

Webster County Schools

95 CLARK AVENUE – EUPORA, MS 39744

Office of Curriculum

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8th Grade

Packet 3

May 4, 2020

THE STICK WITH IT WORKOUT CHALLENGE

WEEK 1

30 sec Jumping Jacks 30 sec Squats 30 sec High Plank Rounds: 4		30 sec Knee Push-ups 30 sec Forward Lunges 30 sec Mountain Climbers Rounds: 5		30 sec High Knees 30 sec Inchworms 30 sec Jump Squats Rounds: 4					
Max duration: 7 min	01	02	Max duration: 11m 30s	03	04	05	Max duration: 7 min	06	07

WEEK 2

1 min Jumping Jacks 1 min Squats 30 sec High Plank Rounds: 3		30 sec Knee Push-ups 30 sec Backward Lunges 30 sec 4-count Burpees Rounds: 4		30 sec High Knees 30 sec Wall Sit 30 sec Bridge Rounds: 5					
Max duration: 9m 30s	08	09	Max duration: 7 min	10	11	12	Max duration: 11m 30s	13	14

WEEK 3

1 min Jumping Jacks 1 min Squats 30 sec Low Plank Rounds: 4		30 sec Knee Push-ups 30 sec High Knees 30 sec Bridge Rounds: 5		1 min 4-count Burpees 30 sec Wall Sit 30 sec Tricep Dips Rounds: 4					
Max duration: 13 min	15	16	Max duration: 11m 30s	17	18	Max duration: 11 min	19	20	21

WEEK 4

1 min Jumping Jacks 30 sec Jump Squats 30 sec Low Plank Rounds: 5		30 sec High Knees 30 sec Forward Lunges 30 sec Inchworms Rounds: 6		1 min Knee Push-Ups 30 sec Wall sit 30 sec Mountain Climbers Rounds: 4					
Max duration: 14 min	22	23	Max duration: 14 min	24	25	Max duration: 11 min	26	27	28

* Rest 30 sec - 1 min between rounds

CONGRATULATIONS

Now you're ready for the 12-week body transformation plan in the adidas Training app!



Name: _____

Special Report: MONEY AND YOU

Budget Time

Sam just received \$30 for a birthday gift. Below are some of the ways he could use his money. Create a budget showing what you would do with the money if you were Sam. You may use as many items as you would like, but the total must come to \$30.



Ways to Use Birthday Money

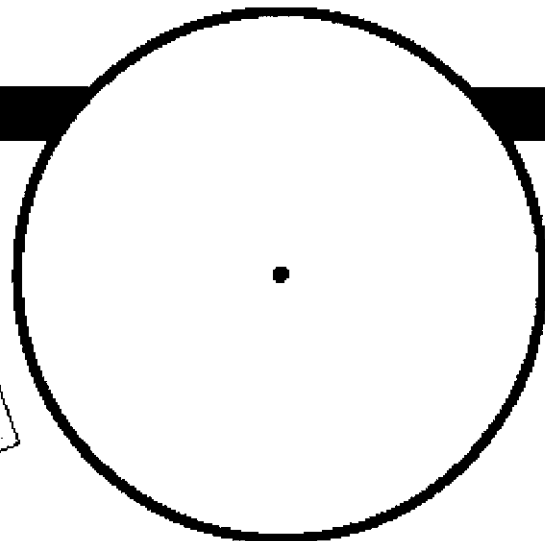
New CD	\$16.50
Computer game	\$30.00
Pizza with friends	\$13.50
New book	\$9.00
Movie ticket	\$7.50
Rent a video	\$4.00
Ice cream cone	\$2.50
Save for future	Any amount
Give to needy	Any amount

My Budget

Use	Amount
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
Total: \$30.00	

Graph It!

Now show your budget on a pie chart. Draw a piece of the pie for each item in your budget.



Numerous reform movements changed the U.S. during the 1800s

By National Geographic Society, adapted by Newsela staff on 05.16.19
Word Count 911
Level 1070L



Image 1. A statue at Seneca Falls, New York, depicting the first meeting of feminist activists (from left) Susan B. Anthony, Amelia Bloomer and Elizabeth Cady Stanton after they attended an anti-slavery lecture by William Lloyd Garrison on May 12, 1851. Renowned sculptor and artist A.E. Ted Aub crafted the statue. Photo by Epics/Getty Images

The 1800s in the United States included two periods of reform activity. The first was the pre-Civil War years beginning in approximately 1830, and the second was the 1890s, which ushered in the Progressive Era. While historians do not agree on what caused the earlier "Era of Reform," they have identified a number of likely contributing factors. The American Revolution, within living memory, had transformed the American way of life. The Second Great Awakening combined democratic thinking with Christian ideals of charity. As a result, Americans began to focus on the moral improvement of themselves and their nation.

Abolition

This article is available at 5 reading levels at <https://newsela.com>.

The great American problem of the 19th century was slavery. Both black and white abolitionists made it impossible to ignore, and the division between slave and free states grew ever wider until the Civil War erupted. Like the American Revolution itself, the anti-slavery movement grew out of Boston, Massachusetts. Abolitionist William Lloyd Garrison began publishing the *Liberator* newspaper there in 1831. Garrison also led the American Anti-Slavery Society. It was one of many abolitionist societies in which both men and women lectured and campaigned against slavery.

Education Reform

Before the 1800s, students were charged fees in order to attend school. Most people had only as much education as their parents could afford to buy. Teachers' credentials were often poor, and many schools followed the "Lancaster system" of relying on "monitors" — older students — to pass on what they learned from their teacher to the younger pupils. Reformer Horace Mann advocated for "common schools," in which all children would receive the fundamentals of learning and also a shared moral vision of citizenship. Mann's "common values" were influenced by his own class and religion, but his vision took hold. Universal free elementary education became a reality — for white Americans. Most African-Americans, including nearly all who were enslaved, had few or no educational opportunities until after the Civil War. Even then, Jim Crow laws barred them from equal participation.

Prison Reform

Prison reformers wanted to abolish imprisonment for people who owed debts. They also wanted to improve conditions in prisons and change the purpose of prison from punishment to rehabilitation. Reformers like Dorothea Dix helped introduce libraries, literacy classes and Sunday school to prisons. In doing so, the reformers brought positive change to the lives of the incarcerated.

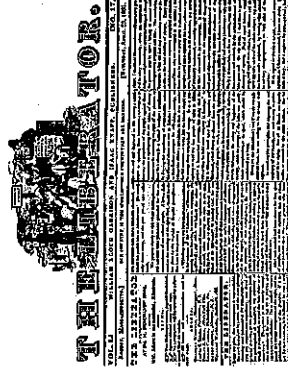
Labor Reform

During the 19th century, machines replaced handcrafting in many industries, and the demand for workers grew. As more and more work was being done in factories, individual laborers came to have less control over the conditions they worked in. Even before the rise of labor unions, some workers protested by means of strikes. During a strike, workers stop working in order to demand better pay or better treatment from their bosses. The mill workers of Lowell, Massachusetts, were some of the first factory workers to strike for better conditions. Most of them were young women and girls.

The first organized labor unions, including the Knights of Labor and the American Federation of Labor, appeared after the Civil War. They grew slowly, though. It was not until the first half of the 20th century that unions would gain the power to bargain on equal terms with business owners.

Temperance

This article is available at 5 reading levels at <https://newsela.com>.



The temperance movement began side by side with the other reform movements of the 1830s. Initially, its supporters advocated moderation in the use of alcohol. Over time, their position shifted to a demand for an outright ban on selling and drinking alcohol, which led to the Prohibition Era. The 18th Amendment to the U.S. Constitution, approved in 1919, made it illegal to make, transport or sell alcoholic beverages. However, the law was difficult to enforce, and shifting public opinion made it less and less popular, which led to the repeal of Prohibition in 1933.

Votes For Women

From the beginning of the reform era, women involved themselves in various movements. Many became notable activists, writers and lecturers. Both women of color and white women took leading roles in the abolitionist movement. As part of education reform, women's and coeducational schools were established, and women increasingly questioned the status quo that limited the vote to white men. When the 14th and 15th Amendments affirmed the citizenship and voting rights of all adult men, it energized the women's suffrage movement. Suffrage is the right to vote, and the movement became the women's suffrage movement. In 1869, the new territory of Wyoming was the first part of the United States to give women the right to vote.

Leaders of the movement disagreed on several points, most importantly on whether their movement should include black women. For a time, two separate national suffrage associations existed. In 1890, they reunited as the National American Woman Suffrage Association. Three years later, Colorado amended its constitution to include women's suffrage. However, the United States would not follow its lead for nearly three more decades.

What It All Means

The many reform movements of the 1800s each had a distinct focus. However, they all shared the principles of democratic and Christian ideals. These movements, combined with the pressures of industrial change and westward expansion, meant that 1900 opened on a nation much changed from the United States of 1800.

Quiz

1

Which answer choice provides an accurate and objective summary of the article?

- (A) Different reform movements became active in the first and second halves of the 1800s. Reformers worked to improve education and work opportunities as well as individual rights. Each movement was focused on ideals of democracy and morality.
- (B) The first period of reform in the United States was the pre-Civil War years beginning about 1830. The second was the Progressive Era in the 1890s. Historians have identified the end of slavery as the main contributing factor.
- (C) Education reform and prison reform were movements that focused on the important work of educating Americans. People with more education were able to get better jobs and more money. This led directly to the temperance movement.
- (D) Women played a crucial and heroic role in the development of reform movements in the United States. They overcame silly bickering between reform groups in order to help others. This selflessness was what changed the country.

2

One central idea of the article is that many reform movements took years before achieving change. How does the author introduce this CENTRAL idea?

- (A) by dividing each of the reform movements into pre- and post-Civil War categories
- (B) by describing the conditions faced by people in debt or prison prior to prison reform
- (C) by explaining that education reform remained limited to white Americans early on
- (D) by emphasizing that the temperance movement failed when Prohibition was repealed

3

What is the MAIN reason the author includes the section "Labor Reform"?

- (A) to emphasize the importance of Massachusetts for reformers
- (B) to elaborate on the problems faced by mill workers and women
- (C) to illustrate how strikes and unions helped the cause of labor reform
- (D) to introduce the idea that women played a key role in effecting change

4

How are the sections organized to help to develop understanding?

- (A) The sections are organized into a series of eras that defined reforms, using compare and contrast structure in each section to show which were effective.
- (B) The sections are organized into categories that define various reform movements, using chronological order in each section to show their causes and effects.
- (C) The sections are organized by ranking them in order of importance, using problem and solution structure in each section to show their effects today.
- (D) The sections are organized by listing them in a straight chronological timeline, using steps in order in each section to show how they gained supporters.

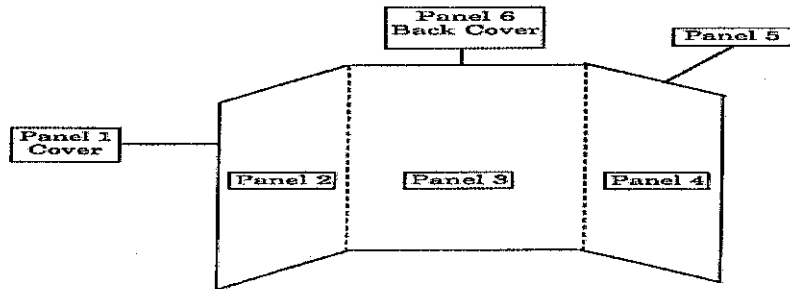
Name: _____

19th Century Reforms Brochure Project

Due: _____

Your Task: Create a brochure on **five** of the 19th Century reform movements discussed in class. Your brochure will be both informational and persuasive. Write in a 19th Century context from where you must inform the general public of your reforms, while also encouraging them to support each movement. Write your brochure in the present tense as if you're in the time period. Use chapter 14 in your textbook for help.

Directions: Fold a piece of paper into thirds and then complete the pages of the brochure according to the requirements below. Be sure to also include a heading and page number on each page.



Information to be included in your brochure

Panel #1: Front Page:

- A Title
- A Slogan that will make people want to read through your brochure
- A drawing or picture that represents the reform

Panel #2: Choose One Reform from the List

- Include many of the major issues
- Provide plenty of details and be persuasive
- Include at least one picture

Panel #3: Choose a 2nd Reform from the List

- Include many of the major issues
- Provide plenty of details and be persuasive
- Include at least one picture

Panel #4: Choose a 3rd Reform from the List

- Include many of the major issues
- Provide plenty of details and be persuasive
- Include at least one picture

Panel #5: Choose a 4th Reform from the List

- Identify the major reformers from this time period
- Note their contributions and significance
- Include at least one picture

Panel #6: Extra page/optional

Reforms List

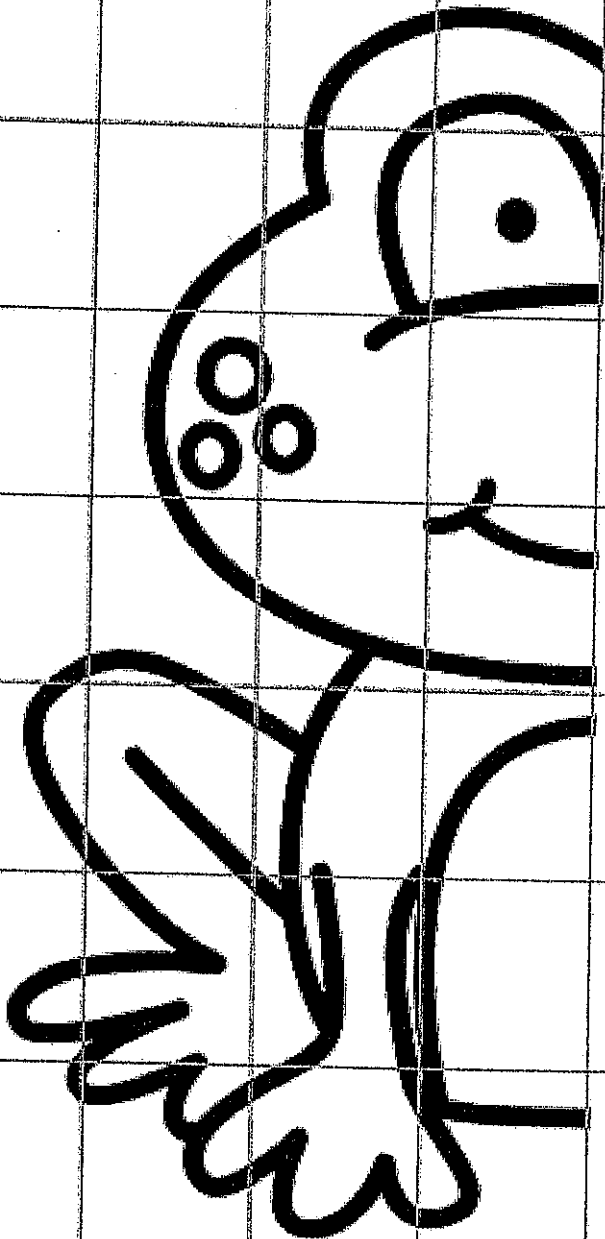
- Temperance
- Women's Rights
- Education
- Transcendentalism
- 2nd Great Awakening
- Religion
- Abolitionist Movement

** Use NEWSLA article
and/or research online!
If completed, email picture
to me! I'd love to see it!
D*

Name _____

Symmetry

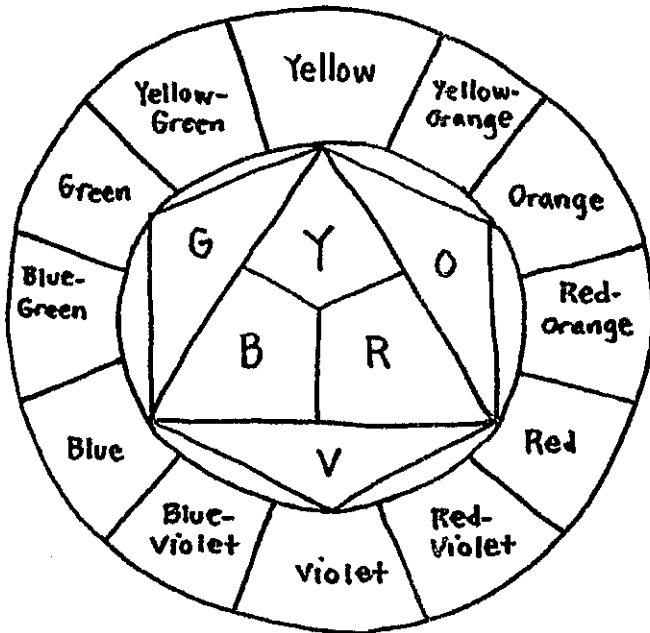
Directions: Use the grid lines to help you mirror the image of the frog.



Use as a worksheet. Color & fill in empty areas. Use colored page for help if needed.

COLOR THEORY

Color is an element of art.



Everytime I use color, I am creating a color scheme.

← This is a color wheel.

The most common color schemes are listed below.

Primary... [] [] [] {I can make all the other colors by mixing different amounts of primary colors}

Secondary... [] [] [] {I can mix two primary colors to make a secondary color.}

Warm... [] [] [] [] [] [] {Yellow and all the colors with red and orange tones are warm.}

Cool... [] [] [] [] [] [] {Violet and all the colors with blue and green tones are cool.}

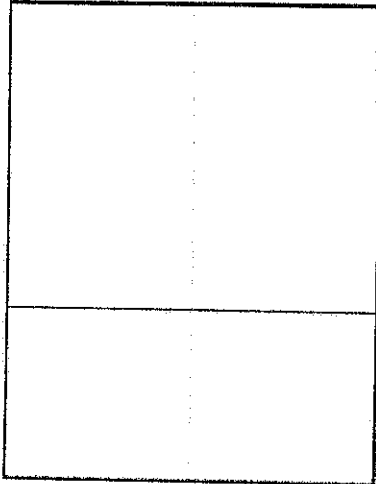
Complementary... [] [] , [] [] , [] [] , [] [] , [] [] , [] [] , etc
{Opposites on the color wheel are complementary.}

Analogous... [] [] [] , [] [] [] , [] [] [] [] , [] [] [] [] , and so on.
{Colors that are close neighbors on the color wheel are analogous.}

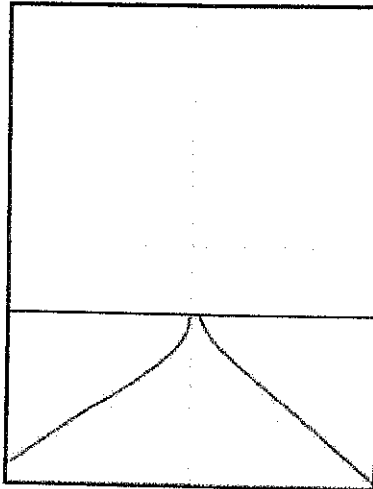
Rainbow... [] [] [] [] [] [] [] {Using primary and secondary colors placed in order from the color wheel, I can make a rainbow}

Intermediate... is a color term I need to know. It is the color in between the primary and secondary colors on the color wheel.

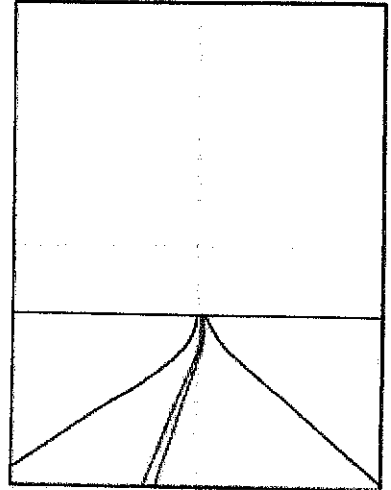
Draw a Vanishing Point Road



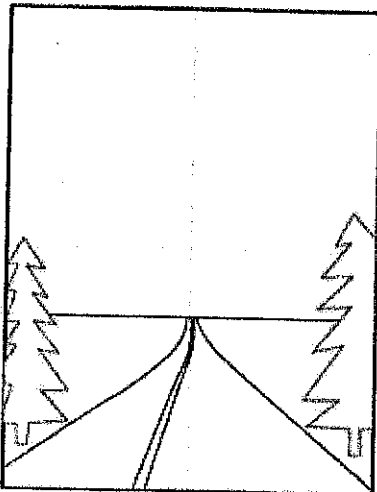
1. Make guide lines. Draw horizon.



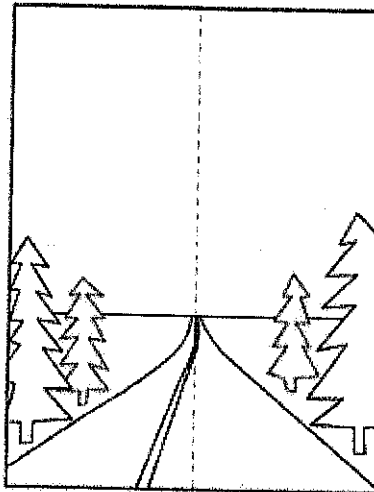
2. Draw the road.



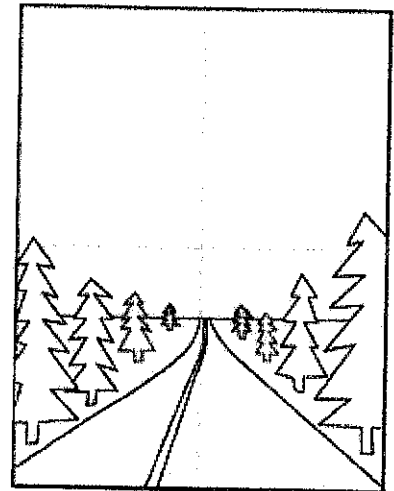
3. Add the center road line.



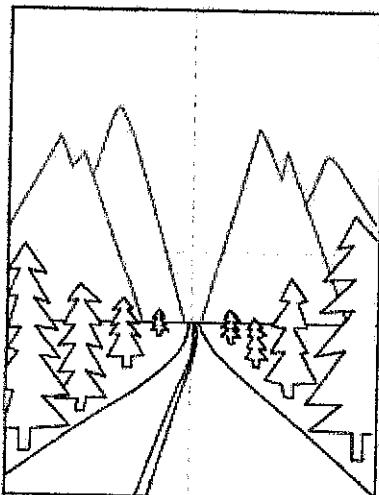
4. Draw two large trees.



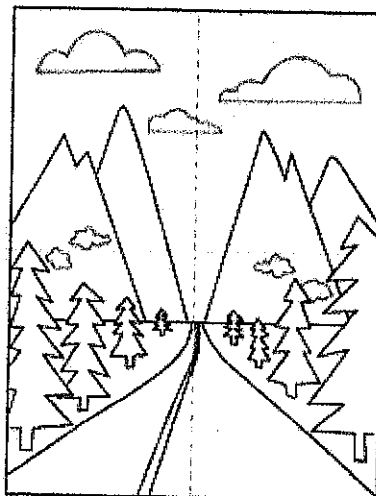
5. Draw two smaller trees.



6. Add four smaller trees.



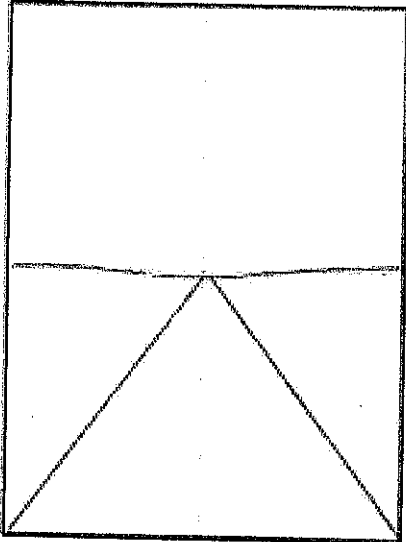
7. Draw the mountains.



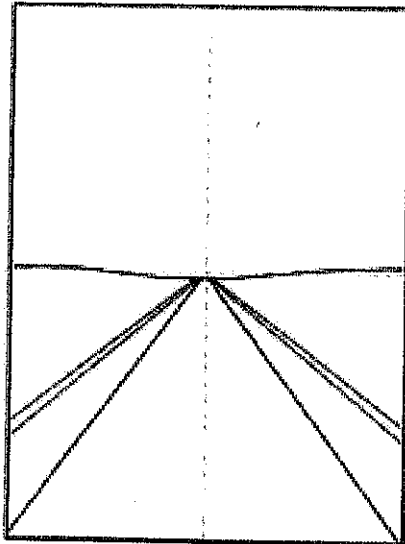
8. Add clouds.



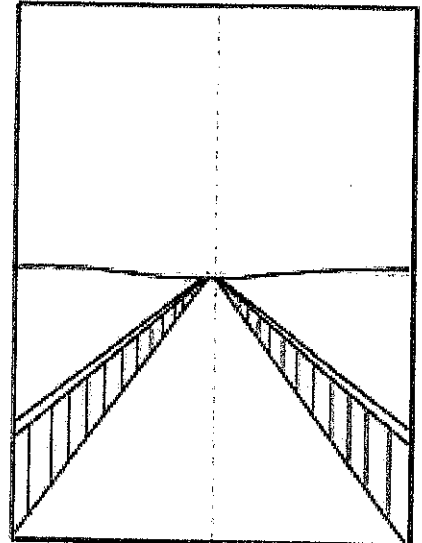
9. Trace with marker and color.



