IXL <br> - Homework <br> - Exit Tickets <br> - Embedded Assessments <br> - Mid-Unit Assessment |

## equation true or false.

- Students develop and refine their skills to balance equations and maintain them equal by performing the same operation(s) to the both sides of the equal sign; at all times students explore these concepts through word problems to develop meaning and application.
- Students continue to write one step equations to model real life situations and interpret solutions.
- Teacher will continue to facilitate and help students identify the independent and dependent variables between two quantities.
- Students conclude the unit by using graphs and tables to analyze the relationship between the independent and dependent variables.
- Assess students' knowledge and application and review misconceptions.
- Performance Task: Students will apply their understanding of writing and solving equations in a real life scenario by determining the plan and cost of a fence.
- Assess knowledge and application though the unit CFA and review misconceptions as needed.


## ESTABLISHED GOALS

## CCSS.MATH.CONTENT.7.G.A. 1

## Solve problems involving scale

 drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.
## CCSS.MATH.CONTENT.7.G.B. 4

## Know the formulas for the area and

 circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.
## CCSS.MATH.CONTENT.7.RP.A. 1

Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. For example, if a person walks $1 / 2$ mile in each $1 / 4$ hour, compute the unit rate as the complex fraction $(1 / 2) /(1 / 4)$ miles per hour, equivalently 2 miles per hour. CCSS.MATH.CONTENT.7.RP.A. 2
Recognize and represent proportional relationships between quantities.

## CCSS.MATH.CONTENT.7.RP.A.2.a

Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.

## CCSS.MATH.CONTENT.7.RP.A.2.b

Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.
CCSS.MATH.CONTENT.7.RP.A.2.C
Represent proportional relationships by

## Transfer

Students will be able to independently use their learning to analyze proportional relationships and use them to solve problems.

## UNDERSTANDINGS <br> ESSENTIAL QUESTIONS

Students will understand that...

- The structure of computing unit rates with whole numbers is the same concepts as unit rates with ratios and fractions
- Knowledge of ratios is transferred and utilized to explore proportional relationships
- A proportional relationship is one in which one quantity is a constant multiple of another
- The distance around the circle, circumference, divided by the distance across, diameter, leads to the same quotient known as number called pi $-\pi$
Acquisition

Students will know...

- center of a circle
- circle
- circumference
- complex fraction
- constant of proportionality
- coordinate plane
- diameter
- equivalent ratios
- ordered pair
- origin
- pi-m
- proportional relationship
- radius
- rate


## Meaning

Students will keep considering...

1. How can ratios and proportions allow you to solve real world situations, such as your travel time on a road trip?
2. How can you identify a proportional relationship from a table, graph or equation?
3. How can understanding unit rate, help with shopping, for example figuring out discounts?

Students will be skilled at...

- Finding actual distance(s) given scale drawings
- Finding actual area(s) given scale drawings
- Finding unit rates with complex fractions
- Identifying proportional relationships and constant of proportionality
- Writing an equation to represent a proportional relationship and interpreting graphs of those proportional relationships
- Finding the circumference and area of circles
- Making connections between representations of proportional relationships by explaining their similarities and differences

| equations. For example, if total cost <br> t is proportional to the number $n$ of <br> items purchased at a constant price p, <br> the relationship between the total cost <br> and the number of items can be | $\bullet$ ratio |  |  |
| :--- | :--- | :--- | :--- |
| expressed as $\mathrm{t}=\mathrm{pn}$. |  |  |  |
| CCSS.MATH.CONTENT.7.RP.A.2.d <br> Explain what a point $(x, y)$ on the graph <br> of a proportional relationship means <br> in terms of the situation, with special <br> attention to the points $(0,0)$ and $(1, r)$ |  |  |  |
| where r is the unit rate. |  |  |  |


| Stage 2-Evidence |  |  |
| :---: | :---: | :---: |
| Code | Evaluative Criteria | Assessment Evidence |
| T, M, A | Rubric Criteria: <br> Mathematical Concepts: <br> 4 - Explanation shows complete understanding of mathematical concepts. <br> 3 - Explanation shows substantial understanding of mathematical concepts. <br> 2 - Explanation shows some understanding of mathematical concepts. <br> 1 - Explanation shows very limited understanding of mathematical concepts OR is not written. <br> Strategy/Procedures: <br> 4 - Uses an efficient and effective strategy to solve the problem(s). <br> 3 - Uses an effective strategy to solve the problem(s). <br> 2 - Sometimes uses an effective strategy to solve the problem(s), but does not do it consistently. <br> 1 - Rarely uses an effective strategy to solve the problem(s). <br> Mathematical Errors: <br> $4-90-100 \%$ of the steps and solutions have no mathematical errors. <br> 3 - Almost all (85-89\%) of the steps and solutions have no mathematical errors. <br> 2 - Most (75-84\%) of the steps and solutions have no mathematical errors. <br> 1 - More than 75\% of the steps and solutions have mathematical errors. <br> Completion: <br> 4 - All problems are completed. <br> 3-75\% of all problems are completed. <br> 2-50\% of all problems are completed. <br> $1-25 \%$ or less of problems are completed. <br> Neatness and Organization: <br> 4 - The work is presented in a neat, clear, organized fashion that is easy to read. | PERFORMANCE TASK(S): <br> Goal: Students will apply their understanding of ratios and proportional relationships to compare pricing rates and determine the lowest cost. <br> Role: Using Ratios and Proportional Relationships <br> Audience: Classmates <br> Products: Students make sense of the problem presented and reason to: write an equation that represents each company's cost per square foot. In addition students determine the lowest cost and find total pricing. <br> Standards for Success: scoring rubric including focus on explanation, process and accuracy of the solution <br> Differentiation: For extension opportunities, provide a different scenario changing the conditions and allowing for more complex thinking. Consider students of language learners and accommodations by providing images, as well as a calculator, charts or graphic organizer to assist with the algorithms and organization. |


|  | 3-The work is presented in a neat and organized <br> fashion that is usually easy to read. <br> 2 - The work is presented in an organized fashion but <br> may be hard to read at times. <br> 1 - The work appears sloppy and unorganized. It is <br> hard to know what information goes together |  |
| :---: | :--- | :--- |
| T, M, A <br> T, M, A |  | OTHER EVIDENCE: <br> Common Unit Assessment: Area, algebraic expressions, and exponents <br> Prompt: How can you use the side length of a square to determine the diameter <br> of a circle when: the square is located outside or inside the square touching the <br> circumference in four locations perpendicularly and sharing the same origin?? <br> Skill Check: Daily Warm-ups and/or Exit Tickets <br> Homework: Almost daily |
| M, A <br> T, M, A |  |  |

