Lewis County Schools

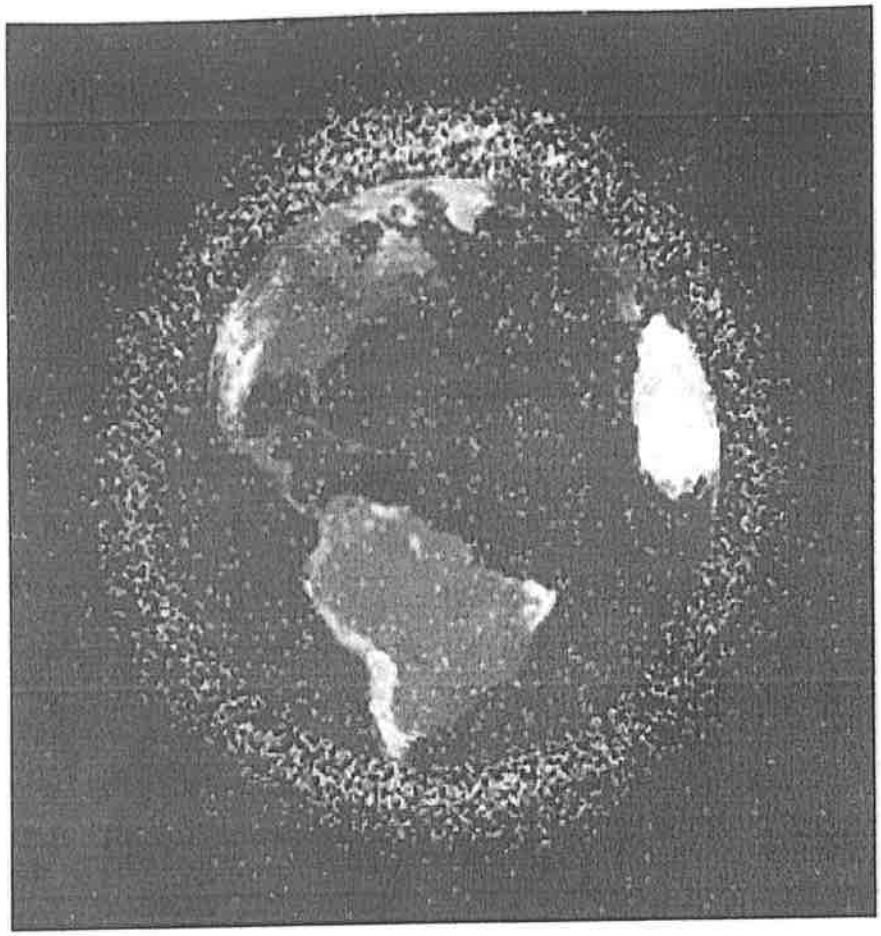
6th Grade

Day 31

Day 31

Space Junk

by Josh Adler



Many people know that trash is a big problem on planet Earth. What many people don't know is that trash has become a problem in outer space too. Years of space exploration have left tons of "space junk" in orbit around the planet.

According to *BBC News*, there are more than 22,000 pieces of junk in space around the earth. And these are just the items that we can see from the surface of the earth by telescopes or radars. There are also millions of smaller pieces of junk that we can't see.

Objects, like bits of old space rockets or satellites, move around the planet at very high speeds, so fast that even a very small piece can break important satellites or become dangerous to people, particularly astronauts. If the tiniest piece of junk crashed into a spacecraft, it could damage the vehicle. That's because the faster an object moves, the greater the impact if the object collides with something else.

To make things worse, when two objects in space collide, the two objects break into many smaller

pieces. This happened in 2009 when a working United States satellite collided with a Russian satellite that was no longer functioning. The collision caused the satellites to break into more than 2,000 pieces, increasing the items of space junk.

To help minimize additional space junk, countries around the world have agreed to limit the time their space tools stay in orbit to 25 years. Each tool must be built to fall safely into the earth's atmosphere, or the mass of gases that surround the earth, after that. In the upper parts of the atmosphere, it will burn up.

Many scientists are also proposing different ways to clean up space junk. In England a metal harpoon is being tested that can be fired into space trash, grip the trash, and then pull the space junk into the earth's atmosphere where it would burn up.

The Germans have been planning a space mission with robots that would collect pieces of space trash and bring them back to Earth so that they can be safely destroyed.

In 2007 the Chinese tried to blow up one of its older satellites with a missile. Unfortunately, the explosion only created thousands of smaller pieces, adding junk in space!

"In our opinion the problem is very challenging, and it's quite urgent as well," said Marco Castronuovo, an Italian Space Agency researcher who is working to solve the problem. One reason that it's urgent is that countries are sending more and more objects into space. Many of these objects are tools that help people use their cell phones or computers.

"The time to act is now; as we go farther in time we will need to remove more and more fragments," he says.

Name: _____ Date: _____

1. What has left tons of "space junk" in orbit around the earth?

A. robots sent on space missions

B. years of space exploration

C. lack of recycling

D. missiles in outer space

2. Countries around the world have agreed to limit the time their space tools stay in orbit to 25 years. As explained in the passage, what problem does this solution address?

A. the increasing amount of space junk in orbit around the earth

B. space agencies exploring space

C. Chinese efforts to blow up a satellite

D. objects moving around the planet at very high speeds

3. Trash has become a problem in outer space too.

What evidence from the text best supports this statement?

A. The Chinese tried to blow up one of its satellites with a missile in 2007.

B. In England, a metal harpoon is being tested that can be fired into space, gripping space trash and pulling it back into the earth's atmosphere to burn up.

C. The Germans have been planning a space mission with robots to collect some space trash and bring it back to Earth.

D. According to *BBC News*, there are more than 22,000 pieces of junk in space around the earth.

4. Why have countries agreed to build space tools that must fall safely into the earth's atmosphere?

A. so that the tools can remove pollution from the atmosphere after returning from space

B. so that the tools burn up in the atmosphere and don't become space junk

C. so that the tools pollute the atmosphere instead of outer space

D. so that the tools can analyze the different gases that make up the atmosphere after returning from space

5. What was the passage mostly about?

A. different missions scientists are trying in space

B. the effects that tiny pieces of space junk could have on the earth

C. the problem of space junk and scientists' attempts to solve this problem

D. the problem of trash on planet Earth

6. Read the following sentences: "'In our opinion the problem is very challenging and it's quite urgent as well,' said Marco Castronuovo, an Italian Space Agency researcher who is working to solve the problem. One reason that it's **urgent** is that countries are sending more and more objects into space. Many of these objects are tools that help people use their cell phones or computers."

What does the word **urgent** most nearly mean?

A. easy to solve

B. unnecessary

C. needs immediate attention

D. minor

7. Choose the answer that best completes the sentence below.

Years of space exploration have left tons of "space junk," _____ many scientists are trying to find a way to clean up outer space.

A. so

B. instead

C. because

D. similarly

8. What did the 2009 collision of a United States satellite and a Russian satellite cause?

9. What have the Germans done to help clean up space junk?

10. Different countries have explored or are exploring different methods to clean up space junk. Explain why some methods may be more effective than others. Use evidence from the text to support your answer.

Day 51 Math

Name _____ Date _____ Class _____

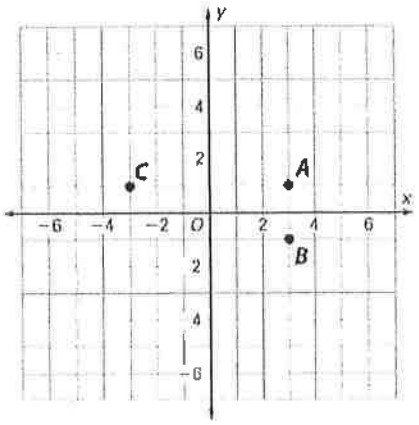
LESSON 14-1

Distance in the Coordinate Plane

Reteach

Reflecting a Point

In this lesson, a point on a coordinate plane is reflected across the axes of the coordinate plane. The points *B* and *C* are reflections of point *A* across the *x*- and *y*-axes.



The coordinates of point *A* are (3, 1).

Point *B* is the reflection of point *A* across the *x*-axis.

Point *C* is the reflection of point *A* across the *y*-axis.

The following rules can help you find the coordinates of a reflected point by looking at the signs of the coordinates.

Reflecting across the *x*-axis

"Reflect across *x*. ⟶ Change the *y*."

In this example, point *A*'s *x*-coordinate, +3, stays the same when point *A* is reflected across the *x*-axis to become point *B*. Point *A*'s *y*-coordinate, +1, switches to –1 to become point *B*.
So, point *B*'s coordinates are (3, –1).

Reflecting across the *y*-axis

"Reflect across *y*, ⟶ Change the *x*."

In this example, point *A*'s *y*-coordinate, +1, stays the same when point *A* is reflected across the *y*-axis to become point *C*. Point *A*'s *x*-coordinate, +3, switches to –3 to become point *C*.
So, point *C*'s coordinates are (–3, 1).

Name the coordinates of each point after it is reflected across the given axis.

Tells me "x" stays the same ⟵ Change the sign on y.

1. *A*(1, 3)
   x-axis
   (1, –3)

2. *B*(–4, 5)
   y-axis
   (____, ____)

3. *C*(6, –7)
   y-axis
   (____, ____)

4. *D*(–8, –9)
   x-axis
   (____, ____)

Distance between Points

The distance between two points on a coordinate plane depends on whether their *x*- or *y*-coordinates are different. Look at the points on the grid above to solve the problems.