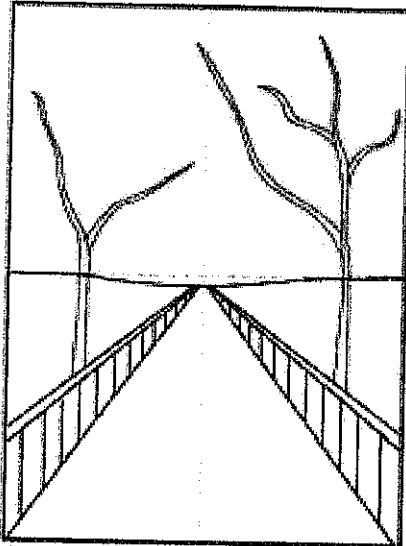
1. Draw the horizon line. Use a ruler to draw the boardwalk lines.



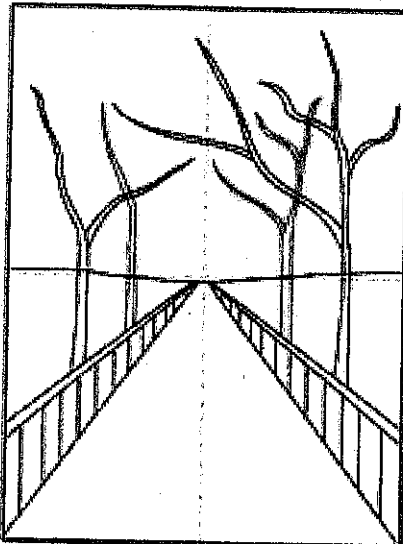
2. Use a ruler again to add more lines for the hand rails.



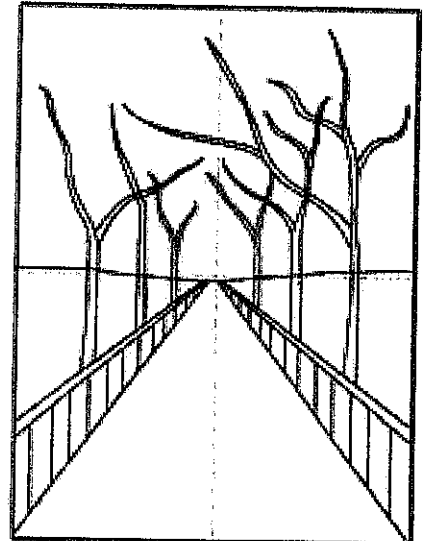
3. Draw vertical lines on the sides.



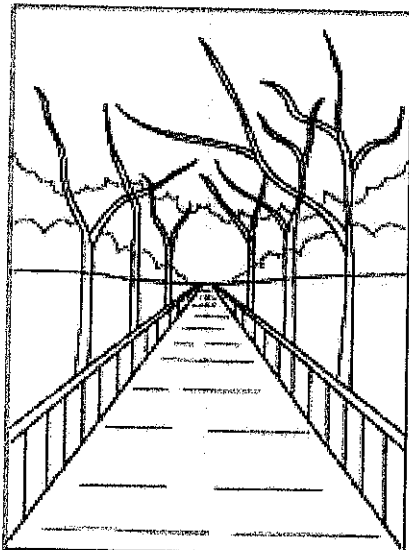
3. Draw two large tall trees with skinny wavy branches.



4. Draw two medium trees. It's fine if the branches overlap.



5. Draw two smaller trees, making sure they are the shortest.



6. Add wavy lines for the trees and distant shrubs. Add board lines.



8. Trace with permanent black marker. Color random red splotches.

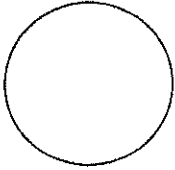


9. Fill the trees with orange. Make shadows with another layer of marker.

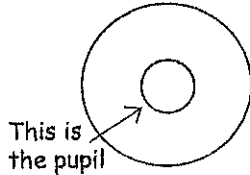
Draw a Human Eye

1. Start with a circle. This will be the iris.

TIP:
try and
find a
circle you
can trace!

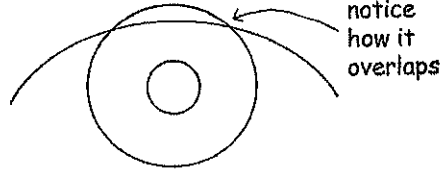


2. Add a small circle in the center.



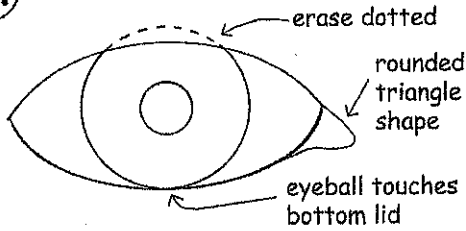
This is the pupil

3. Draw an arch over the larger circle.



notice how it overlaps

4. Add bottom lid area

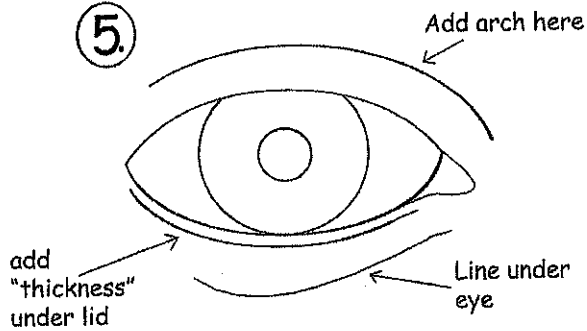


erase dotted

rounded triangle shape

eyeball touches bottom lid

5.

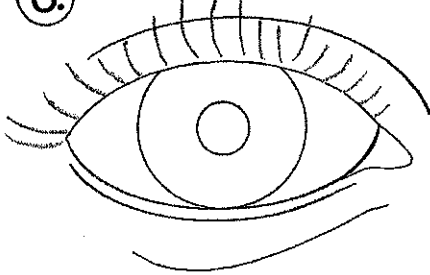


Add arch here

add "thickness" under lid

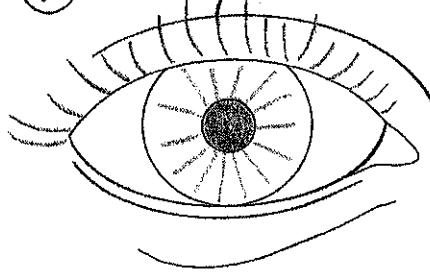
Line under eye

6. "Fan" a few lashes around the upper lid

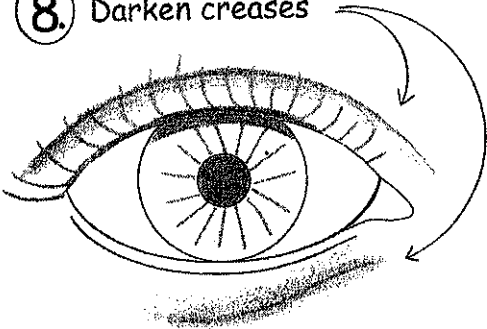


Make them slightly longer in the center

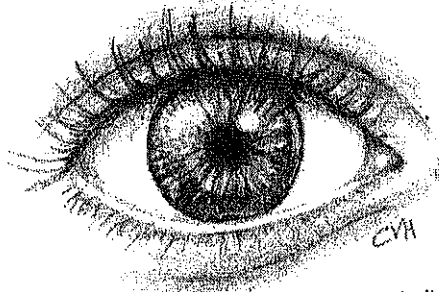
7. Draw "spokes" around the pupil



8. Darken creases



9. Shade. Add more lashes at top and some shorter ones on bottom lid.

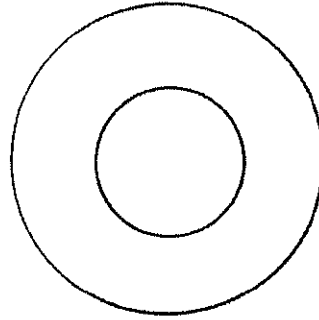
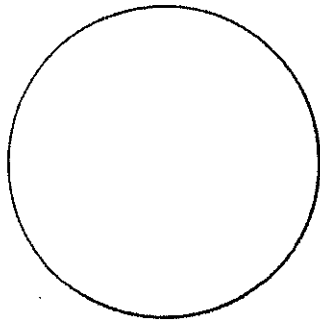


Erase some spots in the iris area to indicate reflections. Add more spokes coming from pupil.

Eyeball

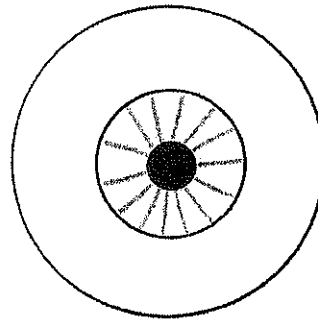
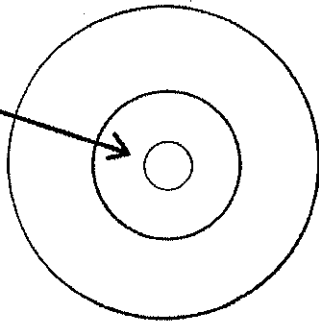
- ① Start with a circle.
- ② Add a small circle in the center. This will be the iris.

TIP:
try and
find a
circle you
can trace!



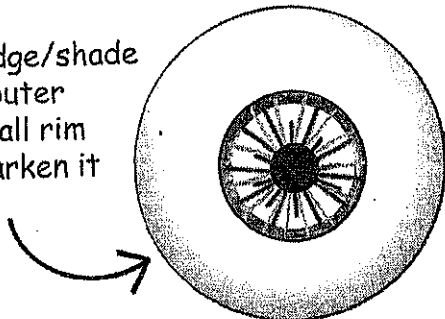
- ③ Add the last smaller circle in the center of the iris.
- ④ Shade the pupil black. Draw "spokes" around the pupil.

This
is
the
pupil



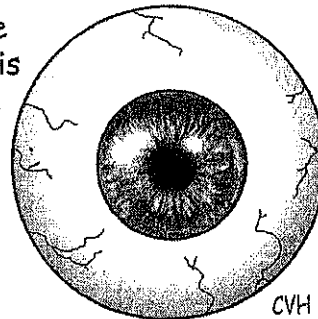
- ⑤ Darken edges of iris. Add more "spokes".
- ⑥ Shade entire iris. Add more spokes as needed.

Smudge/shade
the outer
eyeball rim
to darken it



Erase some
areas on iris
to indicate
"shine"

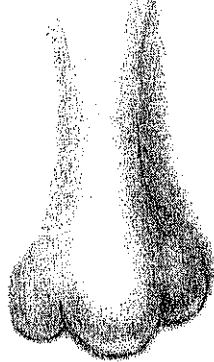
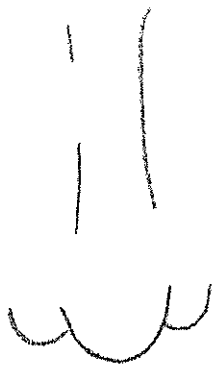
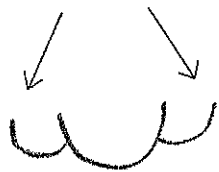
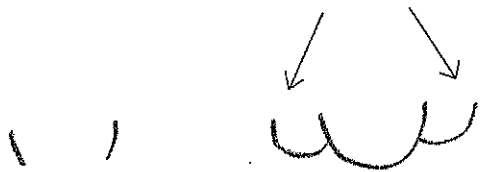
Add a few
thin lines
for veins



Draw a Human Nose

A Simple Nose

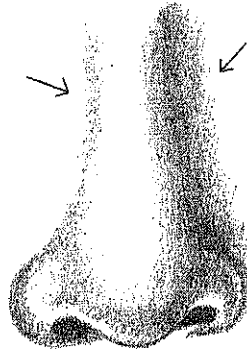
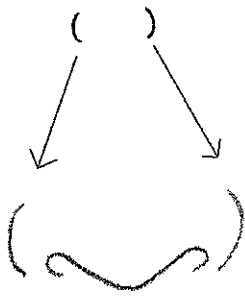
1. Start with a "U" shape
2. Add 2 small "U" shapes to sides
3. Lightly draw sides of nose
4. Shade one side darker



nose is always thinner at top and wider at base

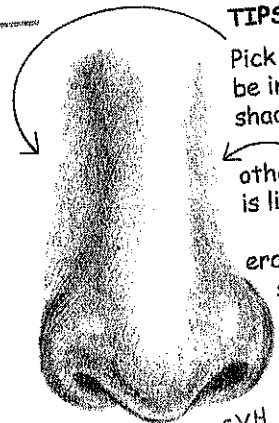
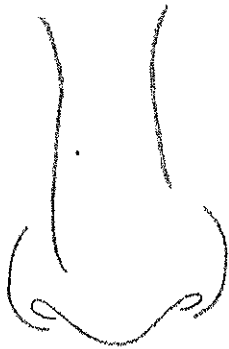
More Advanced

1. Start with a wide "U" and curve the ends
2. Add a "parenthesis" shape to sides
3. Lightly draw sides of nose
4. Shade one side darker



TIP: sides of nose are not lines, they are shaded

Another



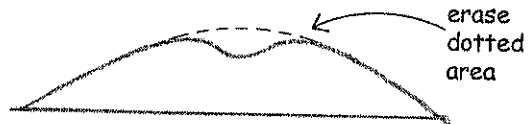
TIPS:
Pick a side to be in the shadows
other side is lighter
erase some spots for highlights

Draw a Human Mouth

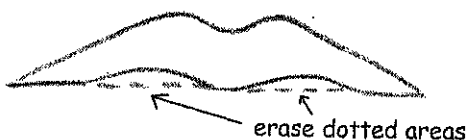
1. Start with a "sunset" shape



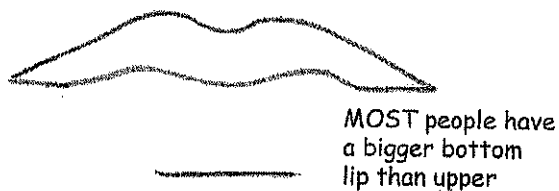
2. Make rounded indent at center



3. Make 2 more rounded indents (this time at bottom)



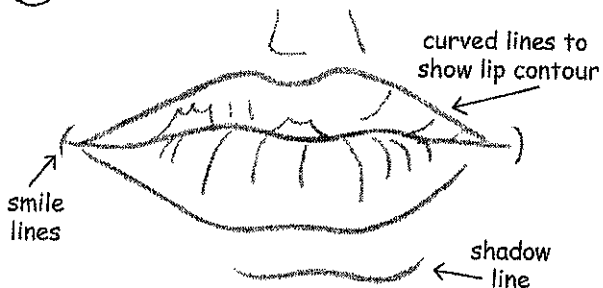
4. Add a short line to indicate the location of the bottom lip



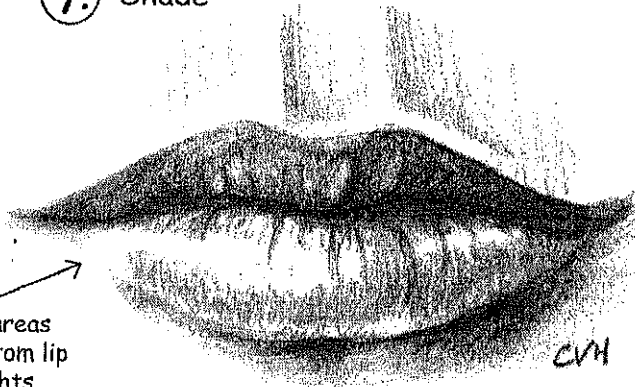
5. Connect the bottom lip with curving lines



6. Add lip lines



7. Shade



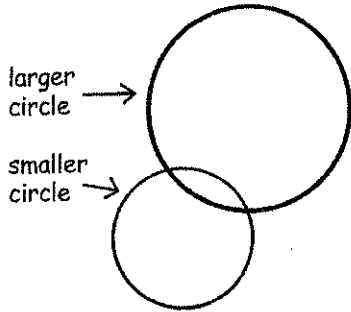
TIP:

Don't try to make both sides perfect. Human faces are not exactly symmetrical!

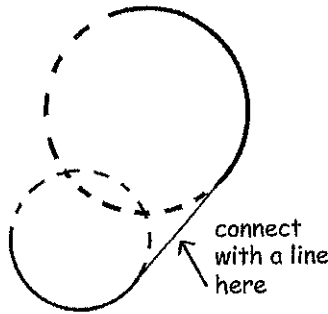
erase some areas on center bottom lip for highlights

Draw a Human Ear

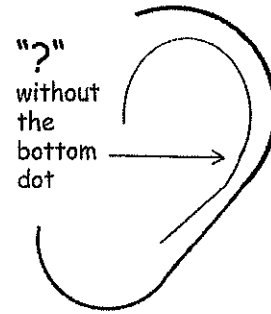
1. Start with 2 overlapping circles on a diagonal



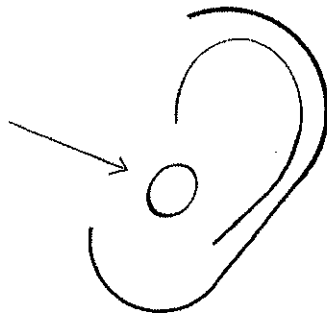
2. Erase parts shown with dash lines



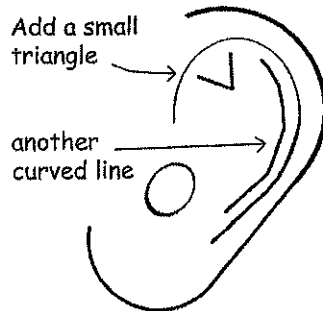
3. Draw the top of a question mark shape



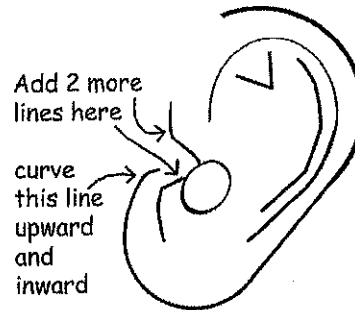
4. Add a small circle



5. Add more as seen below ...



6. Add a few more details



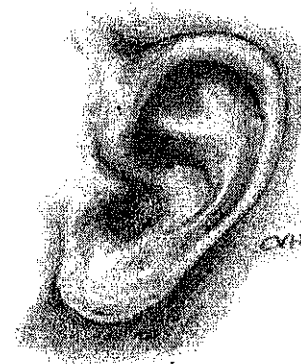
7. Make these 2 shapes and shade them in



8. Fill in the areas as seen below

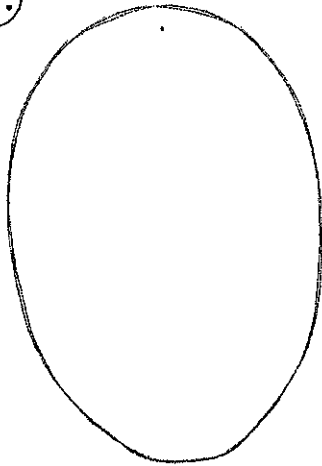


9. Shade



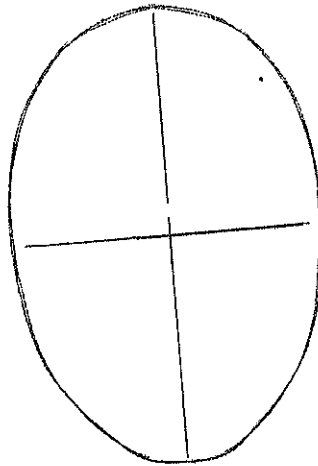
A Basic Human Face

1.



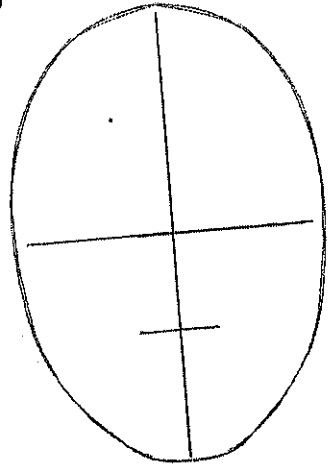
Start with an oval or "upside down" egg shape. The top part should be slightly fuller.

2.



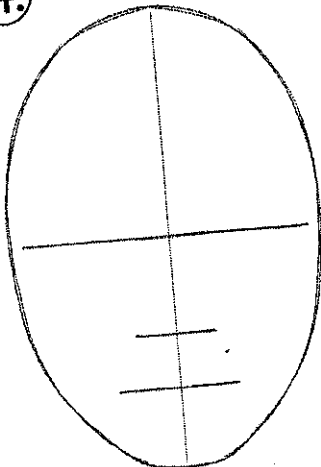
Make a lower case letter "t" in the center of the face.

3.



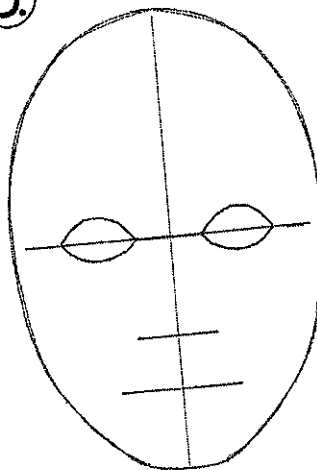
Put your finger in the center of the "t" and your other finger on the chin. Find the center and draw a line there. This will be the bottom of the nose.

4.



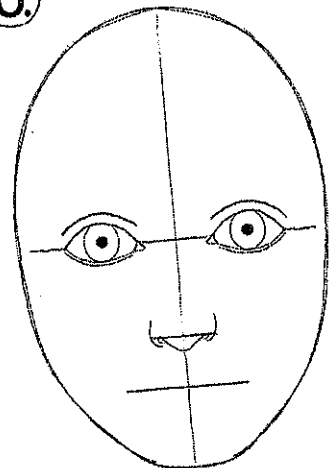
Put your finger in the center of the line you just made and your other finger on the chin. Find the middle, make one last line. This will be the mouth.

5.



On the top line, draw 2 almond/football shapes for the eyes.
TIP: The distance between your eyes is about the width of one eye.

6.

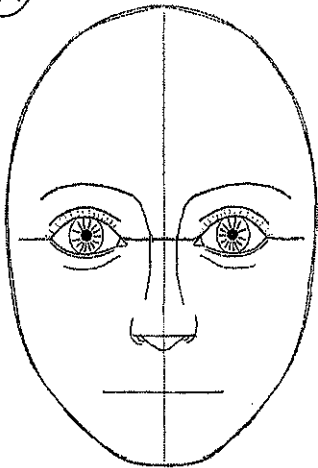


Add the iris, pupil, eye lids, et
On the second line, draw the bottom of the nose.
TIP: The width of the bottom of the nose is about the same as the width between the eyes.

A Basic Human Face

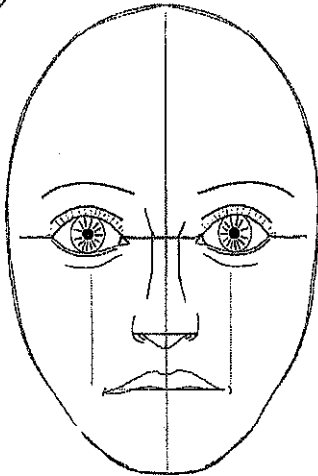
... continued

7.



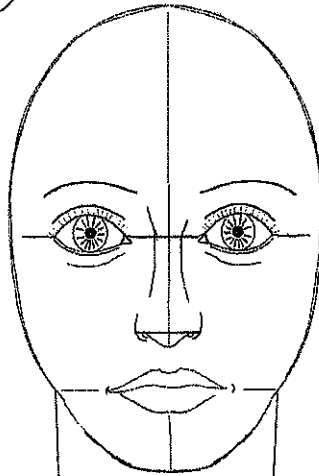
Add "spokes" in the iris and lines for the brows and sides of the nose. **TIP #1:** The sides of your nose are connected to your brows! **TIP #2:** The fattest part of the nose is the base, the thinnest part is between the brows. (think triangle shaped)

8.



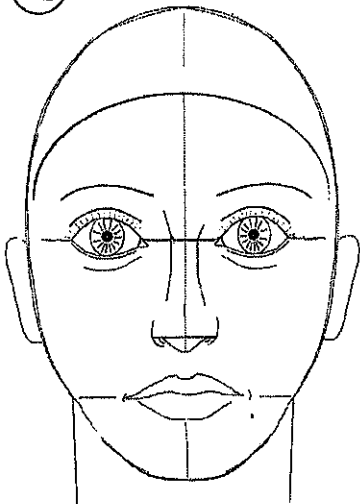
Start the lips. The mouth is usually as wide as the distance between the pupils. **TIP:** Don't forget to add the "Cupid's Bow": the little divit at the top of the upper lip.

9.