STAGE 3

| Stage 3 - Learning Plan |  |  |
| :---: | :---: | :---: |
| Code <br> $M$ <br> $M$ | Pre-Assessm <br> - Unit Pre-Assessment and/or i-Ready Diagnostic results and/or Beg <br> - Teacher monitors for prerequisite understanding(s) and misconcep | ning of Unit Self Check on(s) though warm up questions |
| T, A <br> T, A <br> T, A <br> T, A <br> T, A <br> T, A <br> T, A | Summary of Key Learning Events and Instruction <br> - Students build on prior knowledge from grade 6 and explore the idea that rates and ratios can be applied to make scale drawings. <br> - Teacher provides opportunities for students to explore and apply the understanding that scale drawings are figures that are identical in shape but not size with side lengths in equivalent ratios. <br> - Students will further work to refine finding distance using scale drawing and scale factor. <br> - Teacher will develop opportunities for students to explore the idea that fractions can be used to express unit rates. <br> - Students practice unit rates expressed as fractions and use them to solve problems. <br> - Next in the unit, students extend their work and explore the idea that equivalent ratios have the same unit rate and that a group of them represents a proportional relationship. <br> - With teacher facilitation, students continue to refine their learning on what it means when two quantities have a proportional relationship by using tables and number lines. | Progress Monitoring <br> - Warm ups <br> - Classwork <br> - IXL <br> - Homework <br> - Exit Tickets <br> - Embedded Assessments <br> - Unit Assessment |


| T, A | - Students move into using tables to graph the proportional relationships; they recognize that the graph of a proportional relationship is a straight line through the origin. |
| :---: | :---: |
| T, A | - From looking at patterns, students, with teacher guidance, understand that the constant of proportionality can be used to find the value of one quantity in a proportional relationship when the other quantity is known. |
| T, A | - Last in the unit, students learn that a circle is defined by points that are of equal distance from a fixed center point. |
| T, A | - Students learn and apply learning of circumference and of diameter in word problems, as well as identify pi as the relationship between the circumference and the diameter of a circle being a constant of proprotionality. |
| T, M, A | - Assess students' knowledge and application and review misconceptions. |
| T | - Performance Task: Students will apply their understanding of ratios and proportional relationships to compare pricing rates and determine the lowest cost. |
| T, A | - Assess knowledge and application though the unit CFA and review misconceptions as needed. |

UNIT 7 - POSITIVE AND NEGATIVE NUMBERS: Absolute Value, Inequalities, and the Coordinate Plane

## Stage 1 Desired Results

## ESTABLISHED GOALS

## CCSS.MATH.CONTENT.6.G.A. 3

Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.

## CCSS.MATH.CONTENT.6.NS.C. 5

Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.

## CCSS.MATH.CONTENT.6.NS.C. 6

Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.
CCSS.MATH.CONTENT.6.NS.C.6.a Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., $-(-3)$ $=3$, and that 0 is its own opposite. CCSS.MATH.CONTENT.6.NS.C.6.b Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane;

## Transfer

Students will be able to independently use their learning to attend to the meaning of quantities and relate the concept of positive and negative numbers to real-world application.

## Meaning

## UNDERSTANDINGS

Students will understand that...

- Positive and negative numbers can be utilized to describe quantities with opposite values
- All positive and negative numbers have both a distance and a direction from 0
- A number's distance from 0 it is called the absolute value
- The number line is utilized and extended accordingly to show and compare positive and negative numbers, as well as their absolute value
- An inequality with a variable can have infinitely many solutions which can be shown on a number line graphically
- The coordinate plane extends to negative numbers and utilizing absolute value the distance of two points can be used regardless of quadrant position


## ESSENTIAL QUESTIONS

Students will keep considering...

1. When comparing numbers, how do you know which one is greater?
2. How are positive and negative numbers used to represent real world scenarios and everyday life concepts?
3. How is a number line similar to an absolute value and how are they different?
4. How do you know whether you should add or subtract the distances of each point from the axis when finding the distance between two points?

|  | Acquisition |
| :--- | :--- |
| Students will know... | Students |

- absolute value
- inequality
- integers
- negative numbers
- opposite numbers
- origin
- perimeter
- polygon
- positive numbers

Students will be skilled at ...

- Plotting integers and rational numbers on number lines to represent real world problem
- Comparing and ordering positive and negative numbers
- Determining if a number/ value is a solution of an inequality
- Writing and graphing inequalities to represent real world context(s)
- Plotting ordered pairs in all four quadrants of a coordinate plane; Quadrant I (+,+), Quadrant II
recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.


## CCSS.MATH.CONTENT.6.NS.C.6.c

 Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.
## CCSS.MATH.CONTENT.6.NS.C. 7

Understand ordering and absolute value of rational numbers.