The distance between points *A* and *B* is the absolute value of the difference of the *y*-coordinates of the points.

The distance between points *A* and *C* is the absolute value of the difference of the *x*-coordinates of the points.

Find the distance between the two points.

5. points *A* and *B*

   _____ units

6. points *A* and *C*

   _____ units

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LESSON 14-1

Distance in the Coordinate Plane

Practice and Problem Solving: A/B

Name the coordinates of each reflection.

1. Point *A* across the *x*-axis

   New point: (_____, _____)

2. Point *B* across the *y*-axis

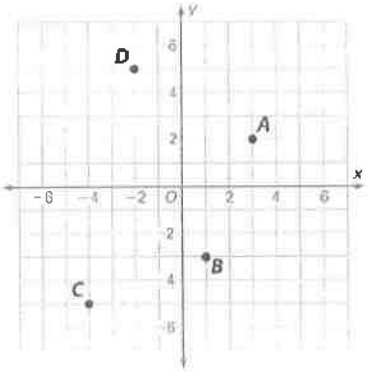
   New point: (_____, _____)

3. Point *C* across the *x*-axis

   New point: (_____, _____)

4. Point *D* across the *y*-axis

   New point: (_____, _____)



Name the coordinates of each reflection of the given point.

5. *M*(–2, –6)

   Across the *y*-axis: (_____, _____)

   Across the *x*-axis: (_____, _____)

6. *N*(4, 1)

   Across the *x*-axis: (_____, _____)

   Across the *y*-axis: (_____, _____)

Find the distance between the points.

7. *A* and *B*: _____

8. *A* and *C*: _____

9. *B* and *D*: _____

10. *C* and *G*: _____

11. *D* and *F*: _____

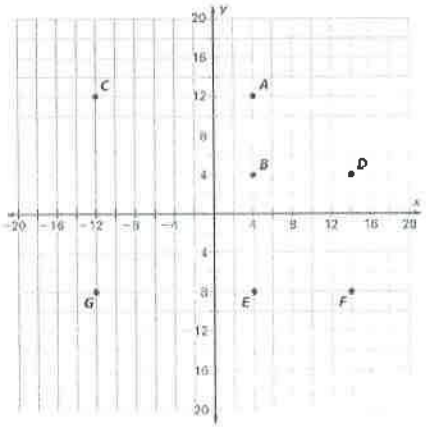
12. *E* and *F*: _____

13. *E* and *B*: _____

14. *E* and *A*: _____

15. *E* and *G*: _____

16. *F* and *G*: _____



Solve.

17. A taxi travels 25 kilometers east of an airport. Then, it travels from that point to a point that is 40 kilometers west of the airport. Finally, the taxi returns to the airport. How far did the taxi travel? Show your work.

_____

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Read the passage and look at each underlined section. Is there a mistake? If there is, how do you correct it? Circle the letter of your answer.

Most people think of school when they hear the word "education." (1) But traveling is an excellent way to learn. Each area of the country has its own (2) distinct animals and trees? Where else can you see a Florida manatee but in Florida?

1. **A.** Change Most to most.
   B. Replace the period with an exclamation point.
   C. Replace the period with a question mark.
   D. No mistake

2. **A.** Change Each to each.
   B. Replace the question mark with an exclamation point.
   C. Replace the question mark with a period.
   D. No mistake

Read the passage below. How would you describe each group of underlined words? Circle the letter of your answer.

There are three levels of protection given to animals in danger of extinction. The first level (3) is the highest level: endangered. The second level has been titled "threatened." Animals on the third level. are called "species of (4) special concern."

3. **A.** A complete sentence
   B. A sentence fragment missing a simple subject
   C. A sentence fragment missing a complete subject
   D. A sentence fragment missing a complete predicate subject

4. **A.** A complete sentence
   B. A sentence fragment missing a simple subject
   C. A sentence fragment missing a complete subject
   D. A sentence fragment missing a complete predicate

Grammar

Name _____

Unit Review: Sentences

Read the passage. Circle the answer that describes each underlined sentence.

John loves and cares for his tropical fish, and often he adds to his (5) collection. John owns two Betta fish called Buddy and Freddy. John and his sister, Sandy, own two of these colorful sea creatures, and they (6) often do research on how to care for them. There are many questions to answer and ask. What kind of tank is best? What is the best kind of food? It's a big responsibility caring for living things.

5. **A.** Simple sentence with compound subject
   B. Simple sentence with compound predicate
   C. Compound sentence with compound subject
   D. Compound sentence with compound predicate

6. **A.** Simple sentence with compound subject
   B. Simple sentence with compound predicate
   C. Compound sentence with compound subject
   D. Compound sentence with compound predicate

Read the passage and look at each underlined sentence. Is there a mistake? If there is, how do you correct it? Circle the letter of your answer.

John often looks to Sandy for help with Buddy and Freddy. While Sandy was changing the water in the tank John watched her carefully. John (7) wanted to know the correct temperature of the water. Buddy and Freddy (8) are going to stay happy and healthy.

7. **A.** Add a comma after *tank.*
   B. Add a comma and a conjunction after *tank.*
   C. Add a conjunction after *tank.*
   D. No mistake

8. **A.** Add a comma after *know.*
   B. Add a comma and a conjunction after *know.*
   C. Add a conjunction after *temperature.*
   D. No mistake

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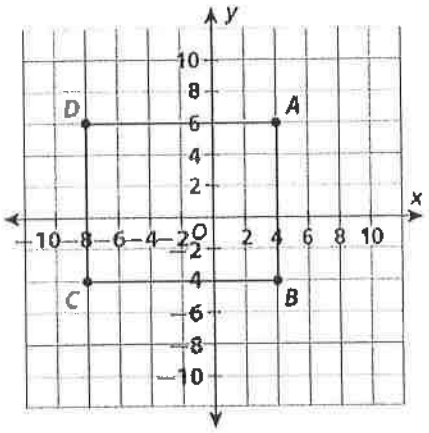
LESSON 14-2

Polygons in the Coordinate Plane

Reteach

Polygons are formed from three or more points, called *vertices*, that are connected by line segments and that enclose an area.

If the lengths of the sides are known, the area and perimeter of a polygon can be found. They can also be found if the coordinates of the vertices are known.



Find the Perimeter

First, identify the coordinates of the points that form the vertices of the polygon.

A: (4, 6); *B*: (4, –4); *C*: (–8, –4); *D*: (–8, 6)

Next, find the lengths of the sides.

AB = 10 units

BC = 12 units

CD = 10 units

DA = 12 units

Finally, add the lengths of the sides.

10 + 12 + 10 + 12 = 44

The perimeter of the polygon is 44 units.

Find the Area

First, identify the polygon. The figure is a rectangle, so its area is the product of its length and width.

Next, use the coordinates of the points to find the length and width.

AB = 10 units

BC = 12 units

Finally, multiply the length and width.

10 × 12 = 120

The area of the polygon is 120 square units.

In this case, the area can also be found by counting the squares enclosed by the polygon. There are 30 squares.

How much area is represented by each square? 2 × 2, or 4 square units.

The area is 30 cubes × 4, or 120 square units.

Find the difference of x: 8-2=6
Find the difference of y: 6-5=11
Perimeter: l+l+w+w
Area: lw

Find the perimeter and area of the polygon enclosed by the points.

1. (8, 6), (2, 6), (8, –5), and (2, –5)

Side lengths: Length of 6 width of 11

Perimeter: 6+6+11+11=34

Area: 11 × 6 = 66

2. (0, 0), (0, 7), (7, 7), and (7, 0)

Side lengths: _____

Perimeter: _____

Area: _____

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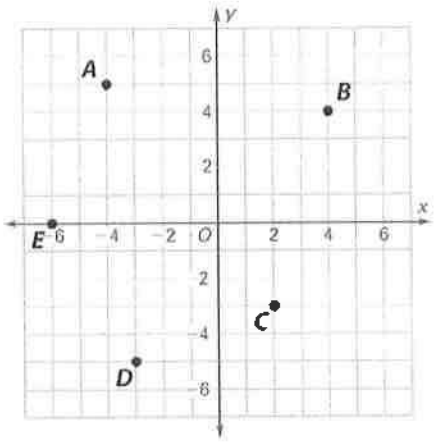
LESSON 14-2

Polygons in the Coordinate Plane

Practice and Problem Solving: A/B

List all of the polygons that can be formed by using some or all of the lettered vertices shown in the coordinate plane.

1. _____



Tell how many polygons can be formed by each set of points or set of points and a line.

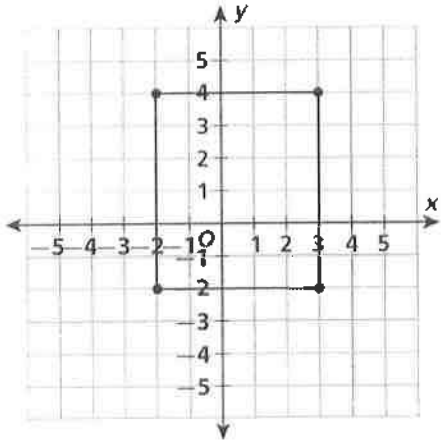
2. (0, 1) and (2, 3) _____

3. (4, 5), (6, 7), and (8, 9) _____

4. (3, 5) and the *x*-axis. _____

Find the perimeter and area of each polygon. Show your work.