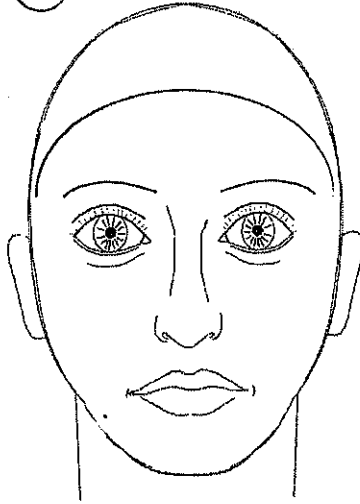
Add the neck lines. **TIP:** The neck is about as wide as the edges of the mouth lines. Add the bottom lip. **TIP:** The bottom is usually fuller than the upper on MOST people.

10.



Add the hairline (looks like a swim cap). Add the ears. **TIP:** The top of the ear lines up with the eye line, the bottom of the ear lines up with the bottom of the nose.

11.



Erase the guide lines.

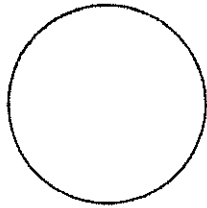
12.



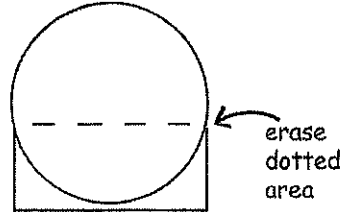
Add hair and shade.

Draw a Human Skull

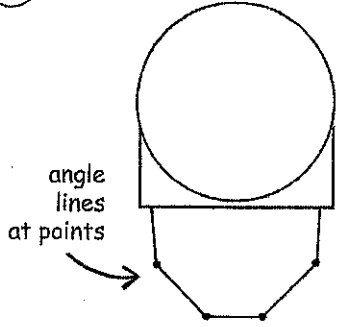
1. Start with a circle



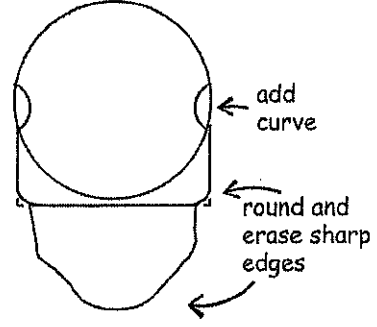
2. Add a rectangle



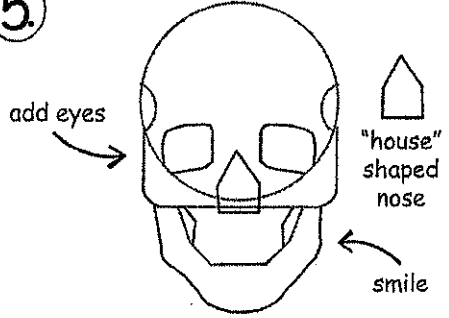
3. Add jaw line



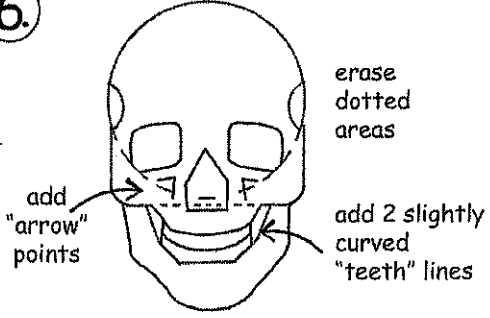
4.



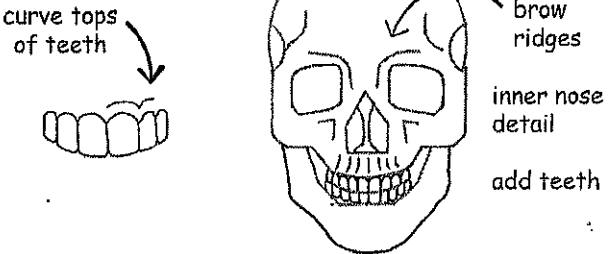
5.



6.



7.



8. Shade



* email me videos etc for twitter!
dslay@webstercountyschools.org

Physical Science-Gravity

Build an Egg Parachute

P
a
r
t
1

Design a Parachute:

You will do this activity as a group/family. You must use teamwork to complete this project.

THE CHALLENGE:

Your team needs to design a parachute that will drop a **raw egg safely to the ground, without cracking (at the slowest speed).**

Constraints:

- You may **ONLY** use the materials you are given, no extra parachute plastic can be used as cushion for the egg.
- You may not touch the parachute while it is dropping
- No tape may be touching the egg

Materials:

Raw eggs

Strings

1 small sandwich bag (for egg)

Stopwatch or phone

1 garbage bag (for parachute)

1 small plastic Dixie cup

1 small paper towel

Directions:

1. Cut the parachute out of a garbage bag. Cut three to four pieces of string (equal length) for each parachute to attach to the bag holding the egg. Use the small sandwich bag to hold the egg (in case it breaks.) Practice dropping your parachutes a few times with some kind of weight in the plastic bag, make adjustments as needed.

As a team:

1. One person will drop the parachute from the same height while another records the time. You will record distance and time data and the condition of the egg in a data table and then calculate speeds. (Speed = distance/time) Do this for each egg tested.

<u>Egg Parachute Data:</u>				
Group:	<u>Distance:</u>	<u>Time:</u>	<u>Speed:</u> d/t	<u>Condition of egg</u>
1				
2				
3				

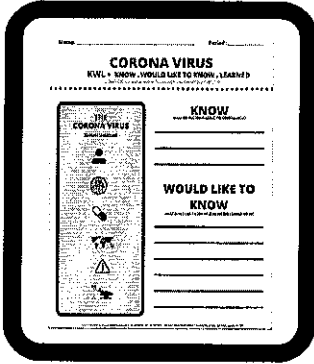
4				
5				
6				

Egg Parachute: Analysis Questions:

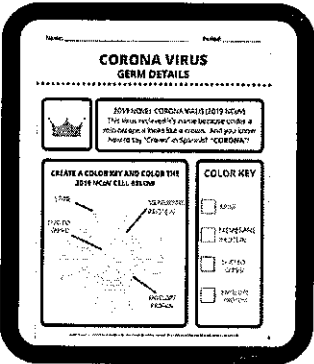
1. What two forces were affecting your egg parachute?
2. Were the forces balanced or unbalanced? Why?
3. Which force is stronger? Why?
4. What happened to your egg?
5. Was your parachute successful? Why?
6. What did you notice about the parachutes that worked the best?
What made them work well?
7. What is air resistance?
8. What is friction?
9. Air resistance is a type of friction. Which type is it, static or sliding?

CORONA VIRUS

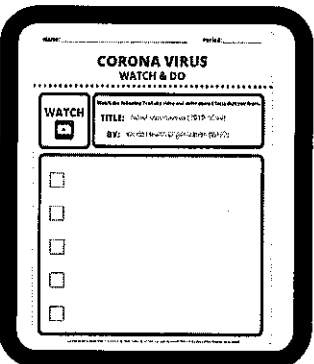
DIRECTIONS



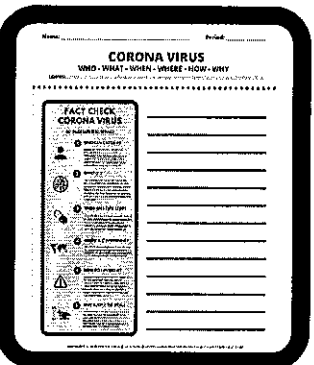
1 **Worksheet 1** gives students a chance to record anything they know already about the Corona Virus as well as at least 1 thing they'd like to know about the Corona Virus. (5 min.)



2 **Worksheet 2** moves in a new direction, giving students some science background on the virus. After creating a color key of their own, students will color the cell based on labels. (10 min.)



3 **Worksheet 3** adds in a little dose of media! The directions point you to a YouTube video about the Corona Virus that is short, but very informative. Students use this worksheet to record 5 interesting facts from the video clip. If there is extra time at the end of class, student can pair up and share- or you can make sharing a class activity. (10-15 min.)



4 **Worksheet 4** requires students to answer their own "Would Like To Know" question from Worksheet 1, using the information on the left side of the worksheet- or info from their work on Worksheet 2 or 3 (10 min.)

Name: _____

Period: _____

CORONA VIRUS

KWL • KNOW . WOULD LIKE TO KNOW . LEARNED

COMPLETE THE KNOW AND WOULD LIKE TO KNOW SECTIONS BELOW.

THE CORONA VIRUS

SO MANY QUESTIONS



KNOW

WHAT DO YOU KNOW ABOUT THE CORONA VIRUS?

WOULD LIKE TO KNOW

WHAT QUESTIONS DO YOU HAVE ABOUT THE CORONA VIRUS?

Name: _____

CORONA VIRUS

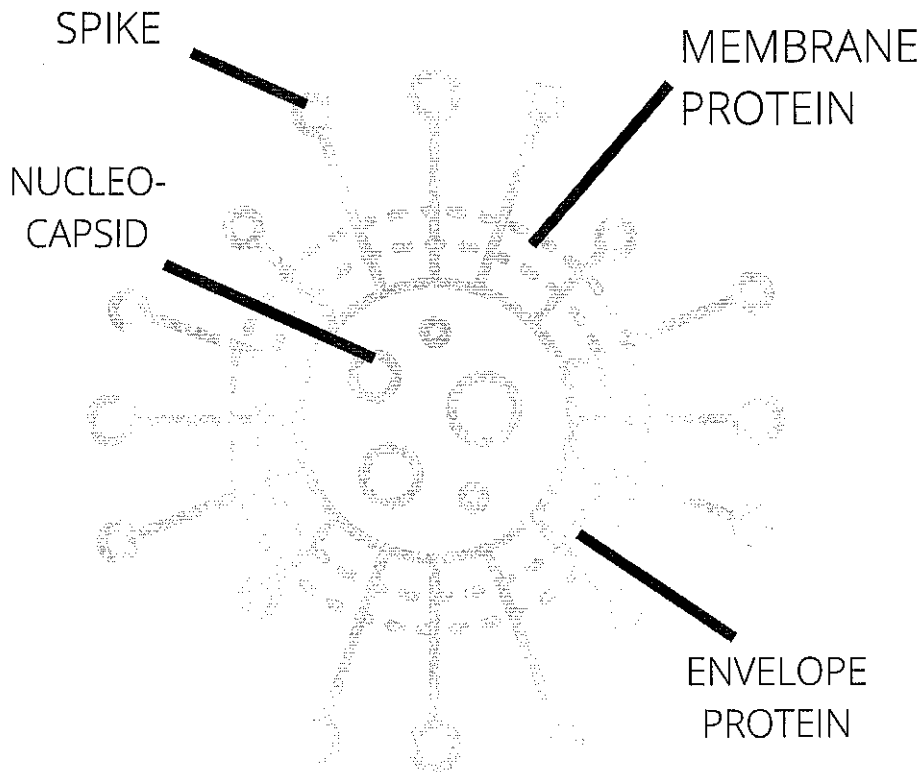
GERM DETAILS

.....



2019 NOVEL CORONA VIRUS (2019 NCoV)
This virus received its name because under a microscope it looks like a crown. And you know how to say "Crown" in Spanish? "**CORONA**"!

**CREATE A COLOR KEY AND COLOR THE
2019 NCoV CELL BELOW**



COLOR KEY

- SPIKE
- MEMBRANE PROTEIN
- NUCLEO-CAPSID
- ENVELOPE PROTEIN

Name: _____

Period: _____

CORONA VIRUS

WATCH & DO

WATCH



Watch the following YouTube video and write down 5 facts that you learn.

TITLE: Novel coronavirus (2019-nCoV)

BY: World Health Organization (WHO)

LINK: <https://tinyurl.com/tg2ya7t>

CORONA VIRUS

WHO - WHAT - WHEN - WHERE - HOW - WHY

LEARNED: Use the information below and the space provided to answer your "Would Like To Know" question(s) about the Corona Virus.

FACT CHECK CORONA VIRUS



1 WHO CAN CATCH IT?

Anyone can catch this virus. No one is off limits, as we know that germs don't discriminate. Those that work in the health care system or are taking care of infected people are most at risk. It is contagious and can be passed person to person as well as through air droplets from a cough or sneeze.



2 WHAT IS IT?

The Corona Virus is a virus that was discovered in December 2019. There are different types of the Coronavirus that cause respiratory infections like coughing or pneumonia. In some cases cause very serious and potentially fatal conditions.



3 WHEN WILL THIS STOP?

Currently scientists all over the world are hurrying to create antiviral drugs and vaccines for this virus in order to get control of transmission and suffering for people worldwide. There are tests now for detecting Coronavirus in a person, but scientists warn it may be a year or more before we have a vaccine.



4 WHERE IS IT HAPPENING?

The Corona virus is occurring all over the world, with confirmed cases seen in dozens of countries including China, Italy, France and the United States. The place that is most impacted right now is China, specifically the city of Wuhan.



5 HOW DO I AVOID IT?

Avoiding unnecessary contact with sick people is the best place to start. Basic precautionary measures such as hand washing and covering your mouth when you sneeze can significantly aid in the prevention of transmitting this virus. Eating healthy and taking care of yourself also help keep your immune system strong.



6 WHY SUCH A BIG DEAL?

As with the regular flu, this virus can be deadly for those with compromised immune systems (the elderly or those already very sick from something else). But, unlike the regular flu, it does not have a vaccine. We are just in a very uncertain and unprotected time since we know so little. This isn't the first mystery virus to appear on the scene.

Natural Hazard City Report

Overview: Students in small groups select a natural hazard and create a report for a fictional city about the potential risks that the hazard poses as well as ways that the city can prepare for the hazard in order to minimize the damage.

NGSS Standard

- MS-ESS3-2: Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.

Objectives: Students will demonstrate their ability to...

- Research a particular natural disaster using a variety of resources.
- Analyze the causes and effects of a natural disaster.
- Apply an understanding of a chosen natural disaster to make real-world suggestions about how to prevent the disaster or to limit its damaging effects.



Natural Hazard City Report

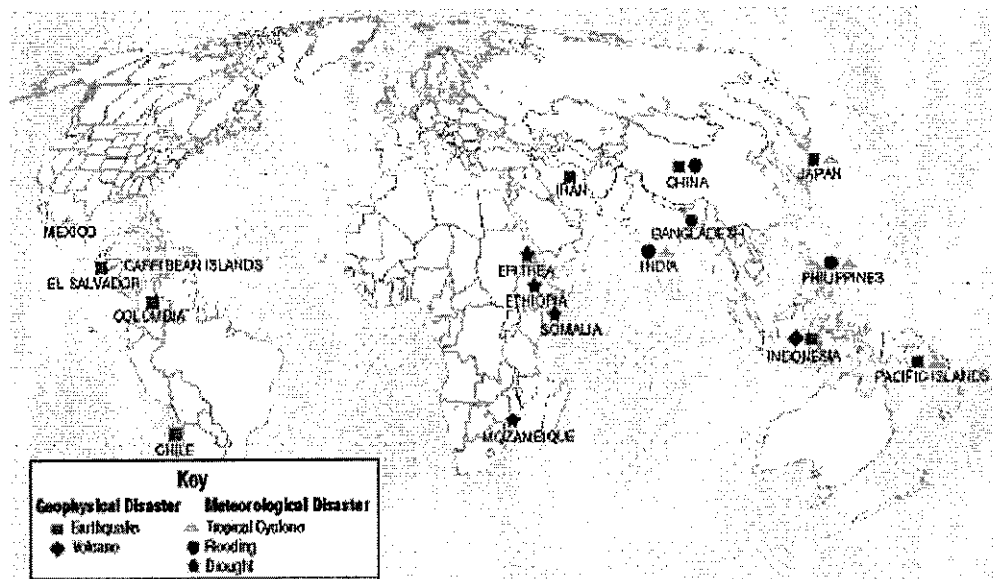
You are an earth scientist who specializes in natural disasters. You and your team have been asked to make recommendations concerning a city's preparedness for a possible natural disaster. Your recommendations on damage prevention will be delivered to the City Council.

Choose a natural disaster, make certain that you understand how and why such a disaster occurs, the historical patterns/trends of the disaster (when and where it typically "hits"), early warning signs and the destructive power of the hazard.

Invent a city where your chosen disaster could occur. Describe the city, its geographical location, its population and any other information pertinent to the report. Prepare a report on the possibility of this disaster occurring in this city and how to effectively prepare for it.

Disasters: Choose one or more of the following disasters

- Volcanoes
- Earthquakes
- Landslides
- Tsunamis
- Hurricanes
- Tornadoes
- Floods
- Wildfires
- Asteroid Impact
- Drought



Required Information

1. **Description of the City** - In this section, you should include a brief description of the city, its name, location, basic demographics and any special features relating to the recommended disaster plan. The location should be one that is likely to experience the hazard.
2. **Cause** - Explain how and why this hazard occurs.
3. **Destructive Power** - What type of damage is the city at risk of during a given natural hazard event. You can use real cities as a comparison.

4. **Locations** - Where are the areas on earth that are susceptible to the natural hazard, including areas designated as at the greatest and least risk for severe events. Your city should be in a high-risk area.
5. **Frequency** - How often is the city likely to experience this type of event.
6. **Early Warnings** - Explain what features, if any, occur before a given natural hazard event that can be used to predict the occurrence of the natural hazard event and when and where they can be observed.
7. **Forecast** - Using patterns in the data, make a prediction for the potential of a natural hazard event to affect an area in the future.
8. **Disaster Plan** - Provide at least three recommendations for how the town can prepare for the hazard with the use of technologies that have been developed to limit the effects of the event (e.g., the design of buildings and bridges to resist earthquakes, warning sirens for tsunamis, storm shelters for tornados, levees along rivers to prevent flooding).

Resources: Here are links to some websites that should help you with your report.

- Ready.gov: <https://www.ready.gov/natural-disasters>
- National Geographic: <http://environment.nationalgeographic.com/environment/natural-disasters/>
- Basic Planet - Natural Disasters: <http://www.basicplanet.com/natural-disasters/>
- CDC Natural Disasters: <http://emergency.cdc.gov/disasters/>
- FEMA Hazard Mitigation Planning: <https://www.fema.gov/hazard-mitigation-planning>

*If you make a display such as poster etc., send to dsley@webstercountyschools.org and I will show off your work on our school twitter page



Grade 8 Reference Sheet

1 inch = 2.54 centimeters	1 kilometer = 0.62 miles	1 cup = 8 fluid ounces
1 meter = 39.37 inches	1 pound = 16 ounces	1 pint = 2 cups
1 mile = 5280 feet	1 pound = 0.454 kilograms	1 quart = 2 pints
1 mile = 1760 yards	1 kilogram = 2.2 pounds	1 gallon = 4 quarts
1 mile = 1.609 kilometers	1 ton = 2000 pounds	1 gallon = 3.785 liters
		1 liter = 0.264 gallons
		1 liter = 1000 cubic centimeters

Area (A)	
Triangle	$A = \frac{1}{2}bh$
Parallelogram	$A = bh$
Circle	$A = \pi r^2$
Circumference (C)	
Circle	$C = \pi d$ $C = 2\pi r$
Volume (V)	
General Prisms	$V = Bh$
Cylinder	$V = \pi r^2 h$
Sphere	$V = \frac{4}{3}\pi r^3$
Cone	$V = \frac{1}{3}\pi r^2 h$

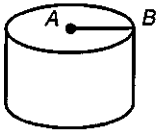
General Formulas	
Pythagorean Theorem	$a^2 + b^2 = c^2$



Reteaching 9-1

Solids

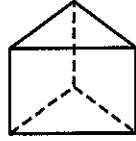
These three-dimensional figures are space figures, or *solids*.



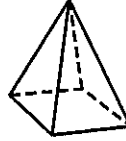
cylinder



cone



prism



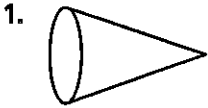
pyramid

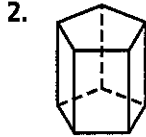
A *cylinder* has two congruent circular bases. \overline{AB} is a radius.

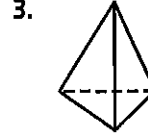
A *cone* has one circular base. \overline{CD} is a diameter.

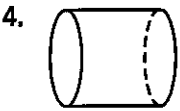
A *prism* has two bases that are congruent and parallel. The lateral faces are parallelograms. A *pyramid* has one base. The lateral faces are triangles. The shape of a base is used to name the solid. A triangular prism and a square pyramid are shown above.

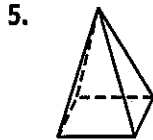
For each figure, describe the base(s) and name the figure.

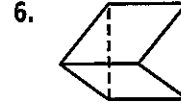






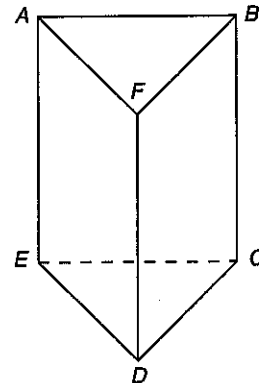






For the figure, name a pair of parallel lines and a pair of intersecting lines.

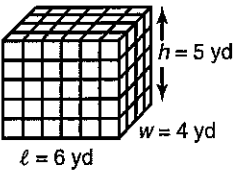
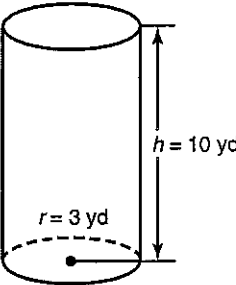
7. _____



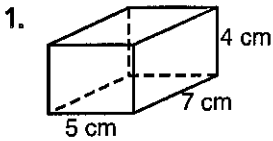
Reteaching 9-2

Volume of Prisms and Cylinders

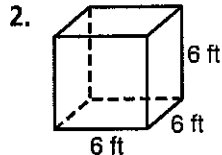
To find the volume of a prism or a cylinder, multiply the base area B and the height h .

	① Find the base area B .	② Multiply base area B and height h . $V = Bh$
 <p>$\ell = 6$ yd $w = 4$ yd $h = 5$ yd</p>	$B = \ell w$ $= 6 \cdot 4$ $= 24 \text{ yd}^2$	$V = Bh$ $= 24 \cdot 5$ $= 120 \text{ yd}^3$ <p>The volume is 120 yd³.</p>
 <p>$r = 3$ yd $h = 10$ yd</p>	$B = \pi r^2$ $= \pi \cdot 3^2$ $\approx 28.26 \text{ yd}^2$	$V = Bh$ $\approx 28.26 \text{ yd}^2 \times 10$ $\approx 282.6 \text{ yd}^3$ <p>The volume is about 283 yd³.</p>

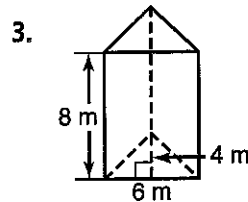
Find the base area and volume of each prism.



$B =$ _____
 $V =$ _____

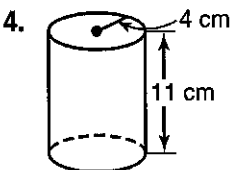


$B =$ _____
 $V =$ _____

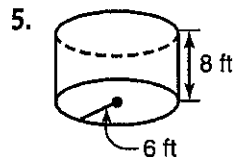


$B =$ _____
 $V =$ _____

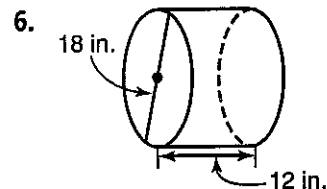
Find the base area of each cylinder to the nearest hundredth. Then find the volume of each cylinder to the nearest cubic unit.



$B \approx$ _____
 $V \approx$ _____



$B \approx$ _____
 $V \approx$ _____



$B \approx$ _____
 $V \approx$ _____

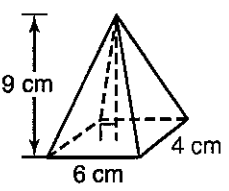
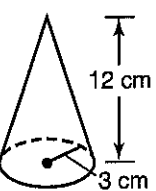
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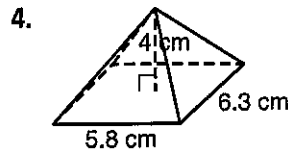
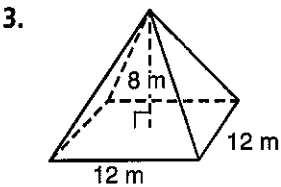
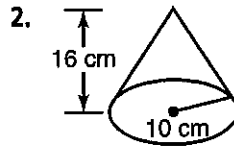
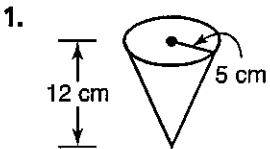
Reteaching 9-3

Volumes of Pyramids and Cones

To find the volume of a pyramid or cone, multiply $\frac{1}{3}$, the base area B , and the height h .