## CCSS.MATH.CONTENT.6.NS.C.7.a

Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. For example, interpret -3 $>-7$ as a statement that -3 is located to the right of -7 on a number line oriented from left to right.
CCSS.MATH.CONTENT.6.NS.C.7.b
Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write $-3^{\circ} \mathrm{C}>-7^{\circ} \mathrm{C}$ to express the fact that $-3^{\circ} \mathrm{C}$ is warmer than $-7^{\circ} \mathrm{C}$.
CCSS.MATH.CONTENT.6.NS.C.7.c
Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. For example, for an account balance of -30 dollars, write $|-30|=30$ to describe the size of the debt in dollars.

## CCSS.MATH.CONTENT.6.NS.C.7.d

Distinguish comparisons of absolute value from statements about order. For example, recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars.

- quadrants
- rational numbers
- reflection
- solution of an inequality
(-,+), Quadrant III (-,-) and Quadrant IV (+,-)
- Finding distances between points in the coordinate plane by using coordinates and absolute value
- Solving problems about polygons presented in the coordinate system
- Engaging into listening and discussing mathematical ideas, as well as explaining one another's ideas


## CCSS.MATH.CONTENT.6.NS.C. 8

Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane.
Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.

## CCSS.MATH.CONTENT.6.EE.B. 5

Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

## CCSS.MATH.CONTENT.6.EE.B. 8

Write an inequality of the form $x>c$ or $x$ $<\mathrm{c}$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $\mathrm{x}>\mathrm{c}$ or $\mathrm{x}<\mathrm{c}$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.

| Stage 2 - Evidence |  |  |
| :---: | :---: | :---: |
| Code | Evaluative Criteria | Assessment Evidence |
| T, M, A | Rubric Criteria: <br> Mathematical Concepts: <br> 4 - Explanation shows complete understanding of mathematical concepts. <br> 3 - Explanation shows substantial understanding of mathematical concepts. <br> 2 - Explanation shows some understanding of mathematical concepts. <br> 1 - Explanation shows very limited understanding of mathematical concepts OR is not written. <br> Strategy/Procedures: <br> 4 - Uses an efficient and effective strategy to solve the problem(s). <br> 3 - Uses an effective strategy to solve the problem(s). <br> 2 - Sometimes uses an effective strategy to solve the problem(s), but does not do it consistently. <br> 1 - Rarely uses an effective strategy to solve the problem(s). <br> Mathematical Errors: <br> 4-90-100\% of the steps and solutions have no mathematical errors. <br> 3 - Almost all (85-89\%) of the steps and solutions have no mathematical errors. <br> 2 - Most (75-84\%) of the steps and solutions have no mathematical errors. <br> 1 - More than 75\% of the steps and solutions have mathematical errors. <br> Completion: <br> 4 - All problems are completed. <br> 3-75\% of all problems are completed. <br> $2-50 \%$ of all problems are completed. <br> $1-25 \%$ or less of problems are completed. <br> Neatness and Organization: <br> 4 - The work is presented in a neat, clear, organized fashion that is easy to read. | PERFORMANCE TASK(S): <br> Goal: Use real data accumulated in Nome, Alaska,over eight days, to answer questions accurately about temperature by interpreting and comparing points in the coordinate plane. <br> Role: Interpreter of data in graphs <br> Audience: Classmates <br> Products: This task focuses students' attention on the $y$-values of the points, asking for the greatest $y$-value and the least $y$-value, as well as the greatest difference between $y$-values when the $x$-values are the same. <br> Standards for Success: scoring rubric including focus on explanation, process and accuracy of the solution <br> Differentiation: For more advanced students you can challenge them by using the task that challenges them to find distances between points. |


|  | 3-The work is presented in a neat and organized <br> fashion that is usually easy to read. <br> $2-$ The work is presented in an organized fashion but <br> may be hard to read at times. <br> 1 - The work appears sloppy and unorganized. It is <br> hard to know what information goes together |  |
| :---: | :--- | :--- |
| T, M, A |  | OTHER EVIDENCE: <br> Common Unit Assessment: Absolute Value, Inequalities, and the Coordinate <br> Plane <br> Prompt: Given a point in the coordinate plane, what possible pair of coordinates <br> can show the reflection of that point? Explain through an example. <br> Skill Check: Daily Warm-ups and/or Exit Tickets <br> Homework: Almost daily |
| T, M, A |  | M, A |

STAGE 3

| Stage 3 - Learning Plan |  |  |
| :---: | :---: | :---: |
| Code <br> M <br> M | Pre-Assessm <br> - Unit Pre-Assessment and/or i-Ready Diagnostic results and/or Beg <br> - Teacher monitors for prerequisite understanding(s) and misconce | ning of Unit Self Check n(s) though warm up questions |
| T, A <br> A <br> A <br> T, A | Summary of Key Learning Events and Instruction <br> - Teacher will select an activity or 3 Act task to spike curiosity and engagement with number lines; Example: Students work with partner(s) to place cards with a mix of whole numbers, integers, decimals in an open number line using prior knowledge and reasoning. <br> - Teacher will engage students by presenting a lesson to introduce and to help students explore with multiple examples using positive, negative integers and zero to represent real world situations such as bank accounts with credits and debits, temperature, and above and below sea levels. <br> - Teacher will engage students through an activity such as a 3 Act Task to introduce the need of a coordinate system (this will be brought up later while learning about and using the coordinate system); students investigate the use of both vertical and horizontal number lines to illustrate real world scenarios. <br> - Teacher will engage students in activity(s) that allow students to create their own examples of real word scenarios of positive and negative numbers on number lines and explain orally in groups | Progress Monitoring <br> - Warm ups <br> - Classwork <br> - IXL <br> - Homework <br> - Exit Tickets <br> - Embedded Assessments <br> - Unit Assessment |

the explanation of 0 in each situation.