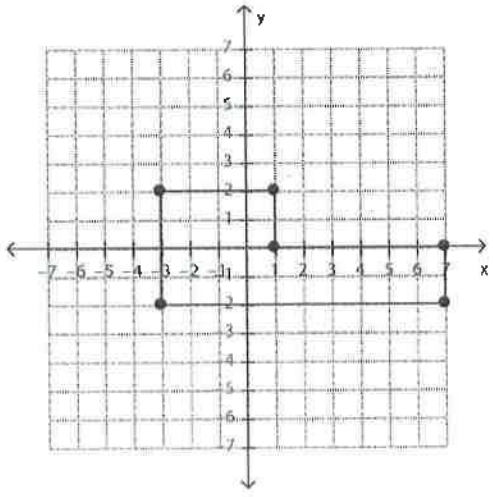
5.



Perimeter: _____

Area: _____

6.



Perimeter: _____

Area: _____

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Predicting the Future

by ReadWorks

Houston, Texas

Garry Golden sits in a small cafe in Brooklyn, New York. In front of him, sheets of paper with diagrams litter the table. He rapidly sketches trains, cars and highways as he explains his ideas. Garry Golden has one passion: transportation. The science of how to move people from place to place fascinates him. He spends his days studying the relationships between cars, subways, and trains. But he's most excited about imagining the way these relationships will change in the next 20 years.

Golden is a futurist. Futurists are scientists who analyze the way the world is today and use that information to make predictions about what the world will be like in the future. In this way, they are the opposite of historians, who try to better understand the present through studying the past. Futurists hope that by making scientific predictions about the future, we can make better decisions today.

Some futurists study the environment. Some study human society. Golden focuses on the study of transportation. He earned his graduate degree in Future Studies from the University of Houston. Living in Houston for those two years changed the way he viewed transportation in the United States.

Many public transportation advocates dislike Houston. They argue the city is too sprawling (it can take more than three hours to drive from one side of the city to the other during rush hour) and that there aren't enough buses and subways. However, Houston was a source of inspiration for Golden.

"Houston is a really interesting place, and their transportation is a fascinating story-it's worth watching. When you think about it, what is the U.S. like? It's more like Houston. So you need to understand how Houston approaches things to understand the country as a whole. New York City is the exception," said Golden in an interview with *The New York Times*.

Golden points out that people in New York City own fewer cars and walk much more than anywhere else in the United States. "It's a unique environment," says Golden. "Very different from the rest of the country."

However, Golden believes American cities will become more similar to New York City in several ways over the next 20 years. He sees a trend toward fewer cars in the future. He explains, "Cities have a cost of car ownership that is a challenge. All these vehicles cost the city: in services, in having to repair roads and all of the other things." Cars also take up a lot of space. Houston, for example, has 30 parking spaces for every resident. That's 64.8 million parking spaces in only one city.

Golden points out that having so many parking spaces is inefficient. Much of the time the parking spaces sit empty. At high-use times-for example, Saturday afternoon when everyone is running errands-every parking space at a shopping center is full. But at 3 a.m. on a Monday, no one is at the shopping center. What is the solution? "I think cities are going to start to legislate cars in very new ways," says Golden. He explains that cities will make new laws to limit the number of cars people can have within city limits. Instead, people will use taxis, subways and buses. New technology, like smartphones, can make these forms of public transportation even better.

Buses have the same problem of inefficiency as parking spaces, explains Golden. Sometimes they are full, and sometimes they are empty. But imagine if everyone had a smartphone and used them to signal when they wanted to ride the bus. Buses could change their route, depending on who wanted to ride.

How soon would these changes come? Golden admits that it will take several years. Cities can be slow to change. Also, new systems of transportation can be expensive. "But it's coming," he says. "The trend of the empowered city will be here soon."

The other trend that excites Golden is electric cars. "We need to reduce the amount of fuel we consume," says Golden. "Everyone agrees on this. The question is how to do it." Golden especially believes in the future of electric cars that have sensors to understand the world around them. "If we have cars that can communicate with one another, they can adjust speeds to eliminate traffic jams," he says. Rush hour in Houston would suddenly be much less painful.

One challenge related to the production of electric cars is that it is hard to cheaply produce batteries that are strong enough for these cars. This is partially because cars are so heavy. But Golden argues you could also make cars out of strong plastic composites. The cars would then be much lighter and much cheaper to make. "This could revolutionize the highways," he says. When could electric smart cars become the norm? Golden argues as soon as 2030.

As a futurist, Golden shares his predictions with other scholars at conferences across the country. He also provides advice to companies that want to know what the future will be like so that they can make better strategies. Golden remains optimistic about the future. "There are so many exciting developments," he says. "In thirty years we will live a very different world."

Name: _____ Date: _____

1. What is Gary Golden's one passion?

A. Houston, Texas

B. the environment

C. human society

D. transportation

2. One problem with electric cars is that they require very strong batteries. Part of the reason the batteries have to be so strong is that cars are so heavy. What solution does Golden propose for this problem?

A. build cars out of strong plastic composites so that they are lighter

B. find an easier and faster way to produce strong batteries for cars

C. build cars out of lighter weight metals so they don't need as many batteries

D. create a way for cars to communicate with each other and adjust their speeds

3. Cars require a lot of space in cities. What evidence from the passage best supports this conclusion?

A. Cities have to build parking spaces and repair roads for cars.

B. Cities may limit the number of cars people can have within the city.

C. In Houston, there are 30 parking spaces for every resident.

D. Parking lots at shopping centers are not full all of the time.

4. Based on Garry Golden's predictions, how can transportation systems of the future best be described?

A. expensive and complicated

B. high-tech and efficient

C. high-tech yet impractical

D. inexpensive yet outdated

5. What is this passage mostly about?

A. how one futurist thinks transportation will change in the coming years

B. reasons why cars cost the city money and are an inefficient use of resources

C. how to improve electric cars so that they are more widely used and available

D. a comparison of public transportation systems across the United States

6. Read the following sentences: "Houston, for example, has 30 parking spaces for every resident. That's 64.8 million parking spaces in only one city. Golden points out that having so many parking spaces is **inefficient**. Much of the time the parking spaces sit empty. At high-use times-for example, Saturday afternoon when everyone is running errands-every parking space at a shopping center is full. But at 3 a.m. on a Monday, no one is at the shopping center."

As used in this sentence, what does the word "**inefficient**" most nearly mean?

A. productive without wasting time and materials

B. successful and effective

C. imaginative and creative

D. wasteful of space and materials

7. Choose the answer that best completes the sentence below.

Historians study the past in order to better understand the present. _____, futurists analyze the present in order to make scientific predictions about the future.

A. In particular

B. Such as

C. In contrast

D. Ultimately

8. What does Garry Golden spend most of his days studying?

9. Buses are currently inefficient. According to Golden, how could this type of transportation be improved?

10. Explain how communications technology (such as smartphones and sensors) could help improve transportation in the future. Support your answer using information from the passage.

Day 33 Math

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LESSON 15-2

Volume of Rectangular Prisms

Reteach

The volume of a rectangular prism is found by multiplying its length, width, and height. In some cases, instead of the length and width, the area of one of the bases of the prism will be known.

Length, width, height, and volume

A rectangular prism has dimensions of 2.5 meters, 4.3 meters, and 5.1 meters. What is its volume to two significant figures?

Solution

$V = l \times w \times h$

$V = 2.5 \times 4.3 \times 5.1$

$= 54.825$

To two significant figures, the volume of the prism is 55 cubic meters.

Base area, height, and volume

A rectangular prism has a base area of $\frac{2}{3}$ of a square foot. Its height is $\frac{1}{2}$ foot. What is its volume?

Solution

$V = A_{base} \times h$

$V = \frac{2}{3} \times \frac{1}{2} = \frac{1}{3}$

The volume of the prism is $\frac{1}{3}$ cubic foot.

Find the volume of a rectangular prism with the given dimensions.

1. length: $\frac{2}{3}$ yd; width: $\frac{5}{6}$ yd; height: $\frac{4}{5}$ yd $\frac{2}{3} \times \frac{5}{6} \times \frac{4}{5} = \frac{40}{90} \div \frac{10}{10} = \frac{4}{9}$ ft^3 $L \times W \times H$

2. base area: 12.5 m^2; height: 1.2 m _____

The density of a metal in a sample is the mass of the sample divided by the volume of the sample. The units are mass per unit volume.

Problem The mass of a sample of metal is 2,800 grams. The sample is in the shape of a rectangular prism that measures 5 centimeters by 7 centimeters by 8 centimeters. What is the volume of the sample?

$V = 5 \times 7 \times 8$

$= 280$ cm^3

What is the density of the sample?

$2{,}800 \div 280 = 10$ g/cm^3

3. A sample of metal has a mass of 3,600 grams. The sample is in the shape of a rectangular prism that has dimensions of 2 centimeters by 3 centimeters by 4 centimeters. What is the density of the sample?

_____

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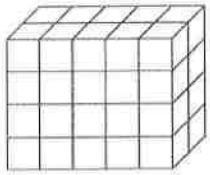
LESSON 15-2

Volume of Rectangular Prisms

Practice and Problem Solving: A/B

Use the formula for the volume of a rectangular solid to find the volume of each solid in cubic meters.