	① Find the base area B .	② Multiply $\frac{1}{3}$, the base area B , and the height h . $V = \frac{1}{3}Bh$
	$B = \ell w$ $= 6 \cdot 4$ $= 24 \text{ cm}^2$	$V = \frac{1}{3}Bh$ $= \frac{1}{3}(24)(9)$ $= 72 \text{ cm}^3$ <p>The volume is 72 cm^3.</p>
	$B = \pi r^2$ $= \pi \cdot 3^2$ $\approx 28.26 \text{ cm}^2$	$V = \frac{1}{3}Bh$ $\approx \frac{1}{3}(28.26)(12)$ $\approx 113.04 \text{ cm}^3$ <p>The volume is about 113 cm^3.</p>

Find the volume of each figure to the nearest whole cubic unit.



5. Find the height of a cone with an approximate volume of 134 cm^3 and a radius of 4 cm.

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Reteaching 9-4

Spheres

Find the surface area and volume of a beach ball with a radius of 8 inches.

The *surface area* of a sphere is four times the product of π and the square of the radius r .

$$\begin{aligned} \text{S.A.} &= 4\pi r^2 && \leftarrow \text{Surface area of a sphere} \\ &= 4\pi(8^2) && \leftarrow \text{Substitute.} \\ &= 256\pi && \leftarrow \text{Simplify.} \\ &\approx 804 && \leftarrow \text{Use a calculator.} \end{aligned}$$

The surface area of the beach ball is about 804 in.².

The *volume* of a sphere is four-thirds of the product of π and the radius r cubed.

$$\begin{aligned} V &= \frac{4}{3}\pi r^3 && \leftarrow \text{Volume of a sphere} \\ &= \frac{4}{3}\pi(8^3) && \leftarrow \text{Substitute.} \\ &= \frac{2,048}{3}\pi && \leftarrow \text{Simplify.} \\ &\approx 2,145 && \leftarrow \text{Use a calculator.} \end{aligned}$$

The volume of the beach ball is about 2,145 in.³.

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A glass blower sells opalescent glass spheres. Find the surface area and volume of each sphere to the nearest whole number.

1. blue: $r = 2$ in.

2. green: $d = 9$ cm

3. yellow: $d = 6$ in.

4. multicolored: $r = 3.5$ in.

5. clear: $r = 6.3$ cm

6. opaque: $d = 8.5$ in.

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Reteaching 9-5

Exploring Similar Solids

Two solids are *similar solids* if they have the same shape and all of their corresponding lengths are proportional. A special relationship exists among the measures of similar solids:

- The ratios of the corresponding dimensions of similar solids is $\frac{a}{b}$.
- The ratio of their surface areas is $\frac{a^2}{b^2}$.
- The ratio of their volumes is $\frac{a^3}{b^3}$.

Example: Two similar cylindrical watering cans have diameters of 14 in. and 18 in. Find the volume of the larger watering can if the volume of the smaller watering can is 882 in.³.

- ① Write the ratio of corresponding dimensions.

$$\frac{14}{18} = \frac{7}{9}, \text{ so the ratio of the volumes is } \frac{a^3}{b^3} = \frac{7^3}{9^3}, \text{ or } \frac{343}{729}.$$

- ② Write a proportion: $\frac{\text{volume of small watering can}}{\text{volume of large watering can}} = \frac{343}{729}$

$$\frac{882}{x} = \frac{343}{729} \quad \leftarrow \text{Substitute the known volume.}$$

$$343x = (882)(729) \quad \leftarrow \text{Cross multiply.}$$

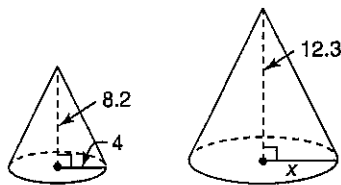
$$343x = 642,978 \quad \leftarrow \text{Divide both sides by 343.}$$

$$x = 1,874.57 \quad \leftarrow \text{Simplify.}$$

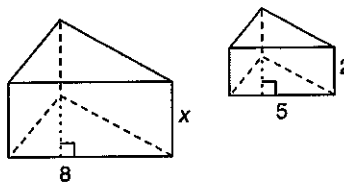
The volume of the larger watering can is about 1,875 in.³.

For each pair of similar solids find the value of the variable.

1.



2.



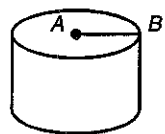
3. A triangular prism has a height of 18 cm, surface area of 463 cm², and volume of 279 cm³. Find the surface area and volume of a similar prism with a height of 12 cm. Round your answers to the nearest whole number.

4. A rectangular prism has a height of 24 inches, a surface area of 1,088 in.² and a volume of 2,112 in.³. Find the surface area and volume of a similar prism with a height of 36 in.

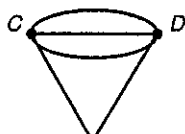
Reteaching 9-1 * Answers *

Solids

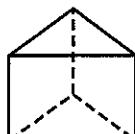
These three-dimensional figures are space figures, or *solids*.



cylinder



cone



prism



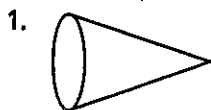
pyramid

A *cylinder* has two congruent circular bases. \overline{AB} is a radius.

A *cone* has one circular base. \overline{CD} is a diameter.

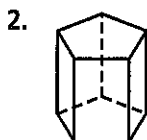
A *prism* has two bases that are congruent and parallel. The lateral faces are parallelograms. A *pyramid* has one base. The lateral faces are triangles. The shape of a base is used to name the solid. A triangular prism and a square pyramid are shown above.

For each figure, describe the base(s) and name the figure.



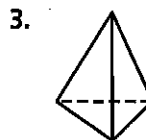
circle

cone



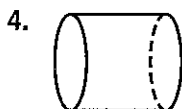
pentagon

pentagonal prism



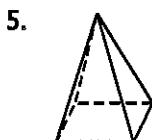
triangle

triangular pyramid



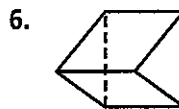
circle

cylinder



square

square pyramid

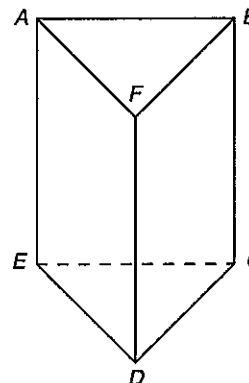


triangle

triangular prism

For the figure, name a pair of parallel lines and a pair of intersecting lines.

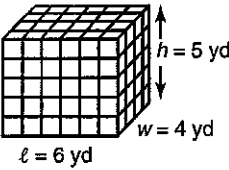
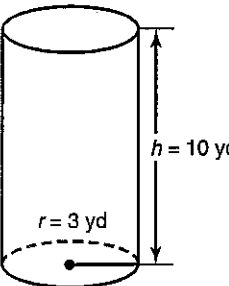
7. Sample answer: \overleftrightarrow{AE} and \overleftrightarrow{BC} ; \overleftrightarrow{AF} and \overleftrightarrow{FD}



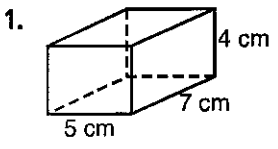
Reteaching 9-2

Volume of Prisms and Cylinders

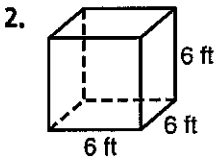
To find the volume of a prism or a cylinder, multiply the base area B and the height h .

	① Find the base area B .	② Multiply base area B and height h . $V = Bh$
	$B = \ell w$ $= 6 \cdot 4$ $= 24 \text{ yd}^2$	$V = Bh$ $= 24 \cdot 5$ $= 120 \text{ yd}^3$ <p>The volume is 120 yd³.</p>
	$B = \pi r^2$ $= \pi \cdot 3^2$ $\approx 28.26 \text{ yd}^2$	$V = Bh$ $\approx 28.26 \text{ yd}^2 \times 10$ $\approx 282.6 \text{ yd}^3$ <p>The volume is about 283 yd³.</p>

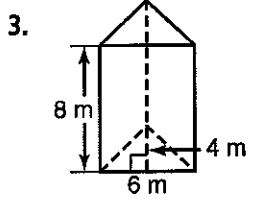
Find the base area and volume of each prism.



$B = \underline{35 \text{ cm}^2}$
 $V = \underline{140 \text{ cm}^3}$

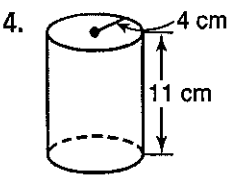


$B = \underline{36 \text{ ft}^2}$
 $V = \underline{216 \text{ ft}^3}$

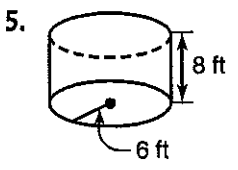


$B = \underline{12 \text{ m}^2}$
 $V = \underline{96 \text{ m}^3}$

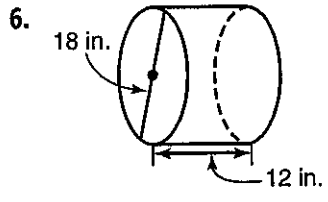
Find the base area of each cylinder to the nearest hundredth. Then find the volume of each cylinder to the nearest cubic unit.



$B \approx \underline{50.24 \text{ cm}^2}$
 $V \approx \underline{553 \text{ cm}^3}$



$B \approx \underline{113.04 \text{ ft}^2}$
 $V \approx \underline{904 \text{ ft}^3}$



$B \approx \underline{254.34 \text{ in.}^2}$
 $V \approx \underline{3,052 \text{ in.}^3}$

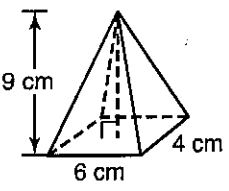
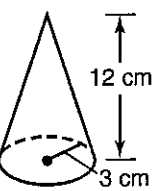
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Reteaching 9-3

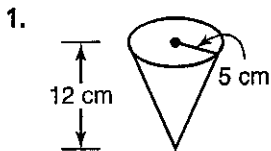
Volumes of Pyramids and Cones

To find the volume of a pyramid or cone, multiply $\frac{1}{3}$, the base area B , and the height h .

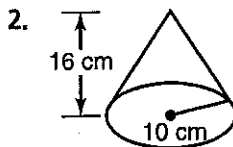
	① Find the base area B .	② Multiply $\frac{1}{3}$, the base area B , and the height h . $V = \frac{1}{3}Bh$
	$B = \ell w$ $= 6 \cdot 4$ $= 24 \text{ cm}^2$	$V = \frac{1}{3}Bh$ $= \frac{1}{3}(24)(9)$ $= 72 \text{ cm}^3$ <p>The volume is 72 cm^3.</p>
	$B = \pi r^2$ $= \pi \cdot 3^2$ $\approx 28.26 \text{ cm}^2$	$V = \frac{1}{3}Bh$ $\approx \frac{1}{3}(28.26)(12)$ $\approx 113.04 \text{ cm}^3$ <p>The volume is about 113 cm^3.</p>

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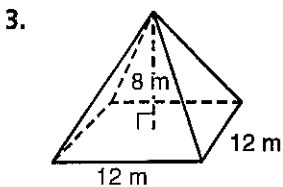
Find the volume of each figure to the nearest whole cubic unit.



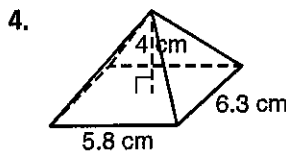
314 cm³



1,675 cm³



384 m³



49 cm³

5. Find the height of a cone with an approximate volume of 134 cm^3 and a radius of 4 cm.

8 cm

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Reteaching 9-4

Spheres

Find the surface area and volume of a beach ball with a radius of 8 inches.

The *surface area* of a sphere is four times the product of π and the square of the radius r .

$$\begin{aligned} \text{S.A.} &= 4\pi r^2 && \leftarrow \text{Surface area of a sphere} \\ &= 4\pi(8^2) && \leftarrow \text{Substitute.} \\ &= 256\pi && \leftarrow \text{Simplify.} \\ &\approx 804 && \leftarrow \text{Use a calculator.} \end{aligned}$$

The surface area of the beach ball is about 804 in.².

The *volume* of a sphere is four-thirds of the product of π and the radius r cubed.

$$\begin{aligned} V &= \frac{4}{3}\pi r^3 && \leftarrow \text{Volume of a sphere} \\ &= \frac{4}{3}\pi(8^3) && \leftarrow \text{Substitute.} \\ &= \frac{2,048}{3}\pi && \leftarrow \text{Simplify.} \\ &\approx 2,145 && \leftarrow \text{Use a calculator.} \end{aligned}$$

The volume of the beach ball is about 2.145 in.³.

A glass blower sells opalescent glass spheres. Find the surface area and volume of each sphere to the nearest whole number.

1. blue: $r = 2$ in.

$$\text{S.A.} \approx 50 \text{ in.}^2; V \approx 34 \text{ in.}^3$$

2. green: $d = 9$ cm

$$\text{S.A.} \approx 254 \text{ cm}^2; V \approx 382 \text{ cm}^3$$

3. yellow: $d = 6$ in.

$$\text{S.A.} \approx 113 \text{ in.}^2; V \approx 113 \text{ in.}^3$$

4. multicolored: $r = 3.5$ in.

$$\text{S.A.} \approx 154 \text{ in.}^2; V \approx 180 \text{ in.}^3$$

5. clear: $r = 6.3$ cm

$$\text{S.A.} \approx 499 \text{ cm}^2; V \approx 1,047 \text{ cm}^3$$

6. opaque: $d = 8.5$ in.

$$\text{S.A.} \approx 227 \text{ in.}^2; V \approx 321 \text{ in.}^3$$

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Reteaching 9-5

Exploring Similar Solids

Two solids are *similar solids* if they have the same shape and all of their corresponding lengths are proportional. A special relationship exists among the measures of similar solids:

- The ratios of the corresponding dimensions of similar solids is $\frac{a}{b}$.
- The ratio of their surface areas is $\frac{a^2}{b^2}$.
- The ratio of their volumes is $\frac{a^3}{b^3}$.

Example: Two similar cylindrical watering cans have diameters of 14 in. and 18 in. Find the volume of the larger watering can if the volume of the smaller watering can is 882 in.³.

- ① Write the ratio of corresponding dimensions.

$$\frac{14}{18} = \frac{7}{9}, \text{ so the ratio of the volumes is } \frac{a^3}{b^3} = \frac{7^3}{9^3}, \text{ or } \frac{343}{729}.$$

- ② Write a proportion: $\frac{\text{volume of small watering can}}{\text{volume of large watering can}} = \frac{343}{729}$

$$\frac{882}{x} = \frac{343}{729} \quad \leftarrow \text{Substitute the known volume.}$$

$$343x = (882)(729) \quad \leftarrow \text{Cross multiply.}$$

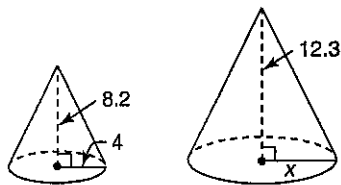
$$343x = 642,978 \quad \leftarrow \text{Divide both sides by 343.}$$

$$x = 1,874.57 \quad \leftarrow \text{Simplify.}$$

The volume of the larger watering can is about 1,875 in.³.

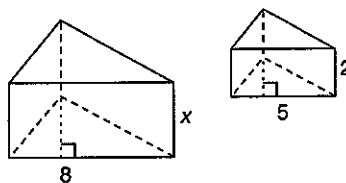
For each pair of similar solids find the value of the variable.

1.



$$x = 6$$

2.



$$x = 3.2$$

3. A triangular prism has a height of 18 cm, surface area of 463 cm², and volume of 279 cm³. Find the surface area and volume of a similar prism with a height of 12 cm. Round your answers to the nearest whole number.

$$206 \text{ cm}^2; 83 \text{ cm}^3$$

4. A rectangular prism has a height of 24 inches, a surface area of 1,088 in.² and a volume of 2,112 in.³. Find the surface area and volume of a similar prism with a height of 36 in.

$$2,448 \text{ in.}^2; 7,128 \text{ in.}^3$$

Summarizing Literary Texts

MS CCRS RL.8.2: ... provide an accurate summary of the text based upon this analysis.

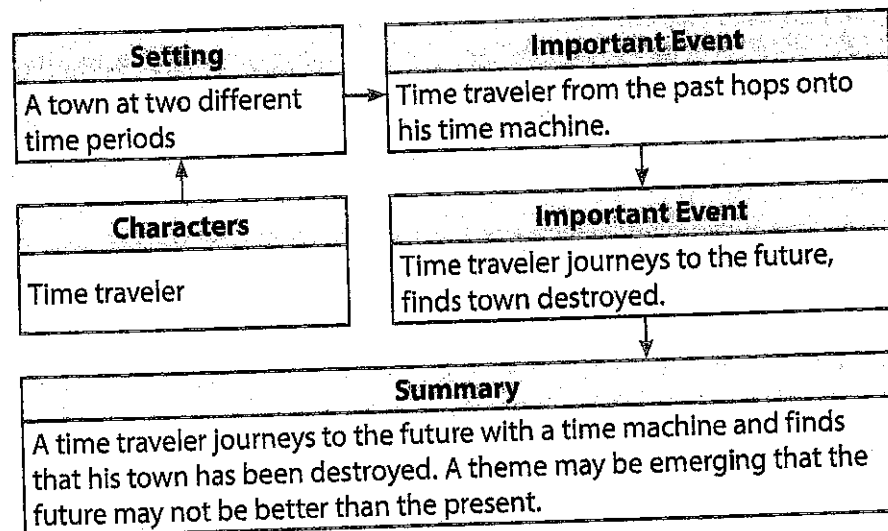
Theme: *Views of Other Worlds*

Your best friend missed her favorite show. She knows you watch it, too, and calls asking you to **summarize** what happened. When you summarize, you briefly retell the main characters, setting, conflict, important events, and theme. To paint as clear a picture as possible, you make sure your summary is **accurate**, or correct, and **objective**, or free of your own opinions.

Study these images about a time traveler. Look for details about character, setting, and events.



Now review the graphic organizer below. Notice that it includes only essential details, tells events in the order they happened, and is free of personal opinions.



Summarizing isn't just a way for you to describe a story to others. It can also be a tool to help you understand what you're reading. Stop occasionally to summarize what has happened. Be sure you include only the most important details. This process will help you check your understanding of a text and remember important details.

Read the first three paragraphs of this science fiction story.

Genre: Science Fiction

Touchdown on Spectra Omicron 8 *by William Nicols*

This just in! The UFP Ulysses vessel has touched down on the planet Spectra 8. This signifies the first stage in its terraforming expedition. The complex multi-stage terraforming process will make Spectra's atmosphere more like that of Earth and livable for humans.

Captain Jane Young and her crew of 21 blasted off in May of 2218 for the 6-year journey through deep space to reach the lifeless planet. They encountered a number of problems along the way. First, they were stuck in the gravitational pull of an anti-matter black hole. They also had to deal with a salmonella outbreak in the ship's food storage.

In October of this year, the Ulysses established orbit. Lieutenant Bobby Sullivan piloted the vessel toward the planet's surface. He set the angle-of-entry so the ship would not burn up when passing through the atmosphere. After securing visual confirmation of the landing site, Sullivan deployed the landing gear, applied the thrusters, and brought the ship in for a soft three-point landing.

(continued)

Explore how to answer this question: *"How can you best summarize this part of the story?"*

Remember that a summary is a brief retelling that includes the main characters, setting, important events, and theme, if appropriate. Underline each of these things in the story above.

Summaries should be accurate and objective, or correct and free of opinions and judgments. Read the following summary of the story. Cross out any opinions and personal feelings in the summary.

In the year 2218, the Ulysses sets off on a really dangerous mission to begin the terraforming of planet Spectra 8. They have to deal with some scary problems along the way, but they finally reach the planet. The most interesting part is how pilot Bobby Sullivan brings the ship in for a safe landing.

- "Really dangerous" in the first sentence is an opinion and not a detail from the text. Cross it out.
- The word "scary" in the second sentence is another opinion. Cross it out, too.
- Remove "The most interesting part," which is a judgment.

Find a partner and work together to improve this part of the summary. Include additional information about the characters, setting, and important events. Also be sure to keep the summary accurate and objective. Avoid opinions and judgments, such as "My favorite part was . . ."



Close Reading

Before you start summarizing, **underline** the names of important characters as well as clues about the setting. **Circle** important events.

Hint

Avoid answer choices that include an opinion or unimportant details.

Continue reading the science fiction story. Then answer the question that follows.

(continued from page 78)

Now that the *Ulysses* has landed, it is time for Young and her team to begin exploring the planet's surface. Spectra Omicron 8 is little more than loose rocks of red clay. One of Captain Young's top priorities is establishing the *Ulysses* base camp with its many domed sections. With so much carbon monoxide in the atmosphere, oxygen corridors must be built to connect the domes, which will be used for farming, geological research, and communications. A molten-carbon drill will then be constructed in the camp's center to burrow through to the planet's core, carrying the terraforming unit that will aid in surface reconstruction.

Circle the correct answer.

Which is the best summary for this portion of the text?

- A Captain Young explores the planet's surface and begins building the base camp.
- B Captain Young shows she is a strong leader by quickly establishing the base camp.
- C The domes in the base camp will be used for farming, geological research, and communications.
- D The drill at the center of the camp is made from molten-carbon.



Show Your Thinking

Explain why the other answer choices are not good summaries of the second part of the text.



Take turns briefly summarizing the entire story with a partner, using details about character, setting, important events, and theme. Make sure your summaries are accurate and free of opinions and judgments.



Read the science fiction story. Use the Study Buddy and the Close Reading to guide your reading.

Genre: Science Fiction



As I read, I will pause to summarize who the characters are, where the story is set, and what some of the important events are.

Prime Contact *by Justin Greenfield*

Imperator's log, the 36th of Quelnar, 4278

- 1 Today I had a fascinating meeting with a promising new captain by the name of Allya. The first thing I noticed about her was the remarkable hue of her purple eyes, much more vibrant than the rest of ours.
- 2 At any rate, she relayed to me how her crew had recently returned from a mission to the third planet from the central star, where they had an encounter with one of the dominant life forms. I inquired as to the extent of the creatures' technology, and Allya replied that they had advanced machines but preferred to let their servants operate them. These servants live with them—in fact, there are often several servants in each home. They walk about on two legs, prepare food, and feed their four-legged masters.
- 3 Allya then told me that a member of this alien race had returned with them on their ship. Of course, I asked to see the creature straight away, and when it was brought into my throne room, I was taken with how friendly it appeared, inviting but cautious. Its wide, green eyes were alert and confident, but—dare I say—bored?
- 4 Since it was a very short and very furry sort of alien, I lay down on the floor to establish better verbal communication with it. I welcomed it to Harlapan, home of the Galactic Confederacy. The creature stretched out its front legs and appeared to bow. I distinctly heard an odd purring sound coming from it. A form of telepathic language it shares with its species, perhaps?
- 5 “Meow,” it said with great dignity before turning to the task of licking its paws. Fascinating.

Close Reading

In addition to the narrator, who are the main characters in the story? **Circle** the first mention of each one.

Underline important details that provide clues about where Allya was and the alien they have encountered.



Hints

Which of the four answer choices is an important statement about the story that does not contain an opinion?

Omit the choices that are not connected to the ending, or that are unimportant or not objective.

The story tells the events in a certain order. That is not, however, the order in which the events actually happened in time.

Use the Hints on this page to help you answer the questions.

- 1 Which of the following would you include in a summary of "Prime Contact"?
 - A It's very funny that the Emperor doesn't realize that the alien is a house cat.
 - B The Emperor of Harlapan asks to meet the alien that has returned with Allya.
 - C The alien loses interest in the Emperor and starts licking its paws.
 - D The Emperor is fascinated by Allya's remarkable purple eyes.
- 2 Which is the best summary for the last events of the story?
 - A Allya travels to the third planet and brings back an alien.
 - B The people of Harlapan are clearly very advanced.
 - C The servants the Emperor describes must be humans.
 - D The alien meows and licks its paws, revealing that it's a cat.
- 3 The notes for a summary need to be arranged correctly into the order in which the events occur in the passage.

Indicate the correct chronological order of the events below by writing the numbers 1 to 8 on the blank before each sentence.

- _____ An alien creature boards Allya's ship.
- _____ Captain Allya tells how the servants care for their masters.
- _____ The Emperor lies down on the floor.
- _____ The Emperor meets with Captain Allya.
- _____ Allya and her crew visit another planet.
- _____ The Emperor notices the alien's confidence.
- _____ The alien makes a strange purring sound.
- _____ The Emperor asks to meet the alien.



Read the story. Then answer the questions that follow.

from *The War of the Worlds*

by H. G. Wells

Earth was not prepared for the Martian invasion that began in a field outside of London. Disbelief turned to horror as the Martian forces spread throughout the country, destroying everything in their path. No human weapons were able to stop their deadly attacks and superior technology. Then a sudden and surprising set of events occurred that changed everything.