- Teacher will engage students in activity(s) that allow students to use appropriate vocabulary to respond to problems that involve plotting rational numbers and integers on number lines.
- Teacher will engage and facilitate students in a discussion around a number line that allows students to discover that a number and its opposite are equidistant from zero. Students learn that the opposite sign (-) shifts the number to the opposite side of 0 ; remind students that zero is its own opposite. Students will practice placing numbers on vertical or horizontal lines such as -4 , $7,1,5.2,-9,1 / 2,6 / 2$ and justify their order.
- Teacher will engage students in activity(s) that allow students to help students relate graphing points and reflecting across zero on a number line to graphing and reflecting points across axes on a coordinate grid. Teacher facilitates through questioning the discovery and recognition of the quadrants and the signs. Students practice identifying the quadrants for ordered pairs based on the knowledge of the quadrant's signs.
- Teacher will develop a lesson that engages students to discover the absolute value and recognize the symbols II as representing absolute value. Students recognize that although with negative numbers like -5 is less than -3 in value, the absolute value (distance of a rational number from zero) increases; viceversa, with negative numbers, as the absolute value decreases the value increases. It is important for students to use many examples in adjusting their thinking in a real life context.
- Teacher will provide and facilitate examples where students will continue to practice real world scenarios using the absolute value of numbers to answer questions like "Gia has - 30 dollars in her account. What does that mean? Is a balance of -40 dollars greater?
- Teacher will provide and facilitate examples where students will continue to practice vocabulary terms using examples and non-examples and teachers ensure that multiple experiences are provided for students to understand the relationship between numbers, absolute value, and statements about order
- Teacher will provide and facilitate examples where students will continue to practice using language related to integers and absolute value like: never, always, increase, decrease, farther,
closest, above, below, have owe, gained, lost distance from zero, to the left, to the right, greater than, less than to interpret and absolute value in real world situations and to explain how ordering absolute values compares to ordering rational numbers
- Assess students acquisition of the learning at this point in time
- Review assessment and allow for opportunities to view common mistakes and misconceptions
- Teacher refers back to the 3 Act Task about finding points in the plane and need for the coordinate system and continues to engage students in a learning experience to plot ordered pairs and identify the coordinates in all four quadrants of the coordinate plane.
- Teacher will develop and introduce a lesson to engage students in understanding that when two ordered pairs differ only in the signs of their coordinates the points are reflections of each other across one or both axes; Students engage in an activity in groups by creating a coordinate grid on the floor and stand in points or place objects making sure that the two points have either the same first coordinate or second coordinate. Students lead to conclude that when one person/object is one the same x or y coordinate you are on the same line.
- Students will continue to practice problems plotting points on all four quadrants of the coordinate palace and finding distances between points with the same first coordinate or the second same coordinate by using absolute value.
- Teacher will develop a lesson that engages students by drawing polygons in the coordinate plane given the coordinates for the vertices and solve problems involving these polygons.
- Performance Task: Students will describe a real world scenario involving temperature with real data accumulated in Nome, Alaska over eight days by answering the questions accurately.
- Assess students acquisition of the learning at this point in time
- Review assessment and allow for opportunities to view common mistakes and misconceptions


| Stage 2 - Evidence |  |  |
| :---: | :---: | :---: |
| Code | Evaluative Criteria | Assessment Evidence |
| T, M, A | Rubric Criteria: <br> Mathematical Concepts: <br> 4 - Explanation shows complete understanding of mathematical concepts. <br> 3 - Explanation shows substantial understanding of mathematical concepts. <br> 2 - Explanation shows some understanding of mathematical concepts. <br> 1 - Explanation shows very limited understanding of mathematical concepts OR is not written. <br> Strategy/Procedures: <br> 4 - Uses an efficient and effective strategy to solve the problem(s). <br> 3 - Uses an effective strategy to solve the problem(s). <br> 2 - Sometimes uses an effective strategy to solve the problem(s), but does not do it consistently. <br> 1 - Rarely uses an effective strategy to solve the problem(s). <br> Mathematical Errors: <br> 4-90-100\% of the steps and solutions have no mathematical errors. <br> 3 - Almost all (85-89\%) of the steps and solutions have no mathematical errors. <br> 2 - Most (75-84\%) of the steps and solutions have no mathematical errors. <br> 1 - More than 75\% of the steps and solutions have mathematical errors. <br> Completion: <br> 4 - All problems are completed. <br> 3-75\% of all problems are completed. <br> 2-50\% of all problems are completed. <br> $1-25 \%$ or less of problems are completed. <br> Neatness and Organization: <br> 4 - The work is presented in a neat, clear, organized fashion that is easy to read. | PERFORMANCE TASK(S): <br> Goal: Students will apply addition and subtraction of integers to identify the best battery life. <br> Role: Adding and Subtracting Rational Numbers <br> Audience: Classmates <br> Products: Students make sense of the problem presented and reason to find the change in battery life in order to determine the best phone with the best battery life. <br> Standards for Success: scoring rubric including focus on explanation, process and accuracy of the solution <br> Differentiation: For extending opportunity, allow students to research and/or provide other specifications to mix paint for the creation of other color paint. Consider students of language learners and accommodations by providing images, as well as a calculator, charts or graphic organizer to assist with the algorithms and organization. |


|  | 3 - The work is presented in a neat and organized <br> fashion that is usually easy to read. <br> $2-$ The work is presented in an organized fashion but <br> may be hard to read at times. <br> $1-$ The work appears sloppy and unorganized. It is <br> hard to know what information goes together | OTHER EVIDENCE: <br> Common Unit Assessment: Add and Subtract Rational Numbers <br> Prompt: In what kind of situations would it be beneficial and not beneficial to <br> use fractions, integers, and decimals \& does it really matter what kind of rational <br> number we use? <br> Skill Check: Daily Warm-ups and/or Exit Tickets <br> Homework: Almost daily |
| :---: | :--- | :--- |
| T, M, A <br> T, M, A |  | M, A |