1. 

5 cubes = 1 meter

Length:

_____ cubes = _____ meter

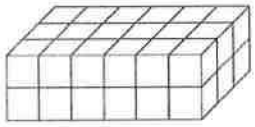
Width:

_____ cubes = _____ meter

Height:

_____ cubes = _____ meter

Volume: _____

2. 

6 cubes = 1 meter

Length:

_____ cubes = _____ meter

Width:

_____ cubes = _____ meter

Height:

_____ cubes = _____ meter

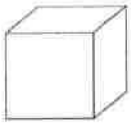
Volume: _____

Solve.

3. A student made a toy chest for his baby sister's square building blocks. Six layers of blocks can fit in the box, and each layer has 15 blocks. How many building blocks can the toy chest hold? Show your work.

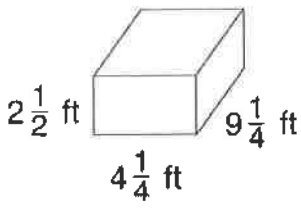
_____

Find the volume of each figure. Show your work. Simplify your answers.

4. 

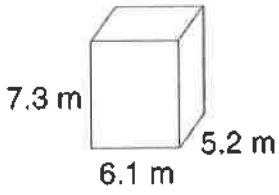
_____

_____

5. 

_____

_____

6. 

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_____

Lewis County Schools

6th Grade

Day 34

34

Name _____

Clauses and Complex Sentences

- A **clause** is a group of words with a subject and a predicate.
- An **independent clause** can stand alone as a sentence.
- A **dependent clause** cannot stand alone as a sentence.
- A **dependent clause** begins with a conjunction such as *wherever, before, while, because, as if,* or *unless.*

Read each group of words. Write I beside each independent clause. Write D beside each dependent clause. Then rewrite each dependent clause so that it is part of a sentence.

_____ 1. Whenever I read a story.

_____

_____

_____ 2. Because I enjoy them.

_____

_____ 3. Jasmine is the most talented writer in our class.

_____

_____ 4. Although she hopes to be a published writer.

_____

_____ 5. Jasmine would like to study communications as well.

_____

_____ 6. Because her grandmother used to tell her folk tales.

_____

_____ 7. She would sit on her grandmother's lap and listen to her great stories.

_____

_____ 8. Jasmine hopes to one day write a story like her grandmother's.

_____

34

Grammar

Name _____ **Complex Sentences**

- A **complex sentence** contains an independent clause and one or more dependent clauses.
- When a dependent clause comes at the beginning of a sentence, use a comma after the dependent clause.
- When a dependent clause comes at the end, a comma is not usually necessary.

Put an X in front of each complex sentence. If the dependent clause comes at the end of the sentence, rewrite the sentence so that the dependent clause comes at the beginning. If the dependent clause comes at the beginning of the sentence, rewrite it so that it comes at the end. (Note: not every sentence is complex.)

_____ 1. While I read, I often listen to soft music.

_____

_____ 2. I have yet to find my folk tale in the library.

_____

_____ 3. I usually carry a book with me wherever I go.

_____

_____ 4. I probably will not be happy until I finish reading every book on my shelf.

_____

_____ 5. My sister is always calling me a book worm.

_____

_____ 6. Before I left for school this morning, I read a tale of a brave knight.

_____

_____ 7. I forgot what time it was until my mother called me.

_____

_____ 8. I find folk tales interesting because of the history in them.

_____

At Home: Ask the student to write a short paragraph on a popular folk tale. It should contain at least two complex sentences.

34

Name _____

Test: Clauses and Complex Sentences

Each question begins with a sentence that, when joined with the correct response, will result in a complex sentence. Circle the letter of your answer. Hint: The correct answer will be a clause.

1. We have an unusual family tradition at our house
   a. every night.
   b. when tired.
   c. that every family should adopt.
2. Every Memorial Day, we have a family fire drill
   a. that my parents carefully organize.
   b. and barbeque.
   c. only once.
3. every person knows what to do and where to go.
   a. Today
   b. If a fire starts,
   c. In this case,

Try making sentences from the different answers. Choose the answer that gives you a complex sentence with correct punctuation. Circle the letter of your answer.

4. Isaac takes little Maria by the hand
   a. first of all.
   b. for safety sake.
   c. before he walks her safely across the street.
5. Everyone meets on the neighbors' lawn
   a. that night.
   b. so we can have a big barbeque.
   c. across the street.

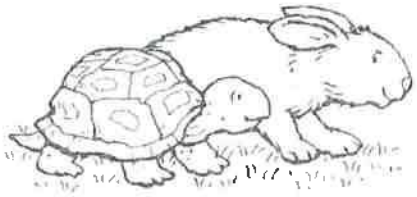
34

Grammar

Name _____

Review: Clauses and Complex Sentences

- A **complex sentence** contains an independent clause and one or more dependent clauses.
- When a dependent clause comes at the beginning of a sentence, use a comma after the dependent clause.
- When a dependent clause comes at the end, a comma is not usually necessary.



Study the picture and think about a folk tale it might describe. Read the following groups of words. Add phrases to turn the four groups of words into four complex sentences. Be sure to use commas correctly in your sentences.

1. Although everyone knew the hare could run very fast

_____

_____

2. Because the tortoise was known for being so slow

_____

_____

3. Because tortoises are patient

_____

_____

4. If the hare became too sure of himself

_____

_____

Day 34 Math

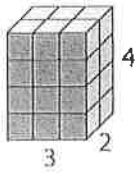
Name _____ Date _____ Class _____

LESSON 15-3

Solving Volume Equations

Reteach

Volume is the number of cubic units needed to fill a space. To find the volume of a rectangular prism, first find the area of the base.



length = 3 units

width = 2 units

$A = lw = 3 \cdot 2 = 6$ square units

The area of the base tells you how many cubic units are in the first layer of the prism.

The height is 4, so multiply 6 by 4.

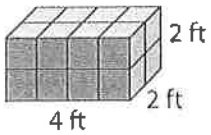
$6 \cdot 4 = 24$

So, the volume of the rectangular prism is 24 cubic units.

Find each volume.

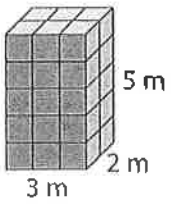
1. $L \times W \times H = V$

$A \times H = V$



$4 \times 2 \times 2 = 16 \text{ ft}^3$

2.



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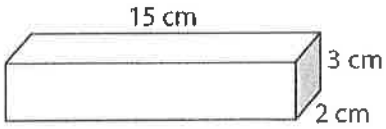

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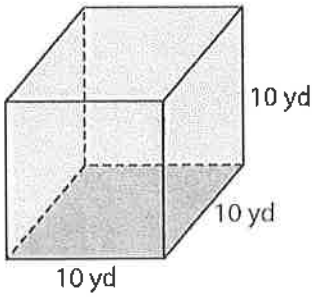
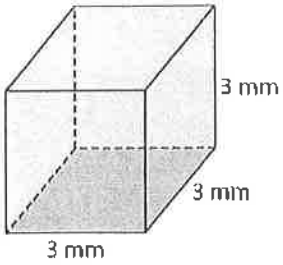


5.



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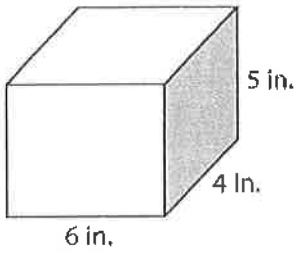


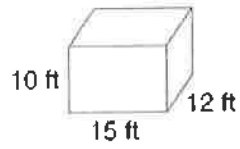
Name _____ Date _____ Class _____ 34

LESSON 15-3

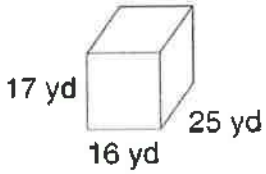
Solving Volume Equations

Practice and Problem Solving: A/B

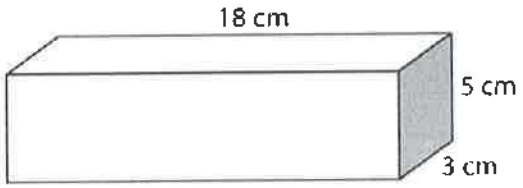
Find the volume of each figure.

1. 

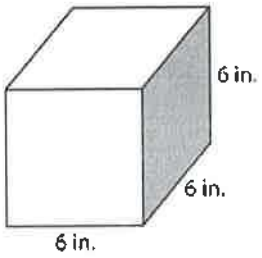
_____

2. 

_____

3. 

_____

4. 

_____

Solve.

5. Fawn built a sandbox that is 6 feet long, 5 feet wide, and $\frac{1}{2}$ foot tall. How many cubic feet of sand does she need to fill the box?

_____

6. A pack of gum is in the shape of a rectangular prism with a length of 8 centimeters and width of 2 centimeters. The volume of the pack of gum is 48 cubic centimeters. What is the height of the pack of gum?

_____

7. A block of cheese is in the shape of a rectangular prism with a width of 2.5 inches and a height of 5 inches. The volume of the block of cheese is 75 cubic inches. What is the length of the block of cheese?

_____

8. A tissue box is in the shape of a rectangular prism with a volume of 528 cubic inches. The length of the box of tissues is 12 inches and the height is $5\frac{1}{2}$ inches. What is the width of the box of tissues?