1 I came upon the wrecked handling-machine halfway to St. John's Wood station. At first I thought a house had fallen across the road. It was only as I clambered among the ruins that I saw, with a start, this mechanical Samson lying, with its tentacles bent and smashed and twisted, among the ruins it had made. The forepart was shattered. It seemed as if it had driven blindly straight at the house, and had been overwhelmed in its overthrow. It seemed to me then that this might have happened by a handling-machine escaping from the guidance of its Martian. I could not clamber among the ruins to see it, and the twilight was now . . . far advanced. . . .

2 Wondering still more at all that I had seen, I pushed on towards Primrose Hill. Far away, through a gap in the trees, I saw a second Martian, as motionless as the first, standing in the park towards the Zoological Gardens, and silent. A little beyond the ruins about the smashed handling-machine I came upon the red weed¹ again, and found the Regent's Canal, a spongy mass of dark-red vegetation. . . .

3 Great mounds had been heaped about the crest of the hill, making a huge redoubt² of it—it was the final and largest place the Martians had made—and from behind these heaps there rose a thin smoke against the sky. Against the sky line an eager dog ran and disappeared. The thought that had flashed into my mind grew real, grew credible. I felt no fear, only a wild trembling exultation, as I ran up the hill towards the motionless monster. Out of the hood hung lank shreds of brown, at which the hungry birds pecked and tore.

4 In another moment I had scrambled up the earthen rampart and stood upon its crest, and the interior of the redoubt was below me. A mighty space it was, with gigantic machines here and there within it, huge mounds of material and strange shelter places. And scattered about it, some in their overturned war-machines, some in the now rigid handling-machines, and a dozen of them stark and silent and laid in a row, were the Martians—dead—slain by the putrefactive³ and disease bacteria against which their systems were unprepared; slain as late the red weed was being slain; slain, all after man's devices had failed, by the humblest things that God, in his wisdom, has put forth upon this earth.

¹ red weed: a fictional plant native to Mars

² redoubt: temporary fortification, or wall built as a defense

³ putrefactive: rotting, having a foul odor



5 For so it had come about, as indeed I and many men might have foreseen had not terror and disaster blinded our minds. These germs of disease have taken toll of humanity since life began here. . . . But there are no bacteria on Mars, and directly these invaders arrived, directly they drank and fed, our microscopic allies began to work their overthrow.

Answer the questions.

1 This question has two parts. First answer Part A. Then answer Part B.

Part A

Which of the following is the **best** one-sentence summary of paragraph 1?

- A** A machine from space has landed on Earth and is destroying entire cities.
- B** It appears that the Martians use machines to travel to Earth and then abandon them.
- C** The narrator sees and studies a Martian machine that has been badly damaged and abandoned.
- D** The narrator is afraid of what will happen if humans cannot defeat the Martians.

Part B

Which detail from paragraph 1 would be **least** important to include in a longer summary of the paragraph?

- A** On the way to St. John's Wood station, the narrator finds a demolished handling-machine.
- B** The machine seems to have collapsed in the middle of destroying a house.
- C** The narrator believes that the wreckage might be the result of a Martian losing control of the machine.
- D** Due to the lack of light, the narrator cannot see inside the wreck.



2 Which **two** of the following sentences are **not** objective statements of events?

- A The narrator notices a second smashed and motionless handling-machine as he continues on his way towards Primrose Hill.
- B The aliens probably felt they had nothing to fear from the weak creatures of Earth.
- C After seeing smoke behind the Martian redoubt, the narrator has a thought that causes him to run eagerly toward another immobile machine.
- D The remains of a Martian's body are hanging out of the hood of one of the machines.
- E The possibility of life on other planets is a fascinating topic for a fictional narrative.

3 Which statement relating to paragraphs 4 and 5 would be **most** important to include in a summary of the end of the story?

- A The narrator has to stand on the crest of the Martian fortification in order to see the scene in its interior.
- B On the other side of the redoubt is a huge space with odd areas of shelter.
- C The Martians are conquered by simple disease bacteria to which their bodies are not immune.
- D The people of Earth should have recognized the importance of bacteria in defeating the Martians.

4 Write a brief, accurate, and objective summary of this story. Remember to include the most important events, as well as at least **three** key details about characters, setting, and theme.

 **Self Check** *Go back and see what you can check off on the Self Check on page 52.*

There Will Come Soft Rains

By: Ray Bradbury

In the living room the voice-clock sang, *Tick-tock, seven o'clock, time to get up, time to get up, seven o'clock!* as if it were afraid that nobody would. The morning house lay empty. The clock ticked on, repeating and repeating its sounds into the emptiness. *Seven-nine, breakfast time, seven-nine!*

In the kitchen the breakfast stove gave a hissing sigh and ejected from its warm interior eight pieces of perfectly browned toast, eight eggs sunny side up, sixteen slices of bacon, two coffees, and two cool glasses of milk.

"*Today is August 4, 2026,*" said a second voice from the kitchen ceiling, "*in the city of Allendale, California.*" It repeated the date three times for memory's sake. "*Today is Mr. Featherstone's birthday. Today is the anniversary of Mr. Baal's marriage. Insurance is payable, as are the water, gas, and light bills.*"

Somewhere in the walls, relays clicked, memory tapes glided under electric eyes.

Eight-one, tick-tock, eight-one o'clock, off to school, off to work, run, run, eight-one! But no doors slammed, no carpets took the soft tread of rubber heels. It was raining outside. The weather box on the front door sang quietly: "*Rain, rain, go away; umbrellas, raincoats for today...*" And the rain tapped on the empty house, echoing.

Outside, the garage chimed and lifted its door to reveal the waiting car. After a long wait the door swung down again.

At eight-thirty the eggs were shinkled and the toast was like stone. An aluminum wedge scraped them into the sink, where hot water whirled them down a metal throat which digested and flaked them away to the distant sea. The dirty dishes were dropped into a hot washer and emerged twinkling dry.

Nine-fifteen, sang the clock, *time to clean.*

Out of waltzers in the wall, tiny robot mice darted. The rooms were a crawl with the small cleaning animals, all rubber and metal. They thudded against chairs, whining their mousetrapped runners, knocking the rug nap, sucking gently at hidden dust. Then, like mysterious invaders, they popped into their burrows. Their pink electric eyes faded. The house was clean.

Ten o'clock. The sun came out from behind the rain. The house stood alone in a city of rubble and ashes. This was the one house left standing. At night the ruined city gave off a radioactive glow which could be seen for miles.

Ten-fifteen. The garden sprinklers whirled up in golden fountains, filling the soft morning air with scatterings of brightness. The water pecked window panes, running down the charred west side

where the house had been burned, evenly free of its white paint. The entire west face of the house was black, save for five places. Here the silhouette in paint of a man mowing a lawn. Here, as in a photograph, a woman bent to pick flowers. Still farther over, their images burned on wood in one frame instant, a small boy, hands flung into the air, higher up, the image of a thrown ball, and opposite him a girl, hands raised to catch a ball which never came down.

The five spots of paint - the man, the woman, the children, the ball - remained. The rest was a thin charcoaled layer.

The gentle sprinkler rain filled the garden with falling light.

Until this day, how well the house had kept its peace. How carefully it had inquired, "Who goes there? What's the password?" and, getting no answer from lonely foxes and whining cats, it had shut up its windows and drawn shades in an old-fashioned preoccupation with self-protection which bordered on a mechanical paranoia.

It quivered at each sound, the house did. If a sparrow brushed a window, the shade snapped up. The bird, startled, flew off! No, not even a bird must touch the house!

Twelve noon.

A dog whined, shivering, on the front porch.

The front door recognized the dog voice and opened. The dog, once huge and fleshy, but now gone to bone and covered with sores, moved in and through the house, tracking mud. Behind it whined angry mice, angry at having to pick up mud, angry at inconvenience.

For not a leaf fragment blew under the door but what the wall panels flipped open and the copper scrap rats flashed swiftly out. The offending dust, hair, or paper, seized in miniature steel jaws, was raced back to the burrows. There, down tubes which fed into the cellar, it was dropped into the singing vent of an incinerator which sat like evil Baal in a dark corner.

The dog ran upstairs, hysterically yelping to each door, at last realizing, as the house realized, that only silence was here.

It sniffed the air and scratched the kitchen door. Behind the door, the stove was making pancakes which filled the house with a rich baked odour and the scent of maple syrup.

The dog frothed at the mouth, lying at the door, sniffing, its eyes turned to fire. It ran wildly in circles, biting at its tail, spun in a frenzy, and died. It lay in the parlor for an hour.

Two o'clock, sang a voice.

Delicately sensing decay at last, the regiments of mice hummed out as softly as blown gray leaves in an electrical wind.

Two-fifteen.

The dog was gone.

In the cellar, the incinerator glowed suddenly and a whirl of sparks leaped up the chimney.

Two thirty-five.

Bridge tables sprouted from patio walls. Playing cards fluttered onto pads in a shower of pips. Martins transmuted on an oak bench with egg-salad sandwiches. Music played.

But the tables were silent and the cards untouched.

At four o'clock the tables folded like great butterflies back through the paneled walls.

Four-thirty.

The nursery walls glowed.

Animals took shape: yellow graffiti, blue lions, pink antelopes, lilac panthers cavoring in crystal substance. The walls were glass. They looked out upon color and fantasy. Hidden films clocked through well-oiled sprockets, and the walls lived. The nursery floor was woven to resemble a crisp, cereal meadow. Over this ran aluminum roaches and iron crickets, and in the hot still air butterflies of delicate red tissue wavered among the sharp aroma of animal spoons! There was the sound like a great matted yellow hive of bees within a dark bellows, the lazy bumble of a purring lion. And there was the patter of okapi feet and the murmur of a fresh jungle rain, like other hoofs, falling upon the summer-starved grass. Now the walls dissolved into distances of parched grass, mile on mile, and warm endless sky. The animals drew away into thorn brakes and water holes. It was the children's hour.

Five o'clock. The bath filled with clear hot water.

Six, seven, eight o'clock. The dimmer dials manipulated like magic tricks, and in the study a click. In the metal stand opposite the hearth where a fire now blazed up warmly, a cigar popped out, half an inch of soft gray ash on it, smoldering, waiting.

Nine o'clock. The beds warmed their hidden circuits, for nights were cool here.

Nine-five. A voice spoke from the studded ceiling. "Mrs. McClellan, which poem would you like this evening?" The house was silent.

The voice said at last, "Since you express no preference, I shall select a poem at random."
Quiet music rose to back the voice. "Sara Teasdale. As I recall, your favourite..."

*There will come soft rains and the smell of the ground,
And swallows circling with their shimmering sound;*

*And frogs in the pools singing at night,
And wild plum trees in tremulous white;*

Robins will wear their feathery fire,

Whistling their whistles on a low fence-wire;

*And not one will know of the war, not one
Will care at last when it is done.*

*Not one would mind, neither bird nor tree,
If mankind perished utterly;*

*And Spring herself, when she wake at dawn
Would scarcely know that we were gone."*

The fire burned on the stone hearth and the cigar fell away into a mound of quiet ash on its tray. The empty chairs faced each other between the silent walls, and the music played.

At ten o'clock the house began to die.

The wind blew. A falling tree bough crashed through the kitchen window. Cleaning solvent, bottled, shattered over the stove. The room was ablaze in an instant!

"Fire!" screamed a voice. The house lights flashed, water pumps shot water from the ceilings. But the solvent spread on the linoleum, licking, eating, under the kitchen door, while the voices took it up in chorus: "Fire, fire, fire!"

The house tried to save itself. Doors sprang tightly shut, but the windows were broken by the heat and the wind blew and sucked upon the fire.

The house gave ground as the fire in ten billion angry sparks moved with flaming ease from room to room and then up the stairs. While scurrying water rats squeaked from the walls, pistolled their water, and ran for more. And the wall sprays let down showers of mechanical rain.

But too late. Somewhere, sighing, a pump struggled to a stop. The quenching rain ceased. The reserve water supply which had filled baths and washed dishes for many quiet days was gone.

The fire crackled up the stairs. It fed upon Picassos and Matisses in the upper halls, like delicacies, baking off the oily flesh, tenderly crisping the canvases into black shavings.

Now the fire lay in beds, stood in windows, changed the colors of drapes!

And then, reinforcements. From attic trapdoors, blind robot faces peered down with faucet mouths gushing green chemical.

The fire backed off, as even an elephant must at the sight of a dead snake.

Now there were twenty snakes whipping over the floor, killing the fire with a clear cold venom of green froth.

But the fire was clever. It had sent flare outside the house, up through the attic to the pumps there. An explosion! The attic brain which directed the pumps was shattered into bronze shrapnel on the beams.

The fire rushed back into every closet and felt of the clothes hung there.

The house shuddered, oak bone on bone, its bared skeleton cringing from the heat, its wire, its nerves revealed as if a surgeon had torn the skin off to let the red veins and capillaries quiver in the scalded air. *Help, help! Fire! Run, run!* Heat snapped mirrors like the first brittle winter ice. And the voices wailed. *Fire, fire, run, run,* like a tragic nursery rhyme, a dozen voices, high, low, like children dying in a forest, alone, alone. And the voices fading as the wires popped their sheathings like hot chestnuts. One, two, three, four, five voices died.

In the nursery the jungle burned. Blue lions roared, purple giraffes bounded off. The panthers ran in circles, changing color, and ten million animals, running before the fire, vanished off toward a distant steaming river.... Ten more voices died.

In the last instant under the fire avalanche, other choruses, oblivious, could be heard announcing the time, cutting the lawn by remote-control mower, or setting an umbrella frantically out and in, the slamming and opening front door, a thousand things happening, like a clock stop when each clock strikes the hour insanely before or after the other, a scene of maniac confusion, yet unity, singing, screaming, a few last cleaning mice darting bravely out to carry the horrid ashes away! And one voice, with sublime disregard for the situation, read poetry aloud in the fiery study, until all the film spools burned, until all the wires withered and the circuits cracked.

The fire burst the house and let it slum flat down, puffing out skirts of spark and smoke.

In the kitchen, an instant before the rain of fire and timber, the stove could be seen making breakfasts at a psychiatric rate, ten dozen eggs, six loaves of toast, twenty dozen bacon strips, which, eaten by fire, started the stove working again, hysterically hissing!

The crash. The attic smashing into kitchen and parlor. The parlor into cellar, cellar into sub-cellar. Deep freeze, armchair, film tapes, circuits, beds, and all like skeletons thrown in a cluttered mound deep under.

Smoke and silence. A great quantity of smoke.

Dawn showed faintly in the east. Among the ruins, one wall stood alone. Within the wall, a last voice said, over and over again and again, even as the sun rose to shine upon the heaped rubble and sycamur.

"Today is August 5, 2026, today is August 5, 2026, today is..."

Quizlet

NAME _____

5 Matching questions

- _____ What is the rhyme scheme of the Sara Teasdale poem? What literary devices are present?
- _____ What activities does the house continue to perform?
- _____ When the house is almost completely burned, what does it begin doing? What sort of mood is conveyed through Bradbury's description?
- _____ As the house is burning, what literary devices does Bradbury use? Give multiple examples.
- _____ What is interesting about the house? What sort of functions does it perform?

A. The voices kept yelling for help, and that there was a fire. The stove was making too much of everything. The house was frantic and panicked.

B. It makes breakfast, cleans the house, opens the door, shuts the windows, card game set up, the nursery looks like a real safari, the house reads to them, etc.

C. The house can talk; it makes breakfast, rings the clock, weather box, dishwasher, opens garage door, and reads important dates or messages. The family lived a scheduled life.

D. A A B C C D D E E F F -called rhyming couplets; alliteration- repetition of consonants at beginning of word
 • -feathery fire...
 • "...whistling whims..."

E. Bradbury uses a lot of personification "...wind blew and sucked upon the fire" "If fed up Picassos and Matisses in the upper halls" "...the fire was clever..." Smile: "...heat snapped mirrors like the brittle ice..."

5 Multiple choice questions

- We don't need each other to live if we have technology. Technology can be dangerous. Technology can separate us. The same technology we enjoy could kill us. Life goes on without us. We're replaceable by technology.
 - What is the significance of the ending of the story?
 - What is the theme of the story?
 - What is the rhyme scheme of the Sara Teasdale poem? What literary devices are present?
 - What is the setting of the story?
- A big, empty house; it is August 4, 2026 in Allendale, California.
 - What causes the fire in the house?
 - Where is the house set? What is unique about it?
 - What is the setting of the story?
 - What is the theme of the story?

3. Even though the house was burned, everything else continues on, and even the last wall of the house continues saying the date and doing its normal, everyday function. The only wall standing keeps saying, "Today is August 5, 2026..."

- What is the rhyme scheme of the Sara Teasdale poem? What literary devices are present?
 - What is the theme of the story?
 - Where is the house set? What is unique about it?
 - What is the significance of the ending of the story?
- The people actually performing the functions the house is saying.
 - Where is the house set? What is unique about it?
 - What is interesting about the house? What sort of functions does it perform?
 - What is the significance of the ending of the story?
 - What is missing in the routine of activity that the house performs?
 - A tree falls and spills a cleaning spray that catches on fire on the stove.
 - What is missing in the routine of activity that the house performs?
 - What is the setting of the story?
 - What causes the fire in the house?
 - What is the theme of the story?

5 True/False questions

- The family probably died by nuclear bomb; it is the future, so the houses may have been invented to perform functions to make the lives of the families easier. It happened quickly bc you can see the silhouettes of the family when the nuclear bomb hit. → What can you infer has happened to the family who lived in the house? Why is the world the way it is?

True

False
- The house is set by itself; it has a radioactive glow. → What is the significance of the ending of the story?

True

False
- In the poem, it says that Spring will still come, and never know that humans are gone. Nothing is left; mankind is gone. Nature will not care that humans are gone. Personification: "Spring herself when she woke at dawn..." "frogs are singing..." Similarly, the story is of a house that does not know its family is gone, and continues to perform its normal functions. → What similarities does the poem share with the story?

True

False
- The family dog is still alive; he is skin and bones, and covered in sores, a lot of time has most likely passed. He dies. → Who is still alive? What does his appearance tell the reader about the time that has passed?

True

False

Question #1

Instructions for Student

Read the question carefully and select the best answer.

Which of the following best explains why the house continues to serve food and clean up after itself?

- A. The house wants to forget that it's alone.
- B. The house thinks that the family will be back to live there again.
- C. The house does not realize that the family is no longer there.
- D. The house and its functions can never stop.

Question #2

Instructions for Student

Read the question carefully and select the best answer.

The following passage (Paragraphs 11-13) mainly shows that _____.

Until this day, how well the house had kept its peace. How carefully it had inquired, "Who goes there? What's the password?" and, getting no answer from the only foxes and whining cats, it had shut up its windows and drawn shades in an old-maidenly preoccupation with self-protection which bordered on a mechanical paranoia.

It quivered at each sound, the house did, if a sparrow brushed a window, the shade snapped up. The bird, startled, flew off! No, not even a bird must touch the house!

The house was an altar with ten thousand attendants, big, small, servicing, attending, in choirs. But the gods had gone away, and the ritual of the religion continued senselessly, uselessly.

- A. The house was built to service humans, but it desperately tries to function as normal even without humans.
- B. The house was built by the humans for the gods, so no one has ever actually lived there.
- C. The house is used to being left alone because it has been empty for many years.
- D. The house is afraid of everything around it because it just managed to survive the disaster.

Question #4

Instructions for Student

Read the question carefully and select the best answer.

Which of the following inferences is best supported by the following passage Paragraphs 39-42)?

"At ten o'clock the house began to die.

The wind blew. A falling tree bough crashed through the kitchen window. Cleaning solvent, bottled, shattered over the stove. The room was ablaze in an instant! "Fire!" screamed a voice. The house lights flashed, water pumps shot water from the ceilings. But the solvent spread on the linoleum, licking, eating, under the kitchen door, while the voices took it up in chorus: "Fire, fire, fire!"

The house tried to save itself. Doors sprang tightly shut, but the windows were broken by the heat and the wind blew and sucked upon the fire.

The house gave ground as the fire in ten billion angry sparks moved with flaming ease from room to room and then up the stairs. While scurrying water rats squeaked from the walls, pistoled their water, and ran for more. And the wall sprays let down showers of mechanical rain."

- A. The house dies because it gives up hope that the family will ever return.
- B. The house would have burned even if the family had been alive.
- C. The house falls apart because it has not been maintained by humans.
- D. The house would have been saved if the family had been there.

CCSS: CCRA.1

Question #3

Instructions for Student

Read the question carefully and select the best answer.

The reading of Sara Teasdale's poem "There Will Come Soft Rains" adds to the development of the story mainly by _____

- A. Introducing conflict, as it describes nature not caring whether humans are destroyed, despite the house's frantic attempts to go on as if it still has inhabitants.
- B. Developing character, as it reveals that Mrs. McClellan often likes to listen to poetry readings before bed, and her favorite author is Sara Teasdale.
- C. Introducing a resolution, as it describes a way for humans and nature to coexist.
- D. Introducing setting, as it describes the rain and the plum trees and the animals of the place.

CCSS: CCRA.2

Question #5

Instructions for Student

Read the question carefully and select the best answer.

Which of the following inferences about the dog is best supported by the text?

- A. The dog is a random stray.
- B. The dog was the pet of the house's previous inhabitants.
- C. The dog is extremely ill and worries its loving family.
- D. The dog is afraid of the mechanical house.

CCSS:  CCRA.B.1.CCRA.B.3

Question #6

Instructions for Student

Read the question carefully and select the best answer.

Which of the following sentences from the text best support the correct answer to Question 5?

- A. "The dog ran upstairs, hysterically yelping to each door, at last realizing, as the house realized, that only silence was here."
- B. "A dog whined, slithering, on the front porch."
- C. "The front door recognized the dog's voice and opened. The dog once large and fleshy, but now gone to bone and covered with sores, moved in and through the house, tracking mud."
- D. "The dog was gone. In the cellar, the incinerator glowed suddenly and a whirl of sparks leaped up the chimney."

CCSS:  CCRA.B.1

Question #7

Instructions for Student

Read the question carefully and select the best answer.

Which of the following best explains what happened to the family that used to live in the house?

- A. The family moved away and left the crazy mechanical house behind.
- B. The family died in a tragic accident, but the rest of the city is fine.
- C. The family survived the disaster because of their mechanical house.
- D. The family was incinerated in a nuclear blast.

CCSS:  CCRA.B.1.CCRA.B.3.CCRA.B.5

Question #8

Instructions for Student

Read the question carefully and select the best answer.

Which passage from the text best supports the correct answer to Question 7?

- A. "Here the silhouette in paint of a man mowing a lawn. Here, as in a photograph, a woman bent to pick flowers. Still farther over, their images burned on wood in one Titanic instant, a small boy, hands flung into the air, higher up, the image of thrown ball, and opposite him a girl, hand raised to catch a ball which never came down."
- B. "Ten-fifteen. The garden sprinklers whirled up in golden founts, filling the soft morning air with scatterings of brightness. The water pelted winduppanes, running down the charred west side where the house had been burned evenly free of its white paint."
- C. "The fire burst the house and let it slam flat down, puffing out skirts of spark and smoke."
- D. "Ten o'clock. The sun came out from behind the rain. The house stood alone in a city of rubble and ashes. This was the one house left standing. At night the ruined city gave off a radioactive glow which could be seen for miles."

CCSS:  CCRA.B.1

Question #9

Instructions for Student

Arrange events in the story in chronological order.

Available Options (4 of 4)

The house is destroyed in a fire.

The house reads aloud Sara Teasdale's poem "There Will Come Soft Rains" for Mrs. McClellan.

The dog that belonged to the previous inhabitants returns to the house and dies.

The house prepares breakfast for the missing inhabitants.

FIRST	SECOND	THIRD	FOURTH

CCSS: **CCRA.2.CCRA.1.5**

Question #10

Instructions for Student

Match the vocabulary word to its synonym:

Vocabulary Word Options (7 of 7)

manipulated

emerged

tenderly

wavered

sublimed

manifested

rubble

Synonym	Vocabulary Word
swayed	
maneuvered	
came out	
utter	
debris	
genify	
appeared	

CCSS: **CCRA.1.CCRA.1.4**



Vocabulary



Write

Library Prompt #1

In this story, the house plays the role of a character in a place seemingly devoid of human life. Consider the human-like qualities the house possesses. Do you think that the house has always been this way, or that the house changed to exhibit human-like qualities since the disappearance of its inhabitants? What do these qualities reveal about the previous inhabitants? Discuss in an essay of at least 300 words, citing specific details as evidence.

CCSS: [L.8.3.W.2](#)

Library Prompt #2

Consider the year noted by the kitchen ceiling in the beginning of the story, 2026, the year this story was published, 1950, and other contextual details throughout the story that place the house in 1950s America. Based on your understanding of the world of this story, do you believe that this house has been standing alone for over 75 years after an atomic disaster? Or was the house built as a preventative measure for a much later disaster? Choose a side and discuss what it may reveal about how Americans may have felt about atomic disaster at the time of this story's writing. Be sure to cite specific details from the text in support of your response.