STAGE 3

| Stage 3 - Learning Plan |  |  |
| :---: | :---: | :---: |
| Code <br> M <br> M | Pre-Assessm <br> - Unit Pre-Assessment and/or i-Ready Diagnostic results and/or Beg <br> - Teacher monitors for prerequisite understanding(s) and misconcep | ning of Unit Self Check on(s) though warm up questions |
| $\begin{gathered} \mathrm{T}, \mathrm{~A} \\ \mathrm{~T}, \mathrm{~A} \\ \mathrm{~T}, \mathrm{~A} \\ \mathrm{~T}, \mathrm{~A} \\ \mathrm{~T}, \mathrm{~A} \\ \mathrm{~T}, \mathrm{M}, \mathrm{~A} \end{gathered}$ | Summary of Key Learning Events and Instruction <br> - Teacher develops a lesson with context for students to explore and discuss the sum of a number and its opposite is 0 . Students Use models to one or more positive and negative integers. <br> - Furthermore, teacher will provide opportunities to make connections and engage students to interpret sums of rational numbers by describing them in a real world context. <br> - Students continue to use real world problems and situations that provide an opportunity to add positive and negative integers, fractions and decimals; Students do so by also representing the operations of rational numbers on a number line. <br> - Teacher will develop opportunities for students to understand that subtraction of rational numbers is the same as adding the additive inverse. <br> - Students move on to the unit to understand and use problems in context to find the distances between two rational numbers on the number line using the absolute value of their difference. <br> - Assess students' knowledge and application and review misconceptions. | Progress Monitoring <br> - Warm ups <br> - Classwork <br> - IXL <br> - Homework <br> - Exit Tickets <br> - Embedded Assessments <br> - Unit Assessment |


| T | $\bullet$ | Performance Task: Students will apply addition and subtraction of <br> integers to identify the best battery life. |  |
| :---: | :--- | :--- | :--- |
| $\mathrm{T}, \mathrm{A}$ | Assess knowledge and application though the unit CFA and review <br> misconceptions as needed. |  |  |

## ESTABLISHED GOALS

## CCSS.MATH.CONTENT.7.NS.A. 2

## Apply and extend previous

 understandings of multiplication and division and of fractions to multiply and divide rational numbers.
## CCSS.MATH.CONTENT.7.NS.A.2a

Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1)=1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts. CCSS.MATH.CONTENT.7.NS.A.2b Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $-(p / q)=(-p) / q=p /(-q)$. Interpret quotients of rational numbers by describing real-world contexts.
CCSS.MATH.CONTENT.7.NS.A.2c
Apply properties of operations as strategies to multiply and divide rational numbers.

## CCSS.MATH.CONTENT.7.NS.A.2d

Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats. CCSS.MATH.CONTENT.7.NS.A. 3 Solve real-world and mathematical problems involving the four operations with rational numbers. (NOTE:
Computations with rational numbers

## Transfer

Students will be able to independently use their learning to attend to the precision of different quantities using rational numbers in real life scenarios.
Meaning

## UNDERSTANDINGS

Students will understand that...

- We can generalize rules for multiplying and dividing positive and negative numbers by looking at patterns and solving real world examples
- (-) sign is used for different interpretations such as "negative" or "the opposite of" to make sense of the real world context using rational numbers
- Division by zero is not defined
- Division as the inverse operation of multiplication holds true with integers
- Any number $p$ divided by any number ( -t ) and $\mathrm{p} /(-\mathrm{t})$ notation are interchangable


## Students will know...

- distributive property
- dividend
- divisor
- equation
- evaluate
- expression
- factors


## Acquisition

Students will be skilled at...

- Multiplying and dividing positive and negative integers
- Multiplying and dividing positive and negative fractions and decimals
- Expressing rational numbers as terminating or repeating decimals
- Solving problems with rational numbers
- Using mathematical vocabulary correctly to explain their reasoning and solutions to problems
- fraction


## ESSENTIAL QUESTIONS

Students will keep considering...

1. In what ways are positive and negative numbers used in the real world?
2. How can multiplying and dividing rational numbers help with careers and/or in life?
3. How can rational numbers help solve real world problems involving area/perimeter, cooking, remodeling and or other situations?

- mean
- product
- quotient
- rational number
extend the rules for manipulating
fractions to complex fractions.)


## CCSS.MATH.CONTENT.7.EE.B. 3

Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. For example:If a woman making \$25 an hour gets a 10\% raise, she will make an additional $1 / 10$ of her salary an hour, or $\$ 2.50$, for a new salary of $\$ 27.50$. If you want to place a towel bar $93 / 4$ inches long in the center of a door that is $27 \frac{1}{2}$ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.

- reciprocal
- repeating decimal
- round
- terminating decimal

| Stage 2-Evidence |  |  |
| :---: | :---: | :---: |
| Code | Evaluative Criteria | Assessment Evidence |
| T, M, A | Rubric Criteria: <br> Mathematical Concepts: <br> 4 - Explanation shows complete understanding of mathematical concepts. <br> 3 - Explanation shows substantial understanding of mathematical concepts. <br> 2 - Explanation shows some understanding of mathematical concepts. <br> 1 - Explanation shows very limited understanding of mathematical concepts OR is not written. <br> Strategy/Procedures: <br> 4 - Uses an efficient and effective strategy to solve the problem(s). <br> 3 - Uses an effective strategy to solve the problem(s). <br> 2 - Sometimes uses an effective strategy to solve the problem(s), but does not do it consistently. <br> 1 - Rarely uses an effective strategy to solve the problem(s). <br> Mathematical Errors: <br> 4-90-100\% of the steps and solutions have no mathematical errors. <br> 3 - Almost all (85-89\%) of the steps and solutions have no mathematical errors. <br> 2 - Most (75-84\%) of the steps and solutions have no mathematical errors. <br> 1 - More than 75\% of the steps and solutions have mathematical errors. <br> Completion: <br> 4 - All problems are completed. <br> 3-75\% of all problems are completed. <br> $2-50 \%$ of all problems are completed. <br> $1-25 \%$ or less of problems are completed. <br> Neatness and Organization: <br> 4 - The work is presented in a neat, clear, organized fashion that is easy to read. | PERFORMANCE TASK(S): <br> Goal: Students will apply operations with rational numbers in order to find costs of ingredients to make soap, set sales price and calculate profit. <br> Role: Multiplying or Dividing Rational Numbers <br> Audience: Classmates <br> Products: Students make sense of the problem presented and reason to find costs per ounce, set a sales price that is higher than the costs to ensure profit and determine the expected profit. <br> Standards for Success: scoring rubric including focus on explanation, process and accuracy of the solution <br> Differentiation: For extending opportunity, allow students to research and/or provide other specifications to mix paint for the creation of other color paint. Consider students of language learners and accommodations by providing images, as well as a calculator, charts or graphic organizer to assist with the algorithms and organization. |