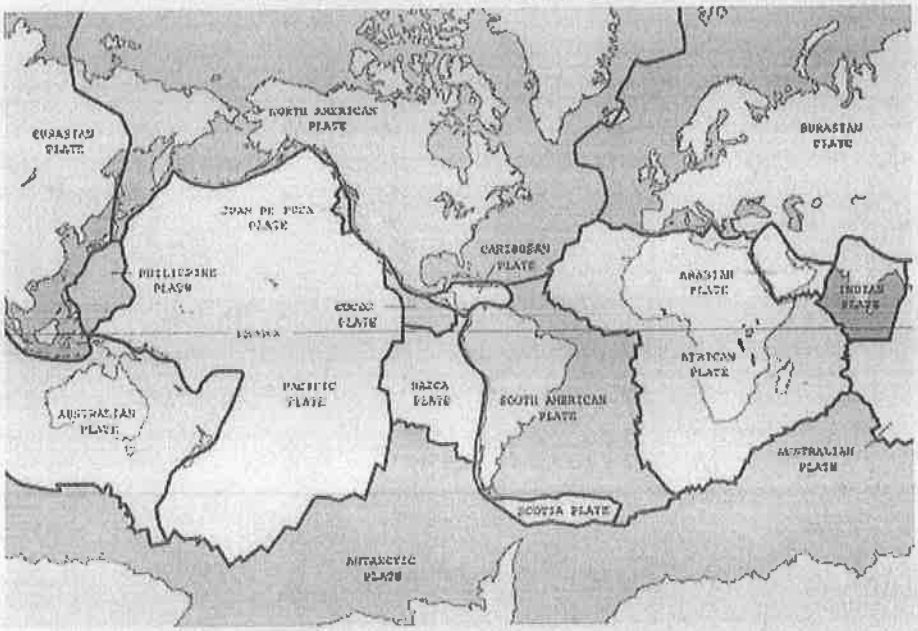
_____

Lewis County Schools

6th Grade

Day 35

Plate Tectonics



As solid as the earth may seem, there are always parts of its crust that are moving at an incredibly slow rate. Since the 1940s and 1950s, steady advancement in technology has allowed geologists to better understand the movement of the earth's plates and how these plates work.

The surface of the earth is made up of several crustal plates. Think of a massive puzzle. Instead of little cardboard cutouts, the puzzle pieces are gigantic slabs of rock that cover the earth. This "puzzle" sits right on top of the mantle's fluid and extremely hot layer, which is made up of several elements, the most prevalent being oxygen, silicon, and magnesium. The crust is divided into two types: oceanic crust and continental crust. As you can guess, the oceanic crust is composed of the pieces that cover the ocean floor, and the continental crust forms our continents.

Oceanic Crust

You may think that the ocean floor is stationary, meaning it doesn't move. However, that's not the case at all. The ocean floor is always moving, though at a very slow rate. In the past, geologists have mapped the ocean floor. By doing so, they discovered a large mountain range that lies underwater in between continents. This mountain range is called the *mid-oceanic ridge*.

As we learned before, the mantle is found directly underneath crustal plates. Since the mantle is made of very hot material, we find "convection currents" within this layer of the earth. Hot material at the deepest part of the mantle rises, then cools once it reaches the surface, then sinks back into the mantle, only to be reheated and rise again, repeating the cycle. Convection currents in the mantle cause the oceanic ridges to rise and form mountains. This is where many scientists say new crust is being generated. The hot magma from the mantle rises up between tectonic plates and spreads outward. So, as this happens, the earth's crust moves very slowly, carrying the continents with it. How slowly? Scientists measure the "spreading rate" in units of millimeters per year, with the faster rates measuring about 80 to 120 millimeters per year.

Types of Boundaries

Convergent boundaries are points at which tectonic plates move into one another. This can result in the formation of mountain ranges (like the Himalayas) as continental plates push against one another. Or it can result in something called subduction, where one plate rises over another as they collide, and the other sinks underneath. This also can form a mountain range, just in a different process. The plate that slowly slips underneath the other plate then melts in the mantle.

Divergent boundaries, on the other hand, are boundaries at which plates are pushed away from one another. These occur both in the ocean and on land. In the ocean, hot magma from within the earth rises out from deep-sea trenches where the plates are pushed farther away from each other. On land, plates are pulled apart as part of a chain reaction beginning with the movements happening in the ocean. The Great Rift Valley in Africa is an example of this. If the plates continue to be pulled apart there, eastern Africa can split from the continent to form a new landmass. But that won't take place for millions of years since the process happens so slowly.

The last type is a transform boundary, one that involves plates sliding against each other. The San Andreas Fault in California is an example of this. The motion of tectonic plates sliding against one another can sometimes cause earthquakes, some quite large and devastating. Transform boundaries are also called strike-slip faults due to the motion they make. This type of relatively fast plate movement that causes earthquakes is the only one we can really feel. Since the other plate shifts are so slow and gradual, we don't feel them.

Pangaea

Scientists have discovered that our continents were not always the same shape or in the locations they are in now. Our continents have changed and drifted closer together or farther apart over the course of billions of years. The most recent time when all the continents were part of the same landmass happened about 300 million years ago. Scientists have named this huge landmass Pangaea, calling it a "super-continent." It existed when dinosaurs roamed our planet. Seventy million years later, Pangaea started to shift apart. When this happened, it broke into two pieces: Laurasia and Gondwana. Laurasia later broke up into Eurasia and North America, while Gondwana separated into Australia, South America, Africa, and Antarctica to make our earth look like it does today. And since our continents are still drifting, it is very possible that we will have another super-continent hundreds of millions of years from now.

What information supports all of this? If you look closely at a map of the earth, you can kind of see where the continents possibly used to fit together. South America looks like it could slide right into Africa and the two would fit together. So scientists began to speculate. But it wasn't enough to assume our continents were once a single landmass just because they look like they could fit together. Therefore, scientists began looking at fossils on different continents. They found similar fossils on Australia and southern Asia. They also found that there were very similar types of rock on the western coast of Africa and the eastern coast of South America. The support lay in the fossils of the animals and plants on the different continents. We can only wonder what the earth will look like in another hundred million years!

Name: _____ Date: _____

1. What are the two types of crust on the earth's surface?

A. continental and silicon

B. transform and oceanic

C. oceanic and continental

D. divergent and convergent

2. What does the author compare the earth's surface to?

A. dinner plates

B. a massive puzzle

C. the ocean

D. an earthquake

3. Crustal movements can be dangerous to humans.

What evidence from the text supports this conclusion?

A. Plate movement at transform boundaries can sometimes cause earthquakes, some quite large and devastating.

B. Plate movement at convergent boundaries can result in the formation of mountain ranges like the Himalayas.

C. The spreading rate of some continents can reach 120 millimeters per year.

D. As solid as the earth may seem, there are always parts of its crust moving at incredibly slow rates.

4. Crustal movements in one location can affect locations far away.

What evidence from the text supports this conclusion?

A. Steady advancement in technology has allowed geologists to better understand plate tectonics.

B. The mantle is made up of elements like oxygen, silicon, and magnesium.

C. Geologists mapped the ocean floor and discovered the mid-oceanic ridge.

D. Divergent boundaries in the ocean create a chain reaction that pulls plates apart on land.

5. What is the main idea of this text?

A. Pangaea was a "super-continent" that existed about 300 million years ago.

B. Plate tectonics cause the earth's surface to shift and change in various ways.

C. Scientists discovered similar fossil types and rock types on different continents.

D. Crustal movements create convergent, divergent, and transform boundaries.

6. Read this sentence from the text.

"As you can guess, the oceanic crust is composed of the pieces that cover the ocean floor, and the continental crust forms our continents."

As used in the text, what does the word "composed" mean?

A. studied

B. divided

C. made up

D. shifted

7. Choose the answer that best completes the sentence.

The continents are slowly but constantly changing in location. _____, the continents used to form a single landmass called Pangaea but gradually drifted apart.

A. For example

B. Currently

C. Including

D. Above all

8. What are convection currents?

9. How do convection currents help form underwater mountains?

10. Explain two ways in which changes on the earth's surface are connected to changes below the earth's surface.

Support your answer with evidence from the text.

Day 35 Math

Name _____ Date _____ Class _____

LESSON 6-2

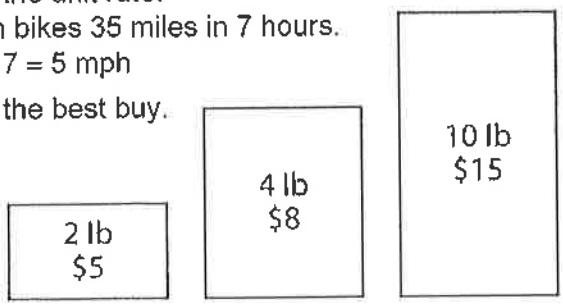
Rates

Reteach

You can divide to find a unit rate or to determine a best buy.

A. Find the unit rate.
Karin bikes 35 miles in 7 hours.
$35 \div 7 = 5$ mph

B. Find the best buy.



$5 \div 2 = \$2.50$ per lb

$8 \div 4 = \$2.00$ per lb

$15 \div 10 = \$1.50$ per lb

BEST BUY!