CCSS: [L.8.2.W.1](#)

Library Prompt #3

The poem the house "reads" offers a stark contrast in tone from the rest of the story and its setting. What is the effect of reading this poem? Does it change how you see the house and the desperate measures it takes to survive? Or does it make the house's actions seem even more hopeless? Answer in an essay of at least 300 words, citing direct examples from the poem and contrasting them with the rest of the narrative.

CCSS: [L.8.3](#), [L.8.5](#), [W.8.2](#)

Library Prompt #4

COMPARE AND CONTRAST: Think about the structure, including the order of events and conflict, in the novel excerpt from *The Dark Is Rising*, Sara Teasdale's poem, and Ray Bradbury's short story. Explain how the structures compare and contrast, and how the structure relates to the meaning and style of each text. Cite evidence from each text to support your ideas.

CCSS: [L.8.1](#), [L.8.5](#), [W.8.1](#), [W.8.2](#), [W.8.3](#), [W.8.4](#), [W.8.9](#)

Instructions for Student

Complete the chart by dragging and dropping the correct meaning into the third column to match the term in each row and then write a sample sentence in the fourth column.

Definition Options (7 of 7)

what is left after a building is destroyed

having a grand quality or an amazing beauty that inspires awe

to move unsteadily

to appear, seemingly out of nowhere

to treat, work, or operate with the hands

in a gentle way

to become known or apparent

Term	Form	Definition	Sample Sentence
emerge	verb	<input type="checkbox"/>	<input type="text"/>
manifest	verb	<input type="checkbox"/>	<input type="text"/>
manipulate	verb	<input type="checkbox"/>	<input type="text"/>
rubble	noun	<input type="checkbox"/>	<input type="text"/>
sublime	adjective	<input type="checkbox"/>	<input type="text"/>
tenderly	adverb	<input type="checkbox"/>	<input type="text"/>
waver	verb	<input type="checkbox"/>	<input type="text"/>

Name: _____ Class: _____

There Will Come Soft Rains

By Sara Teasdale
1920

Sara Trevor Teasdale (1884-1953) was an American lyric poet born in St. Louis, Missouri. "There Will Come Soft Rains" was published in a collection of poems by Teasdale titled *Fire and Shadow*. When Teasdale wrote the poem in 1920, the devastation of World War I was fresh in the minds of many American writers. As you read, take notes on the setting of the poem and the poet's use of language.



"Liquid Parade" is licensed under CC BY 2.0.

There Will Come Soft Rains by Sara Teasdale is in the public domain.

- [1] There will come soft rains and the smell of the ground,
And swallows circling with their shimmering sound;
- And frogs in the pools singing at night,
And wild plum trees in tremulous white,
- [5] Robins will wear their feathery fire
Whistling their whims on a low fence-wire;
And not one will know of the war, not one
Will care at last when it is done.
- [10] Not one would mind, neither bird nor tree
If mankind perished utterly;
And Spring herself, when she woke at dawn,
Would scarcely know that we were gone.

Text-Dependent Questions

Directions: For the following questions, choose the best answer or respond in complete sentences.

- Which of the following best states what lines 7-10 suggest about the setting of the poem? [RL.3]
 - The poem takes place on a battlefield after a war is won, when peace has finally set in.
 - The poem takes place in a forest, far away from the chaos of people and urban life.
 - The poem takes place in nature, a short time after humankind has destroyed itself from war.
 - The poem takes place on a field in the future, after nuclear warfare has destroyed all living things. [RL.4]
- How does the poet use language (diction, alliteration, figurative language and imagery) to characterize nature throughout the poem? [RL.5]

- How does the poem's form contribute to its meaning? [RL.5]
 - By making each couplet its own separate stanza, the poet is emphasizing the disconnectedness between nature and humanity.
 - By beginning with peaceful descriptions of nature and ending with the revelation that humans have become extinct, the poet is de-emphasizing the importance of humanity.
 - By using consistent meter and rhyme scheme, the poet is creating a whimsical mood that juxtaposes the allusions to war.
 - By beginning the poem with imagery of the setting and ending it with the personification of Spring, the poet is suggesting that war is a part of nature itself. [RL.2]
- PART A: Which of the following best states a theme of the poem? [RL.2]
 - War is pointless and destructive.
 - Time heals all wounds.
 - Humanity is cruel and violent at heart.
 - Nature is indifferent to humanity.

Quiz

Question #1

Instructions for Student

Read the question carefully and select the best answer.

The following stanzas (lines 2-6) mainly show that _____

"There will come soft rains and the smell of the ground,
And swallows circling with their shimmering sound;
And frogs in the pools singing at night,
And wild plum trees in tremulous white.
Robins will wear their feathery fire
Whistling their whims on a low fence-wire;"

- A. The birds, frogs, and trees will be greatly upset by war.
- B. The birds, frogs, and trees die out during war.
- C. The birds, frogs, and trees will go on as usual even during war.
- D. The birds, frogs, and trees do not sing or grow during war.

CCSS:  CCRA.B.2

Question #2

Instructions for Student

Read the question carefully and select the best answer.

Which of the following best explains nature's reaction to human wars, as described in the poem?

- A. Nature cares little about what happens to human beings.
- B. Nature is concerned about being harmed in human wars.
- C. Nature hates humans and is relieved that they extinguish each other.
- D. Nature greatly hopes for growth to replace death.

CCSS:  CCRA.B.1

Question #3

Instructions for Student

Read the question carefully and select the best answer.

Which of the following inferences about Spring is best supported by the text?

- A. Spring cares very much about humanity living peacefully with nature.
- B. Spring cares so little that she sleeps through the war and does not notice humanity's absence when she wakes.
- C. Spring hopes that the birds and trees will heal after war.
- D. Spring hopes that war will end forever.

CCSS:  CCRA.B.1

Question #4

Instructions for Student

Read the question carefully and select the best answer.

Which of the following lines best support the correct answer to Question 3?

- A. "There will come soft rains and the smell of the ground, / And swallows circling with their shimmering sound"
- B. "And not one will know of the war, not one / Will care at last when it is done."
- C. "Robins will wear their feathery fire / Whistling their whims on a low fence-wire"
- D. "And Spring herself, when she woke at dawn, / Would scarcely know that we were gone."

CCSS: [CC.ELA.1](#)

Question #5

Instructions for Student

Match the vocabulary word to its corresponding definition:

Word Options (4 of 4)

- swallows
- whims
- scarcely
- perished

Definition	Word
Almost not at all	
Sudden and unexplained desires or changes of mind	
Migratory swift-flying songbirds	
To have died or been destroyed completely	

CCSS: [CC.ELA.4](#)

Write

Library Prompt #1

Consider the subheading in parentheses, "(War Time)." What imagery throughout the poem supports this subheading? Write a response to indicate images that remind you of what you know of war, and describe how they affect the tone of the poem without direct statements. Be sure to cite specific evidence and inferences from the poem to support your response.

CCSS: [RL.8.5.WB.2](#)

Library Prompt #2

What is the effect of the rhyme scheme on your reading of "There Will Come Soft Rains?" Oftentimes, rhyme used to lighten a poem, but is it doing that here? How does structure affect the tone of the poem? Write a response using evidence and inferences from the text in support of your analysis.

CCSS: [RL.8.5.WB.2](#)

Library Prompt #3

What is your reaction to the final couplet? Closely read the poem again several times, and determine your reading of the final couplet. Present your understanding of it in an essay of at least 300 words, using specific evidence and inferences from the text to support your argument.

CCSS: [RL.8.2.WB.1](#), [RL.8.5.WB.1](#)

Library Prompt #4

PERSONAL RESPONSE: Poet Sara Teasdale writes about the seasonal rebirth of nature during a time of war. What is the theme of this poem? Concentrate on the last two lines of the poem. How do these lines affect how you feel about the poem's overall meaning?

CCSS: [RL.8.1.WB.9.A](#)

**LITERARY TERMS COMMONLY USED IN FICTION
(NOVELS, SHORT STORIES, ETC)**

Review

Literary Device	Definition	Example
Allusion	To call something to mind without discussing it explicitly – an indirect or passing reference.	“When she lost her job, she acted like a Scrooge, and refused to buy anything that wasn’t necessary.” (Allusion made to Scrooge from <i>A Christmas Carol</i> by Charles Dickens)
Antagonist	A character in conflict with the main character or protagonist.	Dracula The Wicked Witch of the West Mr. Hyde
Conflict	The central problem or issue to be resolved in a plot, involving the main character struggling against other character(s) or obstacle(s).	Person Vs Person Person Vs Self Person Vs Society Person Vs Nature
Character (Dynamic)	A character who changes, especially one who comes to a major realization	Scrooge in <i>A Christmas Carol</i> (changes from cheap to generous)
Character (Flat)	A one-dimensional character who has only a few, easily defined traits.	Step-mother in <i>Cinderella</i> (only character trait – evil)
Character (Round)	A multi-faceted character, especially one who is capable of choosing right or wrong.	Harry Potter is a round character because he encounters great conflict and emotional turmoil. Through this, we can relate to him because he is a fully developed character.
Character (Static)	A character that undergoes no change.	Step-mother in <i>Cinderella</i> (mean in the beginning, mean in the end)
Climax	The high point of tension in the plot, when the outcome is decided.	The climax of <i>Cinderella</i> occurs when the prince puts the shoe on her foot and it fits.
Exposition	The part of the plot diagram where the characters, setting, mood, and atmosphere are introduced (usually at the beginning)	The exposition of <i>Cinderella</i> occurs in the beginning when we learn about the characters and setting.
Falling Action	The part of the plot when things begin to turn around. Usually comes right after the climax	The falling action of <i>Cinderella</i> occurs after the shoe fits and she and the Prince are together.
Foreshadowing	A hint that is fully understood only in retrospect after the reader discovers more information later in the plot.	In the opening of <i>The Wizard of Oz</i> , set in Kansas, the transformation of Miss Gulch into a witch on a broomstick foreshadows her reappearance as Dorothy's enemy in Oz.
Flashback	A flashback is a scene that returns to events in the past.	She smelled of lemons, just as Jodie used to. Lemons had been Jodie's answer to everything. On their first date they drank an entire pitcher of lemonade, the pitcher sweating between them on the white wicker table.

Initial Incident	The initial incident is an event of the plot that starts the conflict(s).	The initial incident of <i>Cinderella</i> occurs when the step-mother will not allow her to go to the Ball.
Irony	The use of words to convey the opposite of their literal meaning. A statement or situation where the meaning is contradicted by appearance or presentation of the idea.	(see 3 examples below)
Irony (Verbal)	Saying something but meaning the opposite	"Well, I see we dressed up today" said to someone looking obviously disheveled.
Irony (Situational)	When the audience expects something to happen but the opposite occurs	A man takes a step aside in order to avoid getting sprinkled by a wet dog, and falls into a swimming pool
Irony (Dramatic)	When the reader is aware of something that the characters are not.	In horror movies, when you know the murderer is behind the character, but they do not.
Mood	The emotional atmosphere of the story – the reader usually emotionally responds to the mood.	"It was a dark and stormy night..." establishes a dangerous and foreboding mood.
Narrator	If you are the narrator, you tell the story from your own point of view.	(see below for narrative points of view)
Point of View (First Person)	The person speaking is involved in the story. Uses "I"	<u>I</u> held <u>my</u> hand out, waiting for my mother.
Point of View (3rd Person)	The narrator is not a character. Uses "he, she, they"	<u>He</u> moved carefully not to disturb those who were sleeping.
Point of View (Omniscient)	An omniscient narrator is similar to a third person narrator, but they can see all (into character's thoughts, feelings etc)	John had been <u>feeling</u> rather delicate lately, a result of his father's abandonment.
Protagonist	The main character of the story. Usually seen as the "good guy"	The protagonist of <i>Harry Potter</i> is (you guessed it) Harry Potter!
Resolution	The part of the plot where the conflict has been resolved (usually at the end)	The resolution of <i>Cinderella</i> occurs when they live "Happily Ever After"
Rising Action	The part of the plot that includes the events that develop the clues and the actions (building to the climax)	The rising action of <i>Cinderella</i> includes all of the events up until the shoe fits.
Setting	The time and place of the story.	The setting of <i>A Christmas Carol</i> is London England in the 1840's.
Theme	The main idea of the story. It is usually something that connects the story to the real world. It also often leads to a discussion or debate.	Possible themes could be friendship, love, courage, loyalty, survival etc.

Study the definitions of the words. Then do the exercises that follow.

audacious

ô dā' shās

adj. 1. Willing to take risks; daring.

The students came up with an **audacious** plan to build a neighborhood park where there was currently a garbage dump.

2. Showing disrespect or a lack of courtesy.

Our teacher warned us that the **audacious** remarks were not appropriate in a civil debate.

audacity *n.* (ô das' ə tē) Willingness to take risks by showing excessive boldness.

Olly was the only boy with the **audacity** to ask for more food.



.....
Talk to your partner about situations that require audacity.

confiscate

kän' fi skät

v. To seize, by force if necessary; to take possession of.

Ms. Martinez **confiscated** my phone and told me I could have it back when class was over.

conscientious

kän shē en' shās

adj. 1. Thorough; careful.

Because of our **conscientious** preparations, the science fair was enjoyable and informative for everyone.

2. Honest; principled.

Several of the students made a **conscientious** effort to combat hunger by working with the food bank.



.....
Discuss with your partner what a conscientious person would do if he or she found a wallet on the sidewalk.

depict

dē pikt

v. To give a picture of; to describe.

These seafaring novels **depict** life aboard a navy sailing ship with great accuracy.



.....
Tell your partner how you would depict your school to someone who has never been there.

embark

em bärk'

v. 1. To go on board a ship or airplane at the start of a voyage.

Around nine o'clock, we **embarked** for a day of whale watching.

2. To start out; to begin.

Lewis and Clark **embarked** on their famous expedition across America in 1804.

inkling

ink' lin

n. A slight suspicion; a vague idea.

As she opened the door, Shala had no **inkling** that her friends were hidden in the darkened room, waiting to shout, "Surprise!"

lackadaisical
lak ə dā' zī kəl

adj. Showing little spirit or enthusiasm.

When the students came after school to work on their reports, the librarian was quite **lackadaisical** about enforcing the no-talking rule.

mutiny
myōōt' n ē

n. Deliberate refusal to obey orders given by those in command, especially by sailors.

The 1917 **mutiny** by French soldiers could have caused France to lose the war.

v. To rebel openly against a commander.

We think the students might **mutiny** if the cafeteria does not start serving better food.



.....
Chat with your partner about whether it is better to mutiny or to try to reach a peaceful compromise when faced with unreasonable rules.

pilfer
pil' fər

v. To steal repeatedly small amounts or things that are of little value.

Pip **pilfered** bread and other bits of food from the kitchen to feed the injured mouse he was caring for.

profusion
prō fyōō' zhən

n. A plentiful supply; a great or generous amount.

Daffodils grew in **profusion** along the river bank.

profuse *adj.* Given or occurring in generous amounts; abundant.

Jerry's **profuse** apologies convinced me he was sorry he had hurt my feelings.



.....
Share with your partner something you can eat profuse amounts of.

prudent
prōōd' nt

adj. Very careful; showing judgment and wisdom.

Lost in the forest, Aadhya argued it was more **prudent** to wait until morning to find the trail than to continue wandering in the dark.

prudence *n.* The avoidance of risk; carefulness in what one says or does.

Although the knight was shaking with anger, he exercised **prudence**, saying nothing to the king who had insulted him.

rankle
ranj' kəl

v. To cause continuing anger or irritation.

The unfair criticism still **rankled** Deena, even though her friend later apologized.

rebuke
rē byōōk'

v. To criticize strongly; to reprimand.

Mrs. Meyer **rebuked** Ben for his insulting remark in class.

n. A sharp criticism.

My mom's **rebuke** seemed to include every mistake I had made since I was born.



.....
Talk to your partner about positive ways you might respond to a rebuke.

serene *adj.* Calm and untroubled; peaceful.
sə rēn' The nurse's **serene** manner comforted the patients.

serenity *n.* (sə ren' ə tē) A calm and untroubled state.
My grandmother's constant **serenity** has a calming effect during times of crisis.



.....
Discuss with your partner ways you can find serenity in daily life.

slovenly *adj.* Untidy; carelessly done.
sləv' ən lē My mother would not let me leave for the field trip until I cleaned my **slovenly** bedroom.

5A

Finding Meanings

Choose two phrases to form a sentence that correctly uses a word from Word List 5. Then write the sentence.

1. (a) one that is peaceful. (c) A lackadaisical manner is
(b) one that changes frequently. (d) A serene manner is

2. (a) To rankle someone is to (c) warn that person.
(b) To rebuke someone is to (d) criticize that person.

3. (a) a feeling of mistrust. (c) Audacity is
(b) Prudence is (d) excessive boldness.

4. (a) to describe it. (c) To confiscate something is
(b) to remember it. (d) To depict something is

5. (a) imitate another's actions. (c) To embark is to
 (b) set out on a voyage. (d) To mutiny is to
-
6. (a) avoids unnecessary risks. (c) A slovenly plan is one that
 (b) A prudent plan is one that (d) has several parts.
-
7. (a) To pilfer something is to (c) take it by force.
 (b) To confiscate something is to (d) exchange it for something else.
-
8. (a) A conscientious person is (c) defies authority.
 one who (d) does careful work.
 (b) A lackadaisical person is one who
-
9. (a) to rebel against authority. (c) to make a sincere effort.
 (b) To mutiny is (d) To pilfer is
-
10. (a) they are numerous. (c) If the illustrations are profuse,
 (b) If the illustrations are slovenly, (d) they are elegant.
-

audacious
confiscate
conscientious
depict
embark
inkling
lackadaisical
mutiny
pilfer
profusion
prudent
rankle
rebuke
serene
slovenly

Just the Right Word

Replace each phrase in bold with a single word (or form of the word) from the word list.

1. Spencer's parents wished he were not so **willing to take risks** as they watched him climb the rocks.
2. My sister is always accusing me of being very **untidy and careless** in my personal habits.
3. Poison ivy grows in **very large amounts** at the southern end of the island.
4. When in the ocean, surfers are expected to act with **care to avoid anything that might be too risky**.
5. **An act of defiance against one's superior** is a serious action.
6. Unlike many early colonists, Roger Williams, acting in a **principled and honest** manner, paid the Narragansetts for the land he wanted to occupy.
7. The woman had the first **faint suggestion** she had won the election when reporters arrived.
8. I hope you are not a person for whom an imagined slight **continues to irritate** just as much as a real one.
9. The group's dancing was so **lacking in enthusiasm** that they looked bored.
10. Before mountaineers can **start out** on an expedition, they need supplies.

Applying Meanings

Circle the letter or letters next to each correct answer. There may be more than one correct answer.

- Which of the following indicates a **slovenly** person?
 - polished shoes
 - long hair
 - dirty fingernails
 - patched jeans
- Which of the following might deserve a **rebuke**?
 - breaking a rule
 - showing negligence
 - saving a child's life
 - getting an A on a test
- Which of the following might **rankle**?
 - a deliberate insult
 - a false accusation
 - an unexpected rebuff
 - an affable remark
- Which of the following could be **confiscated**?
 - a warm smile
 - a sum of money
 - a helpful attitude
 - a firm promise
- Which of the following might a **lackadaisical** student do?
 - ask for extra homework
 - get straight A's
 - pay close attention
 - daydream in class
- Which of the following would a **conscientious** bike rider do?
 - signal before making a turn
 - stay alert
 - wear a helmet
 - ignore stop signs
- Which of the following suggests **serenity**?
 - a basketball game
 - a sunset
 - a sleeping baby
 - a carnival ride
- Which of the following can a person **pilfer**?
 - a diamond ring
 - a car
 - a candy bar
 - a sneeze

audacious
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rankle
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serene
slovenly

Word Study: Word Parts

Complete each sentence. Each answer is a word from this or an earlier lesson.

1. The prefix *re-* means "back." It combines with the Latin verb *salire* (to leap) to form the English word _____ (able to spring back).
2. The prefix *re-* also means "again." It combines with the Latin verb *currere* (to run) to form the English word _____ (to happen again).
3. The prefix *de-* means "remove." It combines with the Greek word *hydr* (water) to form the English word _____ (to remove water from).
4. The prefix *an-* means "without." It combines with the Greek word *onuma* (name) to form the English word _____ (of an unknown name).
5. The Greek word *pseudēs* means "false." Combined with the Greek word for "name," it forms the English word _____ (a fictitious or pen name).
6. Two Greek words, *anthos*, meaning "flower," and *legein*, meaning "to gather," combine to form the English word _____ (a collection of various writings).
7. The prefix *in-* means "in" or "into." It changes to *im-* when it combines with the Latin verb *pellare* (to drive) to form the English word _____ (to drive forward).



Vocabulary in Context

Read the passage.



The *Bounty*, Part One

When the captain of His Majesty's ship *Bounty* spoke to the men on watch a little after midnight, everything seemed normal. Three weeks before, on April 4, 1789, Captain Bligh and his crew had **embarked** for the West Indies from the tropical South Pacific island of Tahiti. For six months, they had collected breadfruit plants, which grew in **profusion** on Tahiti. The purpose of the voyage was to transport over a thousand of these plants, already carefully stowed on board, to the West Indies. They were to be grown as a food crop on the large plantations there.

Captain Bligh probably should have realized that not all was as **serene** as it seemed. He knew that his men had been loath to leave the pleasant island life to return to the more rigid structure of life aboard ship. He had, in fact, been dissatisfied with the **slovenly** habits they had developed while the *Bounty* had lain at anchor. Some of the crew failed to care properly for the sails. Others had **pilfered** from the ship because no one was keeping proper watches.

Furthermore, Captain Bligh seemed to have lost confidence in his chief mate, Fletcher Christian. It had been Christian's **lackadaisical** attitude, Bligh believed, that had resulted in the sailors' neglecting their duties on Tahiti. Bligh had **rebuked** Christian for failing to supervise the men properly. If this had **rankled** the chief mate, Bligh had not perceived any change in him when the two had dined together.

Despite these annoyances, Bligh's mood was calm when he returned to his cabin. He had no **inkling** of what was about to happen as, rocked by the gentle motion of the ship, he fell asleep. Had he been **prudent**, he might have posted a guard outside his cabin. As it was, its door was not even locked. Shortly before dawn, the captain was awakened abruptly. Fletcher Christian, accompanied by several crew members, burst in and informed him that they had taken over the ship. They had **confiscated** all the weapons on board. They had also locked up the eighteen crew members who remained loyal to the captain.

Bligh warned those who held him prisoner that for this **audacious** act they would all be hanged. His warning, however, had no effect. Later that morning, he and the loyal crew members were pushed into an open boat. They were permitted to take some weapons with them and were given a small quantity of

- audacious
- confiscate
- conscientious
- depict
- embark
- inkling
- lackadaisical
- mutiny
- pilfer
- profusion
- prudent
- rankle
- rebuke
- serene
- slovenly

food and water. Bligh watched helplessly as Christian and the remaining crew members on board sailed off in the *Bounty*. He and the other passengers were left in the tiny boat to their fate in the middle of the vast ocean.

Three movies have been made of the **mutiny** that took place on the *Bounty* on the morning of April 28, 1789. All three **depict** Captain Bligh as a cruel man who treated his crew badly and was himself responsible for what happened. However, by using information in court documents, letters, and diaries written by people who participated in the events, several historians argue that Bligh was a **conscientious** naval officer. He was no stricter than other sea captains of the time. While he had ordered several men flogged twelve or even twenty-four lashes for being disobedient, this was the usual punishment at that time in the British navy for quite minor offenses. To this day, there is no unanimous explanation for this event that changed the lives of these men forever.

► Answer each of the following questions with a sentence. If a question does not contain a vocabulary word from the lesson's word list, use one in your answer. Use each word only once.

1. Why do you think there was such a serious punishment for **mutiny**?

2. Why would it be inaccurate to describe Fletcher Christian as a **conscientious** first mate?

3. What are two examples from the passage that illustrate the crew's **slovenly** performance?

4. Why was Christian **rebuked** for his supervision of the men on Tahiti?

5. What is the meaning of **embarked** as it is used in the passage?

6. What kinds of things do you think the men could have **pilfered** from the ship?

7. Why was Tahiti a good place to gather breadfruit plants?

8. What was it about Christian that made Bligh lose confidence in him?

9. Why would it be inaccurate to say that the men who took over the ship were acting in a **prudent** manner?

10. Was Bligh **rankled** by his men's behavior as he went to sleep on April 27, 1789? Explain.

11. Why is it likely that Captain Bligh did not feel **serene** as he watched the *Bounty* sail away?

audacious

confiscate

conscientious

depict

embark

inkling

lackadaisical

mutiny

pilfer

profusion

prudent

rankle

rebuke

serene

slovenly

12. How did Fletcher Christian make sure that none of the crew would resist his takeover?

13. How do we know that no one warned the captain of possible trouble?

14. What is the meaning of **audacious** as it is used in the passage?

15. Why do you think Captain Bligh is **depicted** as cruel in the movies about this event?

Fun & Fascinating **FACTS**

.....