|  | 3-The work is presented in a neat and organized <br> fashion that is usually easy to read. <br> 2-The work is presented in an organized fashion but <br> may be hard to read at times. <br> 1 - The work appears sloppy and unorganized. It is <br> hard to know what information goes together |  |
| :---: | :--- | :--- |
| T, M, A |  | OTHER EVIDENCE: <br> Common Unit Assessment: Multiply and Divide Rational Numbers <br> Prompt: In what kind of situations would it be beneficial and not beneficial to <br> use fractions, integers, and decimals \& does it really matter what kind of rational <br> number we use? <br> Skill Check: Daily Warm-ups and/or Exit Tickets <br> Homework: Almost daily |
| T, M, A |  |  |
| M, A <br> T, M, A |  |  |

STAGE 3

| Stage 3 - Learning Plan |  |  |
| :---: | :---: | :---: |
| Code <br> M <br> M | Pre-Assessme <br> - Unit Pre-Assessment and/or i-Ready Diagnostic results and/or Begin <br> - Teacher monitors for prerequisite understanding(s) and misconcept | ning of Unit Self Check n(s) though warm up questions |
| T, A <br> T, A <br> T, A <br> T, A <br> T, A | Summary of Key Learning Events and Instruction <br> - Teacher will facilitate through meaningful words problems or scenarios opportunities for students to explore the multiplication of rational numbers. Through the investigation of patterns, students begin to generalize rules for multiplying signed numbers from tables of related facts. <br> - Students solve problems and model the multiplication of rational numbers. <br> - Teacher will facilitate through meaningful words problems or scenarios opportunities for students to explore the division of rational numbers. Through the investigation of patterns, students begin to generalize rules for division with signed numbers from examples. <br> - Students solve problems and model the division of rational numbers. <br> - Later in the unit, students explore and use long division to express a rational number as a terminating or repeating decimal. <br> - Students continue to work through many real world problems that involve rational numbers and apply properties of operations to | Progress Monitoring <br> - Warm ups <br> - Classwork <br> - IXL <br> - Homework <br> - Exit Tickets <br> - Embedded Assessments <br> - Unit Assessment |


|  | simplify expressions and make calculations with positive and <br> negative numbers simpler. |  |
| :---: | :--- | :--- |
| T, A | Assess students' knowledge and application and review <br> misconceptions. |  |
| T, M, A | Performance Task: Students will apply operations with rational <br> numbers in order to find costs of ingredients to make soap, set <br> sales price and calculate profit. | Assess knowledge and application though the unit CFA and review <br> misconceptions as needed. |

## ESTABLISHED GOALS

## CCSS.MATH.CONTENT.7.EE.A. 1

 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
## CCSS.MATH.CONTENT.7.EE.A. 2

Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. For example, $a+0.05 a=1.05 a$ means that "increase by $5 \%$ " is the same as "multiply by 1.05 ."

## CCSS.MATH.CONTENT.7.EE.B. 4

Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. CCSS.MATH.CONTENT.7.EE.B.4a Solve word problems leading to equations of the form $\mathrm{px}+\mathrm{q}=\mathrm{r}$ and $\mathrm{p}(\mathrm{x}$ $+q$ ) $=r$, where $p, q$, and $r$ are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm . Its length is 6 cm . What is its width?

## CCSS.MATH.CONTENT.7.EE.B.4b

Solve word problems leading to inequalities of the form $\mathrm{px}+\mathrm{q}>\mathrm{r}$ or $\mathrm{px}+\mathrm{q}<\mathrm{r}$, where $\mathrm{p}, \mathrm{q}$, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.

Transfer
Students will be able to independently use their learning to accurately use properties of operations to generate
equivalent expressions and equations that represent and solve real life and mathematical problems.

## Meaning

## UNDERSTANDINGS

Students will understand that...

- Properties of operations can be applied to generate equivalent expressions that reveal different aspects of a problem
- There can be more than one expression equivalent to a given number
- We can transfer what we know about solving


## ESSENTIAL QUESTIONS

Students will keep considering...

1. When do we use equations to solve problems in everyday life?
2. Why do we use inverse operations to solve equations?
3. How do solutions of equations and inequalities differ from one another? one step equations to solving multi step equations

| equations | Acquisition |
| :---: | :---: | :---: |

Students will know...

- coefficient
- equivalent expressions

Students will be skilled at...

- Finding equivalent expressions
- factor
- Rewriting linear equations in different forms
- inequality
- Solving multi step equations and inequalities
- like terms
- Graphing the solution set of an inequality
- rational number
- Participating in discussions by asking questions and rephrasing ideas of classmates

For example: As a salesperson, you are paid \$50 per week plus \$3 per sale. This week you want your pay to be at least $\$ 100$. Write an inequality for the number of sales you need to make, and describe the solutions.