Divide to find each unit rate. Show your work. (Per 1 thing)

1. Jack shells 315 peanuts in 15 minutes. _____

$\frac{315}{15} = \frac{21}{1}$ (÷15) → 21 peanuts per minute

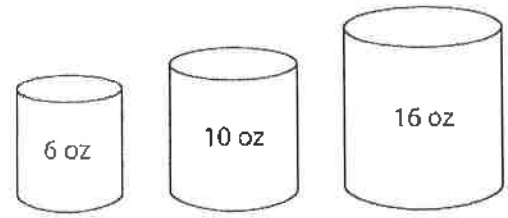
$15 \overline{)315}$ → 30 → 15 → 15

2. Sharmila received 81 texts in 9 minutes. _____

3. Karim read 56 pages in 2 hours. _____

Find the best buy. Show your work.

4.



$0.90 | $1.10 | $1.44

_____

_____

5.

Bread	Weight (oz)	Cost ($)
Whole wheat	16	2.24
Pita	20	3.60
7-grain	16	2.56

_____

_____

_____

_____

Day 35 Math

Name ______________________ Date ______________ Class ______________

LESSON 6-2

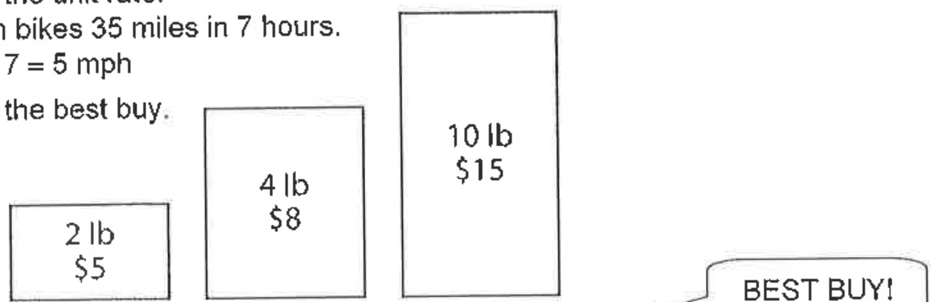
Rates

Reteach

You can divide to find a unit rate or to determine a best buy.

A. Find the unit rate.
Karin bikes 35 miles in 7 hours.
35 ÷ 7 = 5 mph

B. Find the best buy.



5 ÷ 2 = $2.50 per lb   8 ÷ 4 = $2.00 per lb   15 ÷ 10 = $1.50 per lb

Divide to find each unit rate. Show your work. (Per 1 thing)

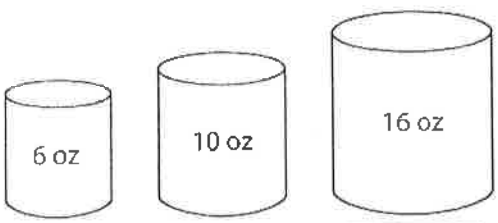
1. Jack shells 315 peanuts in 15 minutes. 315/15 ÷15 = 21/1 (21 peanuts per minute)

2. Sharmila received 81 texts in 9 minutes. ______________________

3. Karim read 56 pages in 2 hours. ______________________

Find the best buy. Show your work.

4.



$0.90 $1.10 $1.44

____

____

5.

Bread	Weight (oz)	Cost ($)
Whole wheat	16	2.24
Pita	20	3.60
7-grain	16	2.56

____

____

____

____

Lewis County Schools

6th Grade

Day 36

34

Name _____

Run-On Sentences

- A **run-on sentence** joins together two or more sentences that should be written separately.
- You can correct a run-on sentence by separating two complete ideas into two sentences.

Put an X in front of each run-on sentence. Then correct the sentences in the space provided.

____ **1.** The kiwi bird is a strange-looking animal it is part of a group of endangered species.

_____

_____

____ **2.** These animals have died or been killed in such large numbers that there are very few left.

_____

_____

____ **3.** The kiwi's body is covered with fluffy feathers unlike other birds, the kiwi has no tail.

_____

_____

____ **4.** Kiwis are the size of a chicken their eggs are as large as ostriches' eggs!

_____

_____

____ **5.** The kiwi's "cousin," the dodo bird, is already extinct.

_____

____ **6.** There are no dodos left anywhere in the world no other dodos will ever be born.

_____

_____

At Home: Have the student write four run-on sentences and then rewrite each one as two separate sentences.

36

Name _____

Run-On Sentences

- A **run-on sentence** may be rewritten as a compound or complex sentence or separated into two sentences.

Read these sentences. If the sentence is correct, write C on the line next to it. If it is a run-on sentence, write R. Rewrite each run-on sentence.

____ **1.** The platypus has feet like a duck's.

_____

____ **2.** Many scientists have studied the platypus dark brown fur covers its body.

_____

_____

____ **3.** Platypuses live on land, although these odd animals also swim very well.

_____

____ **4.** The female platypus lays eggs the mother sits on the eggs like a bird.

_____

_____

____ **5.** The platypus has survived for millions of years many scientists call it a living fossil.

_____

_____

____ **6.** Unlike ducks platypuses have bills that are soft and feel for food underwater.

_____

_____

____ **7.** Australia is the home of the platypus it prefers fresh water to the salt water that surrounds the island.

_____

_____

At Home: Have the student revise his or her sentences again, this time using different methods.

Name _____

Test: Run-On Sentences

Rewrite each run-on sentence, adding the punctuation and conjunctions shown in parentheses.

1. The Florida manatee has been one of the most protected animals on earth it may now be in danger. (Add a comma and the conjunction *but*.)

_____

_____

2. The marine mammal is listed as endangered is protected by the federal Marine Mammal Act. (Add a comma and the conjunction *and*.)

_____

_____

3. Scientists with the Florida Fish and Wildlife Commission may reevaluate the protected status of the manatee the commission plans to act soon. (Add a semicolon.)

_____

_____

_____

4. Recreational boaters in Florida believe the manatee population has increased enough environmentalists disagree. (Add a semicolon, a comma and the conjunction *however*.)

_____

_____

_____

5. Manatee lovers admit that the populations have increased in some areas populations in other areas are low. (Add a comma and the conjunction *but*.)

_____

_____

_____

Grammar

Name _____

Review: Run-On Sentences

- A **run-on sentence** joins together two or more sentences that should be written separately.

Rewrite these run-on sentences using correct punctuation and capitalization.

1. the sea horse has two skeletons one is inside, and one is outside

_____

_____

2. the tail of the sea horse is very important it uses its tail to grip or hold on to things

_____

_____

3. this tiny animal can hang like a monkey it can swim in an upright position

_____

_____

4. the mother sea horse lays her eggs in the father's pouch the father cares for the eggs

_____

_____

5. sea horses are used to make medicine that means the species is at risk

_____

_____

6. black bears are carnivores eat very little meat live on grass fruits berries nuts.

_____

_____

Day 36 Math

Name _____ Date _____ Class _____

LESSON 8-3

Solving Percent Problems

Reteach

You can use this proportion to solve percent problems.

$$\frac{\text{part}}{\text{total}} = \frac{\text{percent}}{100}$$

9 is what percent of 12?

Think: part unknown total

The number following "of" is the total.

30% of what number is 24?

Think: percent unknown part

$$\frac{9}{12} = \frac{x}{100}$$
$$12 \cdot x = 9 \cdot 100$$
$$12x = 900$$
$$\frac{12x}{12} = \frac{900}{12}$$
$$x = 75$$

So, 9 is 75% of 12.

$$\frac{24}{x} = \frac{30}{100}$$
$$30 \cdot x = 24 \cdot 100$$
$$30x = 2{,}400$$
$$\frac{30x}{30} = \frac{2{,}400}{30}$$
$$x = 80$$

So, 30% of 80 is 24.

Solve.

1. What percent of 25 is 14?

   a. part = 14

   b. total = 25

   c. percent = ? 56%

   d. Write and solve the proportion.

   $\frac{\text{Part}}{\text{Total}}$ $\frac{14}{25} \xrightarrow{\times 4} \frac{56}{100}$ $\frac{\text{Percent Part}}{\text{Percent Total (Always 100)}}$

   Answer: _____ % of 25 is 14.

2. 80% of what number is 16?

   a. part = _____

   b. total = _____

   c. percent = _____

   d. Write and solve the proportion.

   Answer: 80% of _____ is 16.

3. What percent of 20 is 11? _____

4. 18 is 45% of what number? _____

5. 15 is what percent of 5? _____

6. 75% of what number is 105? _____

Name _____ Date _____ Class 36

LESSON 8-3

Solving Percent Problems

Practice and Problem Solving: A/B

Solve.

1. 22 students is ____% of 55.
2. 24 red marbles is 40% of ____ marbles.
3. 15% of $9 is $_____.
4. 12 is _____ % of 200.
5. Yesterday, Bethany sent 60 text messages. She said that 15% of those messages were to her best friend. How many text messages did Bethany send to her friend yesterday?

_____

6. In a survey, 27% of the people chose salads over a meat dish. In all, 81 people chose salads. How many people were in the survey?

_____

7. The sales tax on a $350 computer is $22.75. Find the sales tax rate.

_____

Use the circle graph to complete Exercises 8–12.