- The word **lackadaisical** has an interesting history. In the eighteenth century, a person might have expressed regret for a failure to act properly by saying, "Alack the day." Translated into modern English, it means, "I'm sorry that day happened." The expression shortened to "lackaday," and a person who used it frequently was described as *lackadaisical*.

Lax is a separate word, meaning "not strict or demanding." (Accidents occurred because of the *lax*

safety rules at the plant.) Don't substitute *laxadaisical*, which is not in any dictionary, for *lackadaisical*.

.....

- In early Roman times, tax collectors working for the state put the money they collected in baskets woven from rushes. The Latin name for this basket was *fiscus*. *Fiscal*, which means "having to do with money collected and spent by the state," is formed from *fiscus*. So is the word **confiscate**. The state has the power to seize, by force if necessary, money owed to it by its citizens.

Answers
for vocabulary
practice.

2. He did not carry out his responsibilities as a person in command.
3. While they were docked at Tahiti, the crew did not take proper care of the sails; they did not maintain regular watches on the ship.
4. Christian had failed to supervise the men properly, which had resulted in the sailors neglecting their duties on Tahiti.
5. Embarked means "started out."
6. Sample response: The crew could have taken candles, food, rope, and other small things of value.
7. Breadfruit plants grew in profusion there.
8. Bligh lost confidence in Christian because of his lackadaisical attitude.
9. By taking over the ship, the men were putting their lives at risk and the lives of all others aboard the vessel.
10. No. He was calm because he thought everything was going fine.
11. He was probably worried about his own survival.
12. He confiscated all the weapons on board and locked up all crew members loyal to the captain.
13. The passage says that Bligh had no inkling of trouble.
14. Audacious means "daring."
15. Sample response: He may be shown as cruel because the disciplinary tactics of his time seem harsh by modern standards.

Lesson 5

5A Finding Meanings

p. 53

- | | | |
|--------|--------|---------|
| 1. d—a | 5. c—b | 8. a—d |
| 2. b—d | 6. b—a | 9. b—a |
| 3. c—d | 7. b—c | 10. c—a |
| 4. d—a | | |

5B Just the Right Word

p. 55

- | | |
|--------------|------------------|
| 1. audacious | 6. conscientious |
| 2. slovenly | 7. inkling |
| 3. profusion | 8. rankles |
| 4. prudence | 9. lackadaisical |
| 5. Mutiny | 10. embark |

5C Applying Meanings

p. 56

- | | |
|------------|------------|
| 1. c | 5. d |
| 2. a, b | 6. a, b, c |
| 3. a, b, c | 7. b, c |
| 4. b | 8. c |

5D Word Study: Word Parts

p. 57

- | | |
|--------------|--------------|
| 1. resilient | 5. pseudonym |
| 2. recur | 6. anthology |
| 3. dehydrate | 7. impel |
| 4. anonymous | |

5E Vocabulary in Context

p. 58

(Possible answers; students' sentences may vary.)

1. Sample response: Such a crime would put many peoples' lives at risk as well as threaten the loss of government property in the form of ships and cargoes.

9.6

Surface Area and Volume of Spheres

Goal

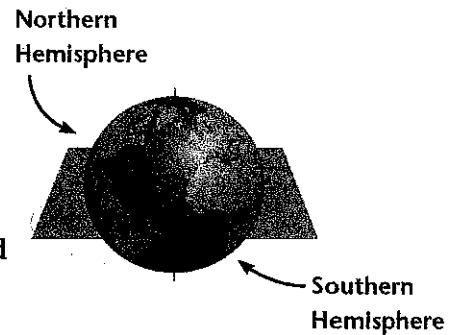
Find surface areas and volumes of spheres.

Key Words

- sphere
- hemisphere

A globe is an example of a *sphere*. A **sphere** is the set of all points in space that are the same distance from a point, the center of the sphere.

A geometric plane passing through the center of a sphere divides it into two **hemispheres**. The globe is divided into the Northern Hemisphere and the Southern Hemisphere.

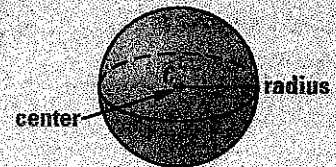


The globe is divided into two hemispheres.

SURFACE AREA OF A SPHERE

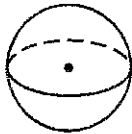
Words Surface area = $4\pi(\text{radius})^2$

Symbols $S = 4\pi r^2$



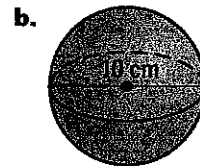
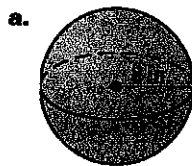
Visualize It!

To sketch a sphere, draw a circle and its center. Then draw an oval to give the sphere dimension.



EXAMPLE 1 Find the Surface Area of a Sphere

Find the surface area of the sphere. Round your answer to the nearest whole number.



Solution

- a. The radius is 8 inches, so $r = 8$.

$$\begin{aligned} S &= 4\pi r^2 \\ &= 4 \cdot \pi \cdot 8^2 \\ &\approx 804 \end{aligned}$$

The surface area is about 804 square inches.

- b. The diameter is 10 cm, so the radius is $\frac{10}{2} = 5$. So, $r = 5$.

$$\begin{aligned} S &= 4\pi r^2 \\ &= 4 \cdot \pi \cdot 5^2 \\ &\approx 314 \end{aligned}$$

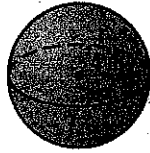
The surface area is about 314 square centimeters.

Checkpoint

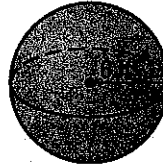
Find the Surface Area of a Sphere

Find the surface area of the sphere. Round your answer to the nearest whole number.

1.



2.



3.



VOLUME OF A SPHERE

Words Volume = $\frac{4}{3}\pi(\text{radius})^3$

Symbols $V = \frac{4}{3}\pi r^3$



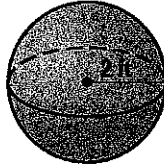
Student Help
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MORE EXAMPLES
More examples at
classzone.com

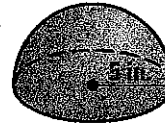
EXAMPLE 2 Find the Volume of a Sphere

Find the volume of the sphere or hemisphere. Round your answer to the nearest whole number.

a.



b.



Solution

$$\text{a. } V = \frac{4}{3}\pi r^3$$

Write the formula for volume of a sphere.

$$= \frac{4}{3} \cdot \pi \cdot 2^3$$

Substitute 2 for r .

$$= \frac{32}{3}\pi$$

Simplify. $2^3 = 2 \cdot 2 \cdot 2 = 8$

$$\approx 34$$

Multiply.

ANSWER ▶ The volume is about 34 cubic feet.

b. A hemisphere has half the volume of a sphere.

$$V = \frac{1}{2} \left(\frac{4}{3}\pi r^3 \right)$$

Write the formula for $\frac{1}{2}$ the volume of a sphere.

$$= \frac{1}{2} \cdot \left(\frac{4}{3} \cdot \pi \cdot 5^3 \right)$$

Substitute 5 for r .

$$= \frac{250}{3}\pi$$

Simplify. $5^3 = 5 \cdot 5 \cdot 5 = 125$

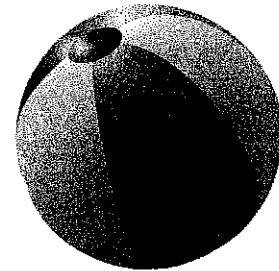
$$\approx 262$$

Multiply.

ANSWER ▶ The volume is about 262 cubic inches.

EXAMPLE 3 Find the Volume of a Sphere

Estimate the volume of air in a beach ball that has a 12 inch diameter. Round your answer to the nearest whole number.



Solution

$$V = \frac{4}{3}\pi r^3 \quad \text{Write volume formula.}$$

$$= \frac{4}{3} \cdot \pi \cdot 6^3 \quad \text{Substitute } \frac{12}{2} = 6 \text{ for } r.$$

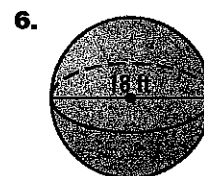
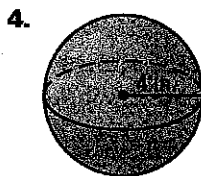
$$= 288\pi \quad \text{Simplify.}$$

$$\approx 905 \quad \text{Multiply.}$$

ANSWER ▶ The volume of air in the ball is about 905 cubic inches.

Checkpoint 4 Find the Volume of a Sphere

Find the volume to the nearest whole number.



9.6 Exercises

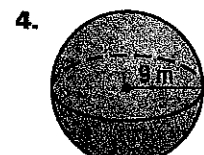
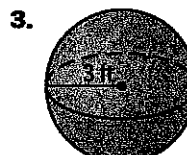
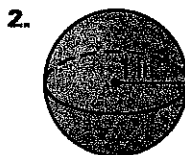
Guided Practice

Vocabulary Check

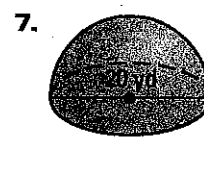
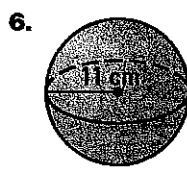
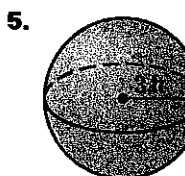
1. Explain the difference between a *sphere* and a *hemisphere*.

Skill Check

Find the surface area to the nearest whole number.



Find the volume to the nearest whole number.

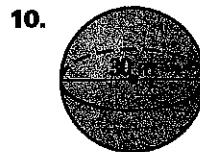
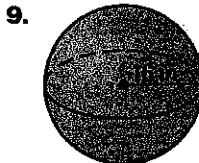


Practice and Applications

Extra Practice

See p. 692.

Find Surface Area of a Sphere Find the surface area of the sphere. Round your answer to the nearest whole number.

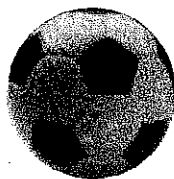


11. Error Analysis Bob is asked to find the surface area of a sphere with a diameter of 10 millimeters. Explain and correct his error(s).

$$\begin{aligned}
 V &= \pi r^2 \\
 &= \pi(10)^2 \\
 &= 100\pi \\
 &\approx 314 \text{ mm}^3
 \end{aligned}$$

Sports In Exercises 12–17, estimate the surface area of the ball. Round your answer to the nearest whole number.

12. Soccer ball



$r = 4.3 \text{ in.}$

13. Tennis ball



$r = 3.3 \text{ cm}$

14. Bowling ball



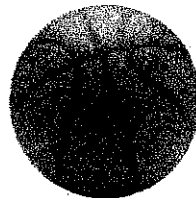
$r = 10.9 \text{ cm}$

15. Golf ball



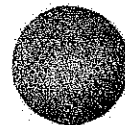
$d = 1.7 \text{ in.}$

16. Basketball



$d = 9.5 \text{ in.}$

17. Softball



$d = 9.6 \text{ cm}$

Homework Help

Example 1: Exs. 8–17

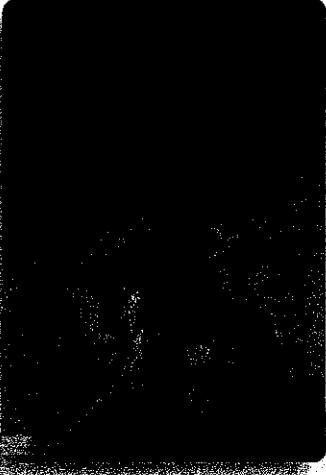
Example 2: Exs. 23–28,
37–39

Example 3: Exs. 23–28,
37–39

18. You be the Judge Julie thinks that if you double the radius of the sphere shown at the right, the surface area will double. Is she right? Explain your reasoning.



Link to Astronomy

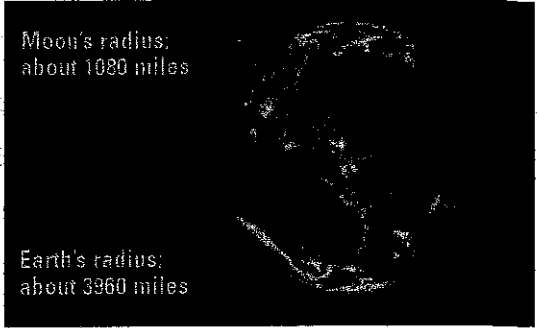


ASTRONOMERS study the planets, stars, and solar system. Powerful telescopes are used to collect information about astronomical objects.

Application Links
CLASSZONE.COM

Astronomy In Exercises 19–22, use the information about Earth and its moon given in the photo.

19. Find the surface area of Earth.
20. Find the surface area of Earth's moon.
21. Compare the surface areas of Earth and its moon.
22. About 70% of Earth's surface is water. How many square miles of water are on Earth's surface?



Finding Volume of a Sphere Find the volume of the sphere. Round your answer to the nearest whole number.

- 23.
- 24.
- 25.
- 26.
- 27.
- 28.

Technology Use formulas to create a spreadsheet like the one shown. Then answer Exercises 29–32.

Comparing Spheres			
	A	B	C
1	Radius, r	Surface area, $4\pi r^2$	Surface area of new sphere
2	3	113.1	1
3	6	452.4	4
4	9	?	?
5	12	?	?

29. How many times greater is the surface area of a sphere if the radius is doubled? tripled? quadrupled?
30. Explain why the surface area changes by a greater amount than the radius.
31. How many times greater do you think the volume of a sphere will be if the radius is doubled? tripled?
32. Create a spreadsheet for the volume of a sphere. Then answer Exercises 29 and 30 for the volume of a sphere.

Student Help

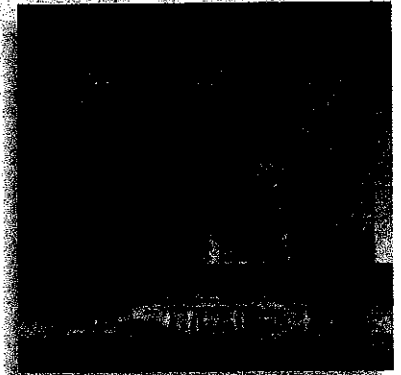
LOOK BACK

See pp. 470–471 for more information about The Rose Center for Earth and Space.

Spheres in Architecture In Exercises 33–36, refer to the information below about The Rose Center for Earth and Space at New York City's American Museum of Natural History.

The sphere has a diameter of 87 feet. The glass cube surrounding the sphere is 95 feet long on each edge.

33. Find the surface area of the sphere.
34. Find the volume of the sphere.
35. Find the volume of the glass cube.
36. Find the approximate amount of glass used to make the cube. (*Hint:* Do not include the ground or roof in your calculations.)

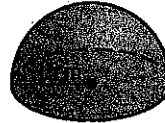


Finding Volume of a Hemisphere Find the volume of the hemisphere. Round your answer to the nearest whole number.

37.



38.

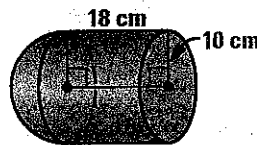


39.

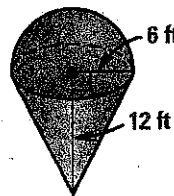


Composite Solids Find the volume of the solid. Round your answer to the nearest whole number.

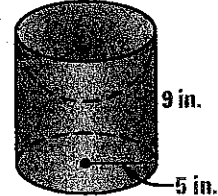
40.



41.



42.



Student Help

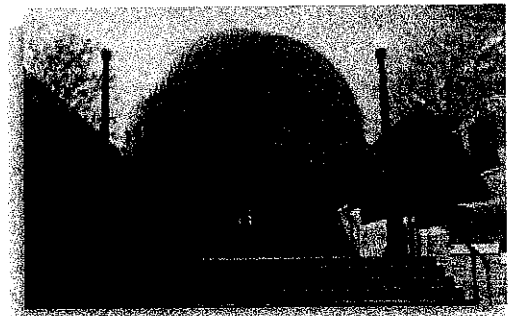
CLASSZONE.COM

HOMEWORK HELP

Extra help with problem solving in Exs. 43–45 is at classzone.com

Architecture The entrance to the Civil Rights Institute in Birmingham, Alabama, includes a hemisphere that has a radius of 25.3 feet.

43. Find the volume of the hemisphere.
44. Find the surface area of the hemisphere, not including its base.
45. The walls of the hemisphere are 1.3 feet thick. So, the rounded surface inside the building is a hemisphere with a radius of 24 feet. Find its surface area, not including its base.



Standardized Test Practice

46. **Multiple Choice** What is the approximate surface area of the sphere shown?

- (A) 3217 in.^2 (B) 4287 in.^2
 (C) $12,861 \text{ in.}^2$ (D) $17,149 \text{ in.}^2$



Mixed Review

Surface Area Find the surface area of the solid. If necessary, round your answer to the nearest whole number. (Lessons 9.2, 9.3)

47. A cone has a height of 12 meters and a base radius of 3 meters.
48. A pyramid has a slant height of 3 feet and a square base that measures 4 feet on a side.
49. A cylinder has a radius of 9 centimeters and a height of 9 centimeters.

Simplifying Radicals Evaluate. Give the exact value if possible. Otherwise, approximate to the nearest tenth. (Skills Review, p. 668)

50. $\sqrt{6}$ 51. $\sqrt{18}$ 52. $\sqrt{77}$ 53. $\sqrt{400}$
54. $\sqrt{256}$ 55. $\sqrt{99}$ 56. $\sqrt{40}$ 57. $\sqrt{120}$

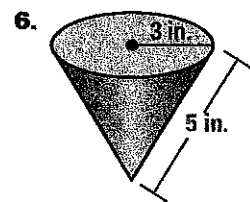
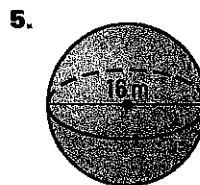
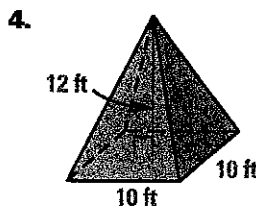
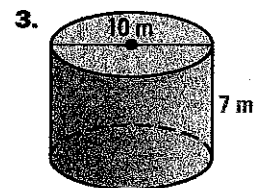
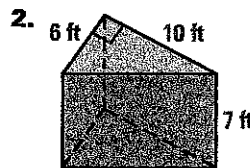
Algebra Skills

Using Formulas Find the missing length using the given information. (Skills Review, p. 674)

58. A rectangle is 6 feet wide and 11 feet long. Find the perimeter.
59. A square has an area of 100 square inches. Find the perimeter.
60. Find the width of a rectangle with a length of 8 meters and an area of 40 square meters.
61. The perimeter of a square is 44 yards. Find the side length.

Quiz 2

Find the volume of the solid. If necessary, round your answer to the nearest whole number. (Lessons 9.4, 9.5, 9.6)



7. Sketch a cylinder with a radius of 4 inches and a height of 4 inches. Then find its volume. (Lesson 9.4)
8. Sketch a sphere with a radius of 9 centimeters. Then find its surface area. (Lesson 9.6)

1. The students in a seaside school are to have extra swimming lessons if they cannot swim. The table below gives information about the students in grades 7, 8 and 9.

	Can swim	Cannot swim	Total
Grade 7	120	60	
Grade 8	168	11	
Grade 9	172	3	
Total			

	Can swim	Cannot swim	Total
Grade 7			
Grade 8			
Grade 9			
Total			

- Complete the table
- How many students need swimming lessons?
- How many students are there in 8th grade?
- How many of the 7th grade students cannot swim?
- How many students in grades 7 and 8 can swim?
- How many students are there altogether in grades 7, 8, and 9?
- Create a two-way relative frequency table for the above data.
- What is the relative frequency of students who are in 8th grade and cannot swim?
- What percentage of 9th grade students can swim?
- What percentage of students cannot swim?
- What percentage of students are 9th graders?

2. A principal of a school with 484 students collected information about how many of the students wear glasses.

	Always wears glasses	Sometimes wears glasses	Never wears glasses	Total
Boys	40		161	
Girls	36	55	144	
Total				

- Complete the table
- How many boys sometimes wear glasses?
- How many students wear glasses some of the time?
- How many students never wear glasses?
- Are there more boys or girls in the school?
- Create a two-way relative frequency table for the above data.
- What is the relative frequency of boys who sometimes wear glasses?
- What percentage of girls never wear glasses?
- What percentage of students are boys?
- What percentage of students always wear glasses?

3. Draw your own two-way table for the given information to answer the question.

In a class of 32 students, there were 8 girls who played basketball and 5 boys who did not.

- a. How many boys played basketball if there were 15 girls in the class?**
- b. Create a two-way relative frequency table for the data.**

- c. What is the relative frequency of girls who played did not play basketball?**
- d. What percentage of boys played basketball?**
- e. What percentage of students played basketball?**
- f. What percentage of students are girls?**

1. Felipe surveyed students at his school. He found that 78 students own a cell phone and 57 of those students own an MP3 player. There are 13 students that do not own a cell phone, but own an MP3 player. Nine students do not own either device.

a. Construct a two-way table summarizing the data.

b. Construct a two-way relative frequency table for the data.

2. There are 150 children at summer camp and 71 signed up for swimming. There were a total of 62 children that signed up for canoeing and 28 of them also signed up for swimming.

a. Construct a two-way table summarizing the data.

b. Construct a two-way relative frequency table for the data.

3. The two-way table shows the number of students that do or do not do chores at home and whether they receive an allowance or not.

	13	3
	5	4

- How many total students do chores?
- What is the relative frequency of students that do chores and get an allowance to the number of students that do chores? Round to the nearest hundredth if necessary.
- What is the relative frequency of students that do not do chores nor get an allowance to the total number of students? Round to the nearest hundredth if necessary.

4. The two-way table below shows the number of students with each hair color and eye color. Create a relative frequency table out to the side of the table.

	Black	Brown	Red	Blond	Total
Brown	7	12	3	1	23
Blue	2	8	2	9	21
Hazel	2	5	1	1	9
Green	1	3	1	2	7
Total	12	28	7	13	60

Which is greater: the percentage of the brown-haired students with blue eyes or the percentage of the red-haired students with brown eyes?

- 80 students each study one Science. The table shows some information about these students
 - Complete the table

	Biology	Chemistry	Physics	Total
Female	18			47
Male			19	
Total		21	33	80

- What is the probability that the student studies Physics?
- What is the probability that the student is male and does not study biology?
- What is the probability that the student is female and studies Chemistry?
- What is the probability that the student is not female?
- What is the probability that the student does not study Biology?