STAGE 2
Stage 2 - Evidence

| Code | Evaluative Criteria | Assessment Evidence |
| :---: | :---: | :---: |
| T, M, A | Rubric Criteria: <br> Mathematical Concepts: <br> 4 - Explanation shows complete understanding of mathematical concepts. <br> 3 - Explanation shows substantial understanding of mathematical concepts. <br> 2 - Explanation shows some understanding of mathematical concepts. <br> 1 - Explanation shows very limited understanding of mathematical concepts OR is not written. <br> Strategy/Procedures: <br> 4 - Uses an efficient and effective strategy to solve the problem(s). <br> 3 - Uses an effective strategy to solve the problem(s). <br> 2 - Sometimes uses an effective strategy to solve the problem(s), but does not do it consistently. <br> 1 - Rarely uses an effective strategy to solve the problem(s). <br> Mathematical Errors: <br> $4-90-100 \%$ of the steps and solutions have no mathematical errors. <br> 3 - Almost all (85-89\%) of the steps and solutions have no mathematical errors. <br> 2 - Most (75-84\%) of the steps and solutions have no mathematical errors. <br> 1 - More than 75\% of the steps and solutions have mathematical errors. <br> Completion: <br> 4 - All problems are completed. | PERFORMANCE TASK(S): <br> Goal: Students will apply the concept of interpreting quantities and writing linear equations to solve a design problem. <br> Role: Using equations <br> Audience: Classmates <br> Products: Students make sense of the problem presented and reason to describe the two different options for a client meeting the requirement for fencing. <br> Standards for Success: scoring rubric including focus on explanation, process and accuracy of the solution <br> Differentiation: For extending opportunity, allow students to research and/or provide other specifications to mix paint for the creation of other color paint. Consider students of language learners and accommodations by providing images, as well as a calculator, charts or graphic organizer to assist with the algorithms and organization. |


|  | $3-75 \%$ of all problems are completed. <br> $2-50 \%$ of all problems are completed. <br> $1-25 \%$ or less of problems are completed. <br> Neatness and Organization: <br> $4-$ The work is presented in a neat, clear, organized <br> fashion that is easy to read. <br> $3-$ The work is presented in a neat and organized <br> fashion that is usually easy to read. <br> $2-$ The work is presented in an organized fashion but <br> may be hard to read at times. <br> $1-$ The work appears sloppy and unorganized. It is <br> hard to know what information goes together | OTHER EVIDENCE: <br> Common Unit Assessment: Expressions, equations and ineqialities <br> Prompt: How are the solutions to inequalities different from the solutions to <br> equations? <br> Skill Check: Daily Warm-ups and/or Exit Tickets <br> Homework: Almost daily |
| :--- | :--- | :--- |
| T, M, A <br> T, M, A | M, A |  |
| T, M, A |  |  |

STAGE 3

| Stage 3 - Learning Plan |  |  |
| :---: | :---: | :---: |
| Code <br> M <br> M | Pre-Assessm <br> - Unit Pre-Assessment and/or i-Ready Diagnostic results and/or Begi <br> - Teacher monitors for prerequisite understanding(s) and misconcep | ning of Unit Self Check n(s) though warm up questions |
| T, A <br> T, A <br> T, A <br> T, A | Summary of Key Learning Events and Instruction <br> - Students will apply and extend their prior learning of addition and subtraction to generate equivalent expressions with rational coefficients and constants. <br> - Teacher will develop and facilitate a lesson through problems the use of factoring and expanding to generate equivalent expressions with rational coefficients and constants. <br> - Students continue to evaluate expressions with rational terms and apply properties of operations and order of operations to manipulate expressions with: negative constants and coefficients. <br> - Teacher will provide opportunities and students will discuss, reason and practice changing the way an expression is written to show different aspects of a situation or word problem. For | Progress Monitoring <br> - Warm ups <br> - Classwork <br> - IXL <br> - Homework <br> - Exit Tickets <br> - Embedded Assessments <br> - Unit Assessment |


| T, A | example, represent the total cost versus of copying 12 pages <br> versus representing the pages copied knowing the total. <br> - <br> Next, the teacher will provide opportunities for students to utilize <br> balances, hanger diagrams and other manipulations to solve one <br> and multistep equations with integer coefficients. |  |
| :---: | :--- | :--- |
| T, A | Last, students explore and develop their skills in writing and <br> solving inequalities; Students Solve and graph real life situations <br> accurately on a number line. |  |
| T, M, A | Assess students' knowledge and application and review <br> misconceptions. |  |
| T, APerformance Task: Students make sense of the problem presented <br> and reason to describe the two different options for a client <br> meeting the requirement for fencing. | Assess knowledge and application though the unit CFA and review <br> misconceptions as needed. |  |

UNIT 11 - STATISTICAL THINKING: Data Distribution, Measures of Center, and Variability
Stage 1 Desired Results

## ESTABLISHED GOALS

## CCSS.MATH.CONTENT.SP.A.1:

Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages. CCSS.MATH.CONTENT.SP.A.2:
Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape. CCSS.MATH.CONTENT.SP.A.3:
Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number. CCSS.MATH.CONTENT.SP.B.4:
Display numerical data in plots on a number line, including dot plots, histograms, and box plots.
CCSS.MATH.CONTENT.SP.B.5:
Summarize numerical data sets in relation to their context, such as by: CCSS.MATH.CONTENT.6.SP.B.5.a Reporting the number of observations. CCSS.MATH.CONTENT.6.SP.B.5.a Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.
CCSS.MATH.CONTENT.6.SP.B.5.C Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as

## Transfer

Students will be able to independently use their learning to look for and make use of structure to collect and analyze information.
Meaning

## UNDERSTANDINGS

Students will understand that...

- Collected data can be analyzed to answer a question
- Various statistical methods are used for specific purposes
- Data consists of different attributes, counts, and measurements
- Graphs show a distribution shape, whether centered around symmetry or containing unusual traits like clusters, gaps, and outliers
- Different forms of data representation are used including charts, graphs, and statistics


## Acquisition

Students will know...