8. If 6,000 people voted in the election, how many were from 18 to 29 years old?

_____

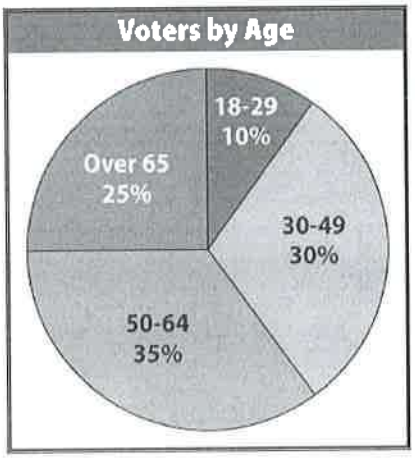
9. If 12,000 people voted in the election, how many were from 50 to 64 years old?

_____

10. If 596 people voted in the election, how many were over 65 years old?

_____

11. Suppose that Sahil knows that 45 people with ages of 18 to 29 voted. Without using a calculator, he quickly says then 135 people with ages of 30 to 49 voted. Is he correct? How might Sahil have come up with his answer so quickly?



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_____

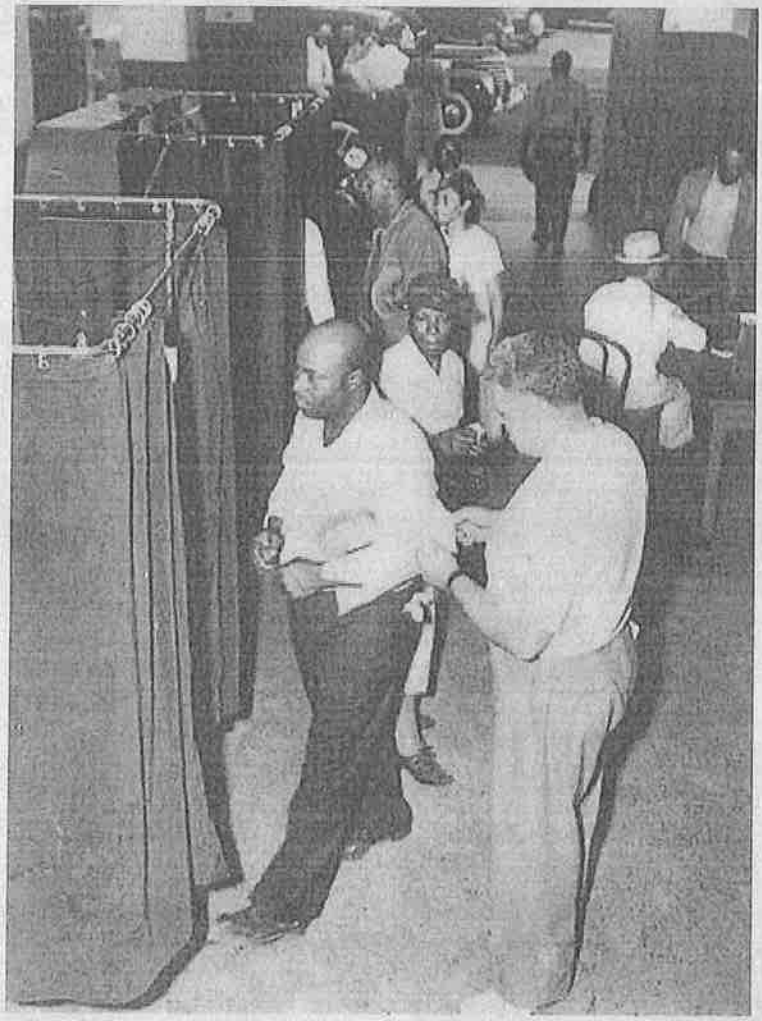
Lewis County Schools

6th Grade

Day 37

The History and Process of Voting

by Ben's Guide to the U.S. Government



voting booths in U.S., 1945

Any U.S. citizen who is at least 18 years old, and who meets certain requirements, can vote in federal elections. This has not always been the case. When the United States first won its independence, there were restrictions on who could vote. In some states, only white male landowners that were at least 21 years old could vote. Beginning in 1870, a series of Constitutional Amendments and other laws have extended voting privileges to more and more citizens.

- The Fifteenth Amendment (Amendment XV) was ratified (or officially adopted) on February 3, 1870. It gave African-American men the right to vote by declaring that the "right of citizens of the United States to vote shall not be denied or abridged by the United States or by any state on account of race, color, or previous condition of servitude."

- The Nineteenth Amendment (Amendment XIX) was ratified on August 18, 1920. It guarantees the right to vote to all American women by declaring that "the right of citizens of the United States to vote shall not be denied or abridged by the United States or by any State on account of sex."

- The Voting Rights Act of 1965 (Public Law 89-110) became effective on August 6, 1965. It enforced the Fifteenth Amendment and outlawed discriminatory voting practices.

- The Twenty-sixth Amendment (Amendment XXVI) was ratified on July 1, 1971. It lowered the voting age from 21 to 18 and declared that "the right of citizens of the United States, who are eighteen years of age or older, to vote shall not be denied or abridged by the United States or by any State on account of age."

It took a long time and a lot of hard work to extend the right to vote to every adult citizen in the United States. That's why it is every eligible American citizen's civic responsibility to vote. In order to vote, you must first be registered. Requirements for registration and registration deadlines change depending on where you live in the U.S.

Registration forms can be obtained from local election officials in your county, from your state's election office, or through voting advocacy groups. You can also register to vote at motor vehicle or driver's licensing offices, Armed Forces recruitment offices, or state agencies that provide public assistance services. Many states offer registration opportunities at public libraries, public high schools and universities, and post offices.

The from the United States Election Assistance Commission (EAC) allows you to register to vote from anywhere in the United States. The forms on the EAC site have specific information in several languages about voter registration for each state. Can you find the instructions for your state?

Name: _____ Date: _____

1. Who can vote in Federal elections?

A. any U.S. citizen who is at least 18 years old and meets certain requirements

B. any U.S. resident who is at least 18 years old and meets certain requirements

C. any U.S. citizen who is at least 16 years old and meets certain requirements

D. any U.S. resident who is at least 16 years old and meets certain requirements

2. The text discusses the extension of voting rights in the United States. What was the sequence of their extension?

A. Voting rights were given to all American women, then to African-American men, and then to citizens of the United States who are 18 years of age or older.

B. Voting rights were given to all American women, then to citizens of the United States who are 18 years of age or older, and then to African-American men.

C. Voting rights were given to African-American men, then to all American women, and then to citizens of the United States who are 18 years of age or older.

D. Voting rights were given to African-American men, then to citizens of the United States who are 18 years of age or older, and then to all American women.

3. Read these sentences from the text:

"When the United States first won its independence, there were restrictions on who could vote. In some states, only white male landowners that were at least 21 years old could vote. Beginning in 1870, a series of Constitutional Amendments and other laws have extended voting privileges to more and more citizens."

What evidence in the text supports the statement that "a series of Constitutional Amendments and other laws have extended voting privileges to more and more citizens"?

A. Requirements for voter registration and registration deadlines change depending on where you live in the U.S.

B. You can register to vote at motor vehicle or driver's licensing offices and Armed Forces recruitment offices.

C. The National Mail Voter Registration Form from the United States Election Assistance Commission allows you to register to vote from anywhere in the United States.

D. The Nineteenth Amendment, ratified in 1920, guaranteed the right to vote to all American women.

4. Read these sentences from the text: "The Voting Rights Act of 1965 (Public Law 89-110) became effective on August 6, 1965. It enforced the Fifteenth Amendment and outlawed discriminatory voting practices."

Based on this information, what can you infer about the Fifteenth Amendment before the Voting Rights Act?

A. The Fifteenth Amendment was popular with a lot of U.S. citizens who were under the age of 21.

B. The Fifteenth Amendment was unpopular with a lot of U.S. citizens who were under the age of 21.

C. The Fifteenth Amendment was not being completely obeyed.

D. The Fifteenth Amendment was being completely obeyed.

5. What is a main idea of this text?

A. The Twenty-sixth Amendment, ratified in 1971, lowered the voting age from 21 to 18.

B. The right to vote in the United States was slowly extended to more and more citizens.

C. Many states offer voter registration opportunities at public libraries and post offices.

D. When the United States was founded, only white male landowners that were at least 21 years old could vote in some states.

6. Read these sentences from the text:

"It took a long time and a lot of hard work to extend the right to vote to every adult citizen in the United States. That's why it is every eligible American citizen's civic responsibility to vote."

What does the author probably mean by writing that "it is every eligible American citizen's civic responsibility to vote"?

A. It is the responsibility of every American citizen who can vote to vote.

B. It is the responsibility of every American who works for the government to vote.

C. It is the responsibility of all American voters to respect each other.

D. It is the responsibility of all American voters to think carefully when they are voting.

7. Read these sentences from the text: "It took a long time and a lot of hard work to extend the right to vote to every adult citizen in the United States. That's why it is every eligible American citizen's civic responsibility to vote."

How could the second sentence be rewritten without changing its meaning?

A. Currently, it is every eligible American citizen's civic responsibility to vote.

B. Specifically, it is every eligible American citizen's civic responsibility to vote.

C. Instead, it is every eligible American citizen's civic responsibility to vote.

D. Therefore, it is every eligible American citizen's responsibility to vote.

8. Read this statement from the text: "It took a long time . . . to extend the right to vote to every adult citizen in the United States."

What evidence in the text supports this statement?

9. Why does the author believe "it is every eligible American citizen's civic responsibility to vote"?

10. Argue for or against the author's claim that "it is every eligible American citizen's civic responsibility to vote."

Support your argument with evidence from the text.