Words/Concepts TO KNOW!!! – 8th Grade Science

- Alleles** – variations of a trait (represented using letters)
 - **Recessive** – masked/covered up (lowercase letters)
 - **Dominant** – masks/covers up (capital letters)
- Meiosis** – 4 daughter cells, haploid, 2 cell divisions *crossing over, independent assortment
- Mitosis** – 2 daughter cells, diploid, 1 cell division
- Genotype** – allele combination (genetic makeup) **determines phenotype)
 - **Homozygous** – same allele (AA or aa)
 - **Heterozygous** – different alleles (Aa)
- Sexual reproduction** – Meiosis, 2 parents, egg and sperm (gametes), genetic variety, fertilization
- Asexual reproduction** – Mitosis, 1 parent, genetically different, Exs: Budding, Binary fission
- Chromosome** – 23 pairs, 46 total, made of DNA, in the nucleus
- DNA** – double helix, makes up chromosomes, made of genes
- Chromosome → DNA → Gene → Nucleotide (A, T, C, or G)
- Karyotype** – shows structure of chromosome pairs, XX = female, XY = male
- Stages of Mitosis** – Interphase → PMAT → Cytokinesis
- Interphase** – G1 = growth, S = DNA REPLICATED, G2 = growth
Longest phase of the cell cycle
- Prophase** – DNA coils to make chromosome, nucleus breaks down, centrioles move to poles
- Metaphase** – chromosomes line up at the equator of the cell
- Anaphase** – spindle fibers attach to the centromeres, sister chromatids pulled apart
- Telophase** – chromosomes uncoil, nucleus reforms
- Cytokinesis** – entire cell (cytoplasm) divides
- Stages of Meiosis** – Interphase → PMAT I → Cytokinesis → PMAT II → Cytokinesis
- Crossing Over** – when homologous chromosomes swap/exchange segments; increases genetic variety; occurs during Prophase I
- Environmental trait** – influenced by your surroundings
- Inherited trait** – influenced/determined by your genes
- Protein synthesis** – Central Dogma of Molecular Biology, proteins built in the ribosome, made of amino acids, determined by GENES (nucleotide sequence)
- Advantages of Reproduction**
 - Sexual – genetic diversity allows for species survival
 - Asexual – short time, lots of offspring, only 1 parent
- Disadvantages of Reproduction**
 - Sexual – takes a long time, few offspring
 - Doesn't allow for genetic diversity
- Genetic engineering** – combines DNA from different organisms, creates GMOs, uses vectors and bacterial plasmids (DNA)
- Selective breeding** – select organisms to BREED based on desired traits
- Advantages of SB and GE**
 - GE – improves crops, gene therapy to cure disease, treat disease
 - SB – improve organisms, easily performed
- Disadvantages of SB and GE**
 - GE – allergies to new genes, accidental gene transfer, unknown side effects
 - SB – decrease in genetic diversity, negative traits could appear

29. **Charles Darwin** - the Father of Evolution; studied organisms on the Galapagos Islands; proposed the Theory of Evolution BY NATURAL SELECTION
30. **Gregor Mendel** – Father of Genetics; studied characteristics of pea plants; his studies yielded three "laws" of inheritance: the law of dominance, the law of segregation, and the law of independent assortment
31. **3 types of adaptation** - Structural (a part), Behavioral (a choice), Physiological/Functional (automatic)
32. **Homologous Structures** - Same Structure, different function, suggests common ancestor
33. **Analogous Structures** - Different structure, same function, suggests NO common ancestor
34. **Vestigial Structures** - structures organism has but no longer has a function, suggests common ancestor
35. **Speciation** - formation of a new species; when populations of the same species become so different they can no longer produce FERTILE offspring; caused by isolation
36. **Isolation** - mechanism of speciation
 - Geographical - physical barrier
 - Behavioral - different mating rituals/behaviors
 - Ecological - different habitat/environment
 - Temporal - different active mating period
 - Mechanical - different structural or chemical barriers
37. **Adaptation** - traits that increase an organism's chance to survive and reproduce in a particular environment
38. **Natural selection** - when members of a species that are BEST FIT to survive in an environment are more likely to pass down those best fit traits to their offspring; can lead to extinction!!
39. **Mutation** - change in an organism's DNA; can cause a change in the PROTEIN; can be harmful, helpful, or neutral
40. **Chromosome mutations** - whole genes added, lost, rearranged
41. **Gene mutations** - cause changes to genes
 - Frameshift mutations - insertion or deletion (nucleotides added or removed)
 - Point mutations - substitution (nucleotides swapped out)
42. **Gamete mutations** - occur in gametes; CAN BE passed to offspring/inherited
43. **Somatic cell mutations** - occur in somatic cells; CANNOT be passed to offspring
44. Nitrogen Base Sequence (in Genes) → Codon → Amino Acids → PROTEIN
45. Mutation/Variety → Overproduction → Competition/Survival of the Fittest → Descent with Modification/Evolution

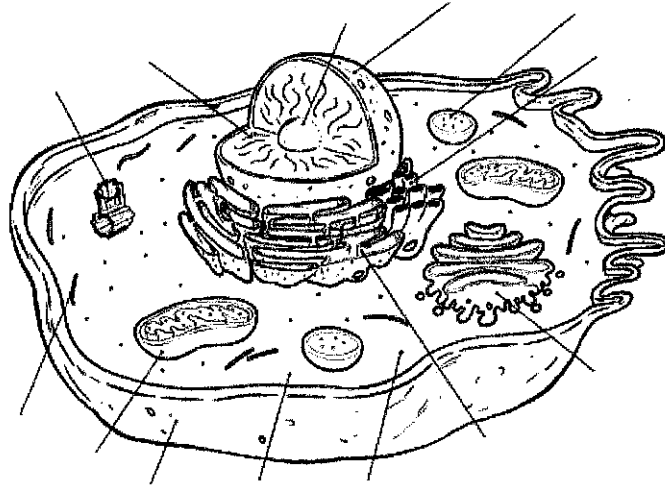
Pre Biology – Packet 1

- Vocabulary

1. _____ – genetic material found in the nucleus of a cell
2. _____ – used to transfer genetic material from the nucleus to the ribosome for protein synthesis
3. _____ – chemical compounds that contain carbon and make up living things
4. _____ – organic compound used by cells as a quick energy source and provides structural support for plants; composed of C, H, and O in a 1:2:1 ratio; most end with –ose
5. _____ – basic building blocks of protein molecules
6. _____ – organic compounds that provide structure for tissues and organs; carries out metabolism; form enzymes
7. _____ – a type of protein found in living cells; increase the rate of chemical reactions
8. _____ – organic compounds commonly called fats and oils; used for long-term storage, insulation and protective coating
9. _____ – organic compounds that store and transfer genetic information; DNA and RNA
10. _____ – process where light energy is trapped and converted into chemical energy;
$$6\text{H}_2\text{O} + 6\text{CO}_2 \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$$
11. _____ – process that breaks down glucose in the presence of oxygen to produce cellular energy (ATP)
$$\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 \rightarrow 6\text{H}_2\text{O} + 6\text{CO}_2$$
12. _____ – an energy producing cellular process that does require oxygen
13. _____ – an energy producing cellular process that does not require oxygen
14. _____ – cell transport across a cellular membrane that requires energy
15. _____ – cellular transport across a cellular membrane that does not require energy
16. _____ – passive transport of water molecules across a cellular membrane
17. _____ – the diffusion of WATER across a cell membrane
18. _____ – concentration of solutes is the same inside & outside the cell; water moves into & out of cell at an equal rate; NO CHANGE in size/shape of cell

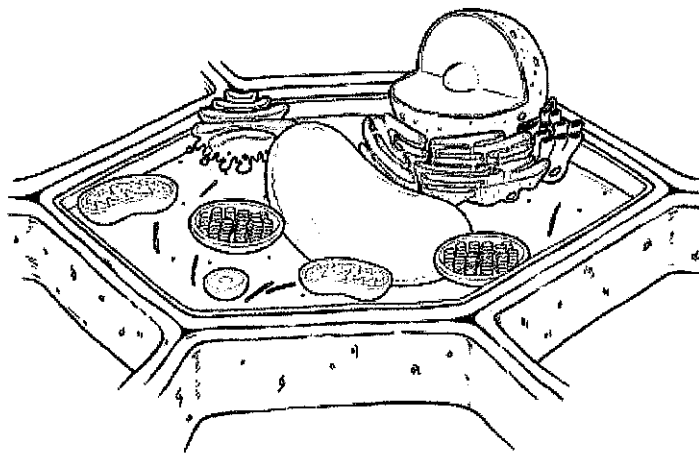
19. _____ – high solute concentration outside the cell; water diffuses (moves) out of the cell until equilibrium is reached; causes the cell to shrink
20. _____ – high solute concentration inside the cell; water diffuses (moves) into the cell until equilibrium is reached; causes the cell to swell
21. _____ – the process of copying a strand of DNA
22. _____ – the process occurring in the nucleus of a cell that copied information from part of DNA onto a strand of messenger RNA
23. _____ – the process occurring in the cytoplasm (at the ribosome) of a cell that builds proteins
24. _____ – a cell that does not have a nucleus or other membrane bound organelles; bacteria
25. _____ – a cell that does contain a nucleus and other membrane bound organelles; animals, plants, fungi, and protists
26. _____ – given credit for discovering the structure of DNA
27. _____ – organisms that create their own food (glucose) through photosynthesis or chemosynthesis → HAVE A CHLOROPLAST
28. _____ – organisms that cannot create their own food; have to consume other organisms for food (glucose) → DO NOT HAVE A CHLOROPLAST
29. _____ - permanent, close association between two or more organisms of different species:
 - _____ – one species benefits and the other is neither helped nor harmed
 - _____ – both species benefit
 - _____ – one species benefits and the other is harmed
30. _____ – fighting for the same resources
31. _____ – when populations work together for a similar goal
32. _____ – when a member of one species captures and eats members of another species
33. _____ – a representation in the shape of a pyramid that shows how energy is passed from one trophic level to the next
34. _____ – organism in a food chain that represents a feeding step in the passage of energy and materials through an ecosystem
35. _____ – the energy molecule generated by the mitochondria during cellular respiration; used as energy for cellular activity (metabolism)

Animal cell - Label the mitochondria, nucleus, ribosomes, cell membrane, and vacuole



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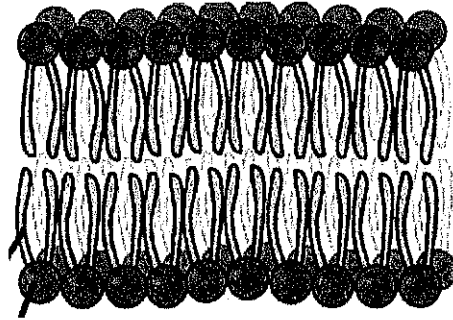
Plant cell - Label the mitochondria, nucleus, ribosomes, cell membrane, CELL WALL, vacuole, and CHLOROPLAST



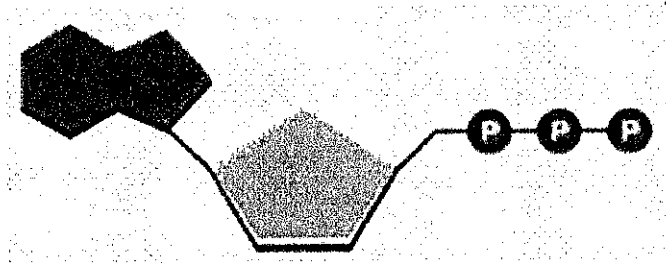
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Phospholipid - label the hydrophilic and hydrophobic portions

Cell membrane - label the hydrophilic and hydrophobic portions, circle a single phospholipid



ATP - label the phosphate groups, ribose and adenine; Draw an arrow showing where energy is released when bonds are broken



Name _____

Period _____

Practice 1 – 8th Grade Science

- 1) In the controversial scientific process of cloning, organisms are created that are genetically identical to the parent. This process would be classified as
- A) meiosis.
 - B) fertilization .
 - C) sexual reproduction.
 - D) asexual reproduction.
- 2) DNA is typically found in cells in the form of a very long strand that is coiled many times and contains thousands or millions of nitrogen bases. Which term best describes this very long molecule of DNA?
- A) chromosome
 - B) gene
 - C) allele
 - D) nucleotide
- 3) Which process results in two daughter cells each having the same number of chromosomes as the parent cell?
- A) meiosis
 - B) mitosis
 - C) photosynthesis
 - D) cytokinesis
- 4) _____ was demonstrated in the darkening of the population of the peppered moth in Europe over a relatively short period of time.
- A) Natural selection
 - B) Natural integration
 - C) Kettlewell adaptation
 - D) Industrial modification
- 5) The sequence of _____ in a DNA molecule determines the protein that will be produced.
- A) lipids
 - B) nucleotides
 - C) proteins
 - D) sugars
- 6) An organism with 24 chromosomes in each body cell will produce sex cells with _____ chromosomes.
- A) 12
 - B) 24
 - C) 48
 - D) 96
- 7) A human skin cell contains 46 chromosomes. How many chromosomes are present in a human egg cell?
- A) 23
 - B) 46
 - C) 92
 - D) 138

8) To ensure its survival, any species must be able to

- A) kill competitors.
- B) reproduce successfully.
- C) obtain enough energy through food.
- D) maintain internal body homeostasis.

9) Which statement BEST describes how mutations are related to evolution?

- A) There is not a strong relationship between mutations and evolution.
- B) Natural selection causes evolution, which causes more mutations to appear in the DNA of the species.
- C) Mutations are changes in DNA that produce weaker organisms that die, so these are eliminated by evolution.
- D) Mutations lead to new genes, which may have an advantage over the old forms, causing the species to evolve.

10)

- | |
|-------------------|
| A) Chromosome |
| B) DNA nucleotide |
| C) Codon |
| D) Gene |

Place the components in order, from smallest to largest.

- A) A-B-D-C
- B) B-C-D-A
- C) C-D-B-A
- D) D-C-B-A

11) The process of _____ increases genetic variability as it produces gametes for sexual reproduction.

- A) conjugation
- B) meiosis
- C) mitosis
- D) replication

12) Without ribosomes, a cell would not produce

- A) lipids.
- B) proteins.
- C) salt.
- D) water.

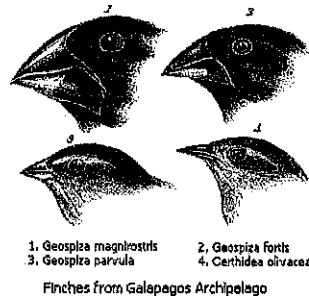
13) How many pairs of chromosomes does a genetically-normal human being have?

- A) 23
- B) 36
- C) 46
- D) 48

14) Natural selection can lead to the formation of a new species which is called

- A) fitness.
- B) mutations.
- C) selection.
- D) speciation.

15)



This image shows four different finches Charles Darwin found while on the Galapagos Islands. Which of these would be most adapted to eating small insects found in tiny holes of trees?

- A) *Geospiza fortis*
- B) *Geospiza parvula*
- C) *Certhidea olivacea*
- D) *Geospiza magnirostris*

16) In prophase I of meiosis, crossing over results in

- A) genetic recombination.
- B) creating a male gamete.
- C) creating a female gamete.
- D) half the number of chromosomes.

17)



The duck billed platypus is one of the few egg-laying mammals remaining in the world. Like many unusual life forms, it is native to Australia, a country that is an island. Australia has many life forms not seen elsewhere in the world because the country

- A) has a harsh climate.
- B) is known to have many predators.
- C) has many mutations in its life forms.
- D) is separated from the rest of the world.

18) Which is an example of geographic isolation?

- A) A species of chipmunk becomes extinct because of a lack of food.
- B) Two groups of albatross live on separate islands but commonly cross from one island to the other.
- C) A group of snakes is unable to cross a river and is separated from a group of snakes on the opposite side.
- D) One group of frogs mates in spring and another mates in fall, effectively isolating the two groups from breeding with each other.

19)



Scientists can alter plants such as this potato plant in order to produce bigger and better potato crops. To do this, scientists alter specific _____ found in the DNA of the plants' cells.

- A) RNA
- B) chromosomes
- C) codons
- D) genes

20) In England, peppered moths have two color forms, light and dark. Dark is a dominant trait. Until about 1850, the majority of moths in England were light colored. With the beginning of the Industrial Revolution in the late 1800's, the moth population began to change color. The majority of the moths were dark by the 1920's. How can this be explained genetically?

- A) Moths with the light color allele became extinct.
- B) As the light colored moths were seen and eaten, the allele for dark color became more prevalent in the population.
- C) The pollution from the industrial soot caused mutations in the moth genome and as a result the moth color changed.
- D) Because dark color is a dominant trait, we would expect there to be more alleles for dark color in the gene pool of the moth population.

21) The *central dogma* of molecular biology is centered upon the process of _____, in which the information from DNA is transcribed and translated, resulting in amino acids being joined into polypeptides.

- A) replication
- B) translation
- C) protein synthesis
- D) carbohydrate synthesis

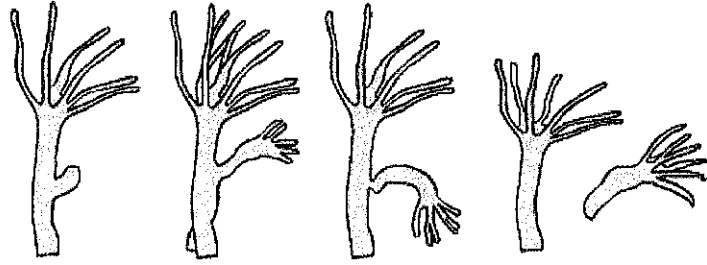
22) Proteins are composed of chains of _____ which are joined together with peptide bonds.

- A) fatty acids
- B) amino acids
- C) nucleic acids
- D) monosaccharides

23) Following the nuclear reactor accidents in Japan in April, 2011, some people were exposed to high levels of radiation. Children born to these people in the future could have mutations if these mutations occurred in the parents'

- A) sex cells.
- B) skin cells.
- C) brain cells.
- D) internal organs.

24)



The picture shows the process of asexual reproduction in hydra. According to the illustration, all offspring are

- A) genetically varied.
- B) genetically identical to the parent.
- C) slightly similar to the parent.
- D) genetically very different from the parent.

25)



The koala is an animal native to Australia. Despite the popular name, koala bear, they aren't bears, but marsupials like kangaroos, that keep their newborns in a stomach pouch.

They have developed very differently than other marsupials, in part because they spend most of their lives in the eucalyptus trees that serve as their main source of food.

What adaptation helps them lead this tree bound life?

- A) The use of pouches to hold koala newborns.
- B) Grey fur that keeps them hidden from predators.
- C) Hands, feet, and claws that are perfect for gripping branches.
- D) Distinct calls they use to communicate potential danger to one another.

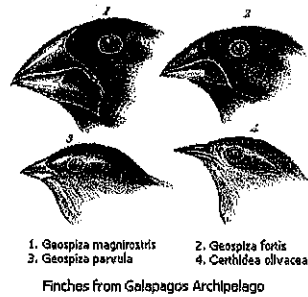
26) How does the speckled coat of a young deer help it to survive?

- A) The speckled coat is a form of mimicry.
- B) This is a physical adaptation that helps a doe recognize her fawn.
- C) The pattern of the speckled coat is used as a form of warning coloration.
- D) The speckled coat blends with the light that filters through the forest leaves.

27) Brown eyes in humans is a dominant trait. We inherit dominant traits from our parents, some from our mother and some from our father, in the form of

- A) RNA.
- B) gametes.
- C) genes.
- D) traits.

28)



While on the Galapagos Islands, Darwin noticed that there were a number of species of finches that he theorized descended from a common ancestor. He hypothesized that these finches became isolated on an island and adapted to fit an ecological role on that island. What about the finches led Darwin to this belief?

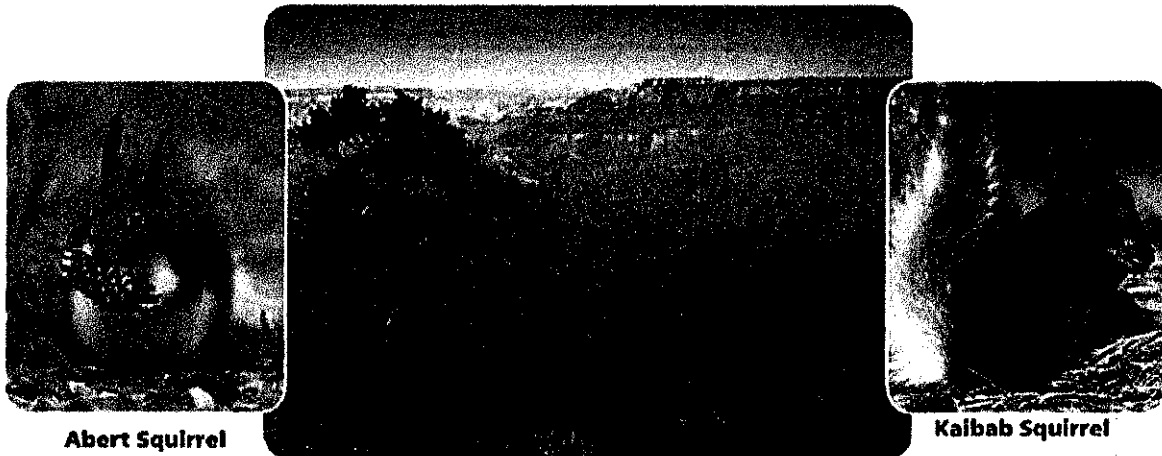
- A) feather color
- B) body size
- C) beak shape
- D) mating behavior

29) A species is a group of organisms capable of mating and producing offspring, and speciation is the process of forming a new species.

One way a new species may form is by _____ isolation. This occurs when members of a population are physically separated, for example, by a river, or a desert.

- A) extreme
- B) geographic
- C) inductive
- D) reproductive

30)



When the Grand Canyon was forming, a population of squirrels were separated into two groups. The north side of the canyon is at a higher elevation and experiences more rainfall than the south side of the canyon. The two squirrel species you see here had a common ancestor, but over time, have evolved into two different species. How did natural selection lead to different species?

- A) Because the squirrels were separated by the canyon, they were no longer able to reproduce and thus, became different species.
- B) When the squirrels were separated, some of them acquired traits better suited for their new environment. This allowed them to survive and reproduce better than others. Over time, each group evolved to display unique traits for their different environments until one species evolved into two.
- C) This allowed them to survive and reproduce better than others. Over time, each group evolved to display unique traits for their different environments until one species evolved into two.
- D) When the squirrels were separated, new mutations introduced variation within each group. Squirrels on each side of the canyon had different mutations. This allowed them to survive and reproduce better than others. Over time, each group evolved to display unique traits for their different environments until one species evolved into two.

Answer Key.

1. D

Explanation:

This process would be classified as **asexual reproduction**. Asexual reproduction is a biological process by which an organism creates a genetically similar copy of itself without the combination of genetic material with another individual.

2. A

Explanation:

A very long DNA molecule is called a **chromosome**.

3. B

Explanation:

Mitosis is the term that refers to the process of nuclear division. Meiosis is another method of cell division mostly for reproductive cells. The other two options are two stages in the process of mitosis in which DNA is forming chromosomes and then splitting apart after metaphase.

4. A

Explanation:

In the case of the peppered moth, industrial pollution was the selective pressure that led to the change in the population. The process of **natural selection** caused change over a short period of time.

5. B

Explanation:

The sequence of **nucleotides** determines the information that a DNA molecule contains for the production of proteins.

6. A

Explanation:

12 chromosomes will be found in each sex cell because sperm and egg contain one-half of the genetic information that is found in body cells.

7. A

Explanation:

23 Eggs are haploid. They have half the original number of cells, so they can join with a sperm (also 23 chromosomes) to regain the original 46.

8. B

Explanation:

Reproduce successfully. On the species level, this is what is required to avoid extinction. Individuals need to do the first two, but individuals dying does not necessarily doom the species as a whole.

9. D

Explanation:

Mutations lead to new genes, which may have an advantage over the old forms, causing the species to evolve. Mutations can sometimes be helpful, allowing the species to evolve.

10. B

Explanation:

B-C-D-A The correct order is DNA nucleotide, codon, gene, chromosome.

11. B

Explanation:

The process of **meiosis** increases genetic variability as it produces gametes for sexual reproduction. Each gamete receives half the chromosomes of the parent cell; the half it receives is randomly assorted.

12. B

Explanation:

Ribosomes use instructions from DNA to produce **proteins**. Cells do not produce water or salt, and lipids are made in the endoplasmic reticulum.

13. A

Explanation:

A normal human body cell contains **23** pairs of chromosomes.

14. D

Explanation:

Speciation is the term used to describe the formation of a new species due to natural selection.

15. C

Explanation:

Certhidea olivacea has the smallest beak which would make it best able to get insects out of small places.

16. A

Explanation:

During prophase I, crossing over results in **genetic recombination** or a changing of the genes on the DNA. This allow for genetic variability through sexual reproduction, and it is vital to the long-term survival of a sexual organism.

17. D

Explanation:

Australia is thought to have once been joined to India and Antarctica in a continent. This continent eventually broke apart, leaving Australia as an island. Australia has many unusual life forms because it is an island and **is separated from the rest of the world**. This is a form of geographic isolation.

18. C

Explanation:

For geographic isolation to occur, there must be some type of physical barrier separating two groups or populations. The only such choice given is when a **group of snakes is unable to cross a river and is separated from a group of snakes on the opposite side**. When two groups are isolated because they mate in different seasons, it is known as reproductive isolation.

19. D

Explanation:

Scientists can alter specific **genes** within the DNA of organisms in order to produce specific traits in that organism. This is often done with specific plant species that are used for food. Scientists have replaced faulty copies of a gene with healthy copies in an attempt to combat some diseases and inherited conditions in animals.

20. B

Explanation:

After the beginning of the Industrial Revolution, soot settled on the trees and buildings throughout England. **As the light colored moths were seen and eaten, the allele for dark color became more prevalent in the population.**

21. C

Explanation:

protein synthesis is the central idea in molecular biology in which the genetic information from DNA is transcribed by mRNA, then translated by tRNA, which leads to the assembly of proteins.

22. B

Explanation:

amino acids join together with peptide bonds to form proteins.

23. A

Explanation:

Only gametes can pass mutations from parent to child. Therefore, if the radiation caused mutations on the parents' **sex cells** these mutations may be passed to their offspring.

24. B

Explanation:

In asexual reproduction, one individual produces offspring that are **genetically identical to the parent**. This organism, a hydra, exhibits one of the types of asexual reproduction called budding. During budding, an offspring grows out of the body of the parent and then buds off to live independently.

25. C

Explanation:

Hands, feet, and claws that are perfect for gripping branches. These are just what the koala needs to stay in the trees all day long.

26. D

Explanation:

The speckled coat blends with the light that filters through the forest leaves. A speckled coat is a form of camouflage that helps the fawn survive and avoid predators.

27. C

Explanation:

Traits are inherited from our parents. **Genes** are sections of DNA that code for certain traits.

28. C

Explanation:

The finches evolved to have different **beak shapes** to be able to eat the food available on the different islands.

29. B

Explanation:

geographic

Once the populations are separated, they may adapt and evolve differently.

30. C

Explanation:

How did natural selection lead to different species? **When the squirrels were separated, there was variation within each group. Some had traits that made them better suited for their home environment. This allowed them to survive and reproduce better than others. Over time, each group evolved to display unique traits for their different environments until one species evolved into two.**

If reunited they would not be able to reproduce and produce fertile offspring, because they are now two different species.