- attribute
- boxplot
- categorical data
- cluster
- data
- distribution
- dot plot
- frequency
- gap
- histogram
- interquartile range
- lower quartile
- mean
- mean absolute value
- measures of center
- measures of variation


## ESSENTIAL QUESTIONS

Students will keep considering...

1. How does our interpretation of data guide our decisions?
2. What is the best way to represent collected data?
3. How can I explain the data distribution?

Students will be skilled at...

- Collecting, analyzing, and interpreting sets of data
- Describing the shape of data distribution based on its center, spread, and/or variability
- Creating surveys as a tool to collect data, formulate and answer a statistical question
- Differentiating between categorical and numerical data
- Describing a set of data using its center (mean, median, and mode), spread (range), and overall shape
- Determining appropriate center and variation for various data sets
- Identifying how changes in data affect the mean, median, and mode of a data set
- Compiling and organize data in the form of a table, histogram, dot plot, line plot, ordered-value
describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.


## CCSS.MATH.CONTENT.6.SP.B.5.d

Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered.

- median
- mode
- numerical data
- outlier
- peak
- quartile
- range
- sample
- sample space
- scale
- skewed left
- skewed right
- statistics
- statistical question
- upper quartile
- variability


## bar graph, or box plot

- Determining which graph or table is best suited to represent a data set
- Performing a statistical investigation including the collection, organization, and analysis of the data
- Communicating a deep understanding of observations, measures of center and spread, graph to represent data collected and overall patterns in a distribution including any outliers impacted the measures of center

| Stage 2 - Evidence |  |  |
| :---: | :---: | :---: |
| Code | Evaluative Criteria | Assessment Evidence |
| T, M, A | Rubric Criteria: <br> Mathematical Concepts: <br> 4 - Explanation shows complete understanding of mathematical concepts. <br> 3 - Explanation shows substantial understanding of mathematical concepts. <br> 2 - Explanation shows some understanding of mathematical concepts. <br> 1 - Explanation shows very limited understanding of mathematical concepts OR is not written. <br> Strategy/Procedures: <br> 4 - Uses an efficient and effective strategy to solve the problem(s). <br> 3 - Uses an effective strategy to solve the problem(s). <br> 2 - Sometimes uses an effective strategy to solve the problem(s), but does not do it consistently. <br> 1 - Rarely uses an effective strategy to solve the problem(s). <br> Mathematical Errors: <br> 4-90-100\% of the steps and solutions have no mathematical errors. <br> 3 - Almost all (85-89\%) of the steps and solutions have no mathematical errors. <br> 2 - Most (75-84\%) of the steps and solutions have no mathematical errors. <br> 1 - More than $75 \%$ of the steps and solutions have mathematical errors. <br> Completion: <br> 4 - All problems are completed. <br> 3-75\% of all problems are completed. <br> 2-50\% of all problems are completed. <br> $1-25 \%$ or less of problems are completed. <br> Neatness and Organization: | Goal: Use a real life scenario to analyze the statistics and identify which group of students performed better. <br> Role: Analyzing data using statistics <br> Audience: Classmates <br> Products: Generate quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered. <br> Standards for Success: scoring rubric including focus on explanation, process and accuracy of the solution <br> Differentiation: For more advanced students you can challenge them to use estimation in doubling or tripling the scores by using desmos to perform the statistics. Consider students of language learners and accommodations by providing images, as well as a calculator, place value charts or graphic organizer to assist with the algorithms and organization |


|  | 4 - The work is presented in a neat, clear, organized <br> fashion that is easy to read. <br> 3 - The work is presented in a neat and organized <br> fashion that is usually easy to read. <br> 2 - The work is presented in an organized fashion but <br> may be hard to read at times. <br> 1 - The work appears sloppy and unorganized. It is <br> hard to know what information goes together |  |
| :--- | :--- | :--- |
| T, M, A |  | OTHER EVIDENCE: <br> Common Unit Assessment: Data Distribution, Measures of Center, and <br> Variability <br> Prompt: What data should I collect to help answer a statistical question? <br> Skill Check: Daily Warm-ups and/or Exit Tickets <br> Homework: Almost daily |
| T, M, A <br> M, A A <br> T, M, A |  |  |

STAGE 3

## Stage 3 - Learning Plan

| Code <br> M <br> M | Pre-Assessme <br> - Unit Pre-Assessment and/or i-Ready Diagnostic results and/or Begi <br> - Teacher monitors for prerequisite understanding(s) and misconcep |
| :---: | :---: |
| M, A | Summary of Key Learning Events and Instruction <br> Student success at transfer, meaning, and acquisition depends on... <br> - Teacher checks for prior knowledge using warm-up and questioning activities involving collecting data and creating dot plots. |
| M | - Students will work independently to complete pre-assessment involving collecting data and creating dot plots. |
| A | - Teacher will present warm-up questions helping explain and facilitate discussion in discovering what us the study of statistics through examples, statistical versus non statistical questions, categorical and numerical data and developing vocabulary. |
| T, M | - Students will practice identifying the difference between categorical and numerical data along with calculating the mean, median, and mode. |
| T, A | - Assess students' knowledge and application and review misconceptions. |
| T, A | - Teacher will model how change in data changes the distribution of |

Progress Monitoring

- Warm ups
- Classwork
- IXL
- Homework
- Exit Tickets
- Embedded Assessments
- Unit Assessment
- Teacher will model the different charts, tables, and diagrams used for presenting data.
- Students will experiment with the different charts, tables, and diagrams to determine which one best fits a particular data set.
- Performance Task: Students will use a real life scenario to analyze the statistics and identify which group of students performed better.
- Assess knowledge and application though the unit CFA and review misconceptions as needed.