Day 37 Math

Name _____ Date _____ Class _____

LESSON 9-3

Order of Operations

Reteach

A mathematical phrase that includes only numbers and operations is called a *numerical expression*.

$9 + 8 \times 3 \div 6$ is a numerical expression.

When you evaluate a numerical expression, you find its value.

You can use the order of operations to evaluate a numerical expression.

Order of operations:

1. Do all operations within *parentheses*.
2. Find the values of numbers with *exponents*.
3. *Multiply* and *divide* in order from left to right.
4. *Add* and *subtract* in order from left to right.

P
E
M
D
A
S

Evaluate the expression.

$60 \div (7 + 3) + 3^2$

$60 \div 10 + 3^2$	Do all operations within parentheses.
$60 \div 10 + 9$	Find the values of numbers with exponents.
$6 + 9$	Multiply and divide in order from left to right.
15	Add and subtract in order from left to right.

Simplify each numerical expression.

2 parenthesis 1. $7 \times (12 + 8) - 6$

Multiply $7 \times$ 20 $- 6$

Subtract 140 $- 6$

134

2. $10 \times (12 + 34) + 3$

$10 \times$ _____ $+ 3$

_____ $+ 3$

_____

3. $10 + (6 \times 5) - 7$

$10 +$ _____ $- 7$

_____ $- 7$

_____

4. $2^3 + (10 - 4)$

_____

5. $7 + 3 \times (8 + 5)$

_____

6. $36 \div 4 + 11 \times 8$

_____

7. $5^2 - (2 \times 8) + 9$

_____

8. $3 \times (12 \div 4) - 2^2$

_____

9. $(3^3 + 10) - 2$

_____

Solve.

10. Write and evaluate your own numerical expression. Use parentheses, exponents, and at least two operations.

_____

Name _____ Date 3rd _____ Class _____

LESSON 9-3

Order of Operations

Practice and Problem Solving: A/B

Name the operation you should perform first.

1. $4 \times 6 - 3$ _____

2. $1 + 8 \div 2$ _____

3. $(2 + 5) - 4^2$ _____

4. $7 \div 7^3 \times 7$ _____

5. $8^2 \div (8 - 4)^2$ _____

6. $-4 + 3^3 \div 5$ _____

Match each expression to its value.

Expression	Value
7. $7 + 8 - 2$	A. 9
8. $9 + (12 - 10)$	B. 40
9. $(20 - 15) \times 2$	C. 12
10. $10 \div 5 + 7$	D. 14
11. $6 + 2 \times 3$	E. 16
12. $(2 \times 4) + 8$	F. 11
13. $14 + 2 \times 0$	G. 13
14. $(5 - 1) \times 10$	H. 10

15. A sixth-grade student bought three cans of tennis balls for $4 each. Sales tax for all three cans was $.95. Write an expression to show the total amount the student paid.

_____

16. The middle-school camera club sold 240 tulip bulbs and 360 daffodil bulbs. Students divided the bulbs into 100 bags to sell at the school fair. Write an expression to show how many bulbs went into each of the 100 bags if students put the same number of each kind of bulb in each bag.

_____

Lewis County Schools

6th Grade

Day 38

Name _____

- A **sentence fragment** does not express a complete thought. You can sometimes correct a sentence fragment by adding a subject or predicate.
- Use a comma before the conjunction in a compound sentence. If there is no conjunction, use a semicolon.
- Use a comma after a dependent clause at the beginning of a sentence.

Rewrite each run-on sentence or sentence fragment using proper capitalization, commas, and end punctuation.

1. scientists study wildlife in order to protect it the study of the cheetah is an example

_____

2. is found mainly in northern Africa

_____

3. its feet have hard pads with sharp edges these special pads help the cheetah to grip the ground

_____

_____

4. the cheetah has been called a natural running machine it is able to reach a speed of 71 miles per hour

_____

_____

5. it may be the fastest animal on Earth we must protect this amazing cat

_____

_____

6. the cheetah is an endangered species it is even extinct in India and northern Africa

_____

_____

At Home: Challenge the student to do the activity again, trying different methods of revision.

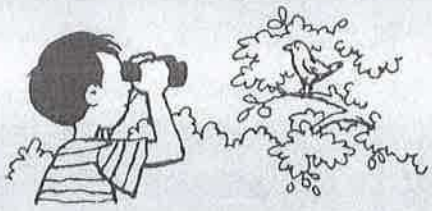
Grammar

Name _____

Proofreading

- A **sentence fragment** does not express a complete thought. You can sometimes correct a sentence fragment by adding a subject or predicate.
- A **run-on sentence** joins together two or more sentences that should be written separately.
- You can correct run-on sentences in three different ways:
  1. Separate two complete ideas in a run-on sentence into two sentences.
  2. Rewrite the run-on sentence as a compound sentence.
  3. Rewrite the run-on sentence as a complex sentence.

Correct any sentence fragments or run-on sentences in the diary entry below. Rewrite the passage with correct punctuation and capitalization.



today I joined a group of students on a bird-watching walk i wanted to see a snail kite because I read that this bird is in trouble the snail kite eats only one thing it eats the meat of the apple snail when builders drain swampland to put up buildings, the apple snails die out. then the snail kites have nothing to eat we must put a stop to putting buildings where endangered animals live

At Home: Invite the student to write a diary entry about a personal experience helping to protect or study wildlife.

Day 38 Math

Name _____ Date _____ Class _____

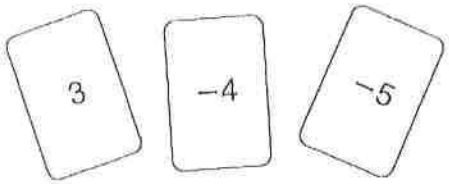
LESSON 1-3

Subtracting Integers

Reteach

The total value of the three cards shown is –6.

$3 + (-4) + (-5) = -6$



What if you take away the 3 card?

Cards –4 and –5 are left. The new value is –9.

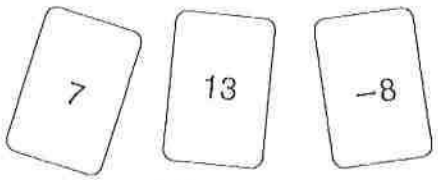
$-6 + -(3) = -9$

What if you take away the –4 card?

Cards 3 and –5 are left. The new value is –2.

$-6 - (-4) = -2$

Answer each question.



1. Suppose you have the cards shown. The total value of the cards is 12.

   a. What if you take away the 7 card? $12 - 7 =$ 5

   b. What if you take away the 13 card? $12 - 13 =$ _____

   c. What if you take away the –8 card? $12 - (-8) =$ _____

2. Subtract. $-4 - (-2)$.

   a. $-4 < -2$. Will the answer be positive or negative? _____

   b. $|4| - |2| =$ _____

   c. $-4 - (-2) =$ _____

Find the difference.

3. $31 - (-9) =$ _____

4. $15 - 18 =$ _____

5. $-9 - 17 =$ _____

6. $-8 - (-8) =$ _____

7. $29 - (-2) =$ _____

8. $13 - 18 =$ _____

Name _____ Date Day 39 Class _____

LESSON 1-3

Subtracting Integers

Practice and Problem Solving: A/B

Show the subtraction on the number line. Find the difference.

1. $-2 - 3$

_____

2. $5 - (-1)$

_____

Find the difference.

3. $-6 - 4$ _____

4. $-7 - (-12)$ _____

5. $12 - 16$ _____

6. $5 - (-19)$ _____

7. $-18 - (-18)$ _____

8. $23 - (-23)$ _____

9. $-10 - (-9)$ _____

10. $29 - (-13)$ _____

11. $9 - 15$ _____

12. $-12 - 14$ _____

13. $22 - (-8)$ _____

14. $-16 - (-11)$ _____

Solve.

15. Monday's high temperature was 6°C. The low temperature was –3°C. What was the difference between the high and low temperatures?

_____

16. The temperature in Minneapolis changed from –7°F at 6 A.M. to 7°F at noon. How much did the temperature increase?

_____

17. Friday's high temperature was –1°C. The low temperature was –5°C. What was the difference between the high and low temperatures?

_____

18. The temperature changed from 5°C at 6 P.M. to –2°C at midnight. How much did the temperature decrease?

_____

19. The daytime high temperature on the moon can reach 130°C. The nighttime low temperature can get as low as –110°C. What is the difference between the high and low temperature?

_____

Lewis County Schools

6th Grade

Day 39

3a

Not Scared ... Prepared

by Valerie Havas

Many people help out during emergencies.

Sometimes news headlines are scary. Hearing about tornadoes, bird flu, war, and events such as Hurricane Katrina can make you feel worried.

But there are reasons to relax. Now more than ever, many people-from individuals to government officials-are working to prepare for and respond to disasters. Here is a description of who does what.

First Responders Are Ready

Photos.com

You may feel sad, helpless, or confused after going through a disaster. It's normal to have many different emotions.

The first people to respond to disasters are often police officers, firefighters, or emergency medical technicians (EMTs). First responders are trained to give basic emergency medical care. According to the U.S. Department of Labor, an EMT-Basic, also known as an EMT-1, is trained to take care of people both at the scene of an accident and while transporting people by ambulance to the hospital.

Communities Are Involved

As a student, you can help be prepared. So can your school. For example, many schools and other public buildings offer shelter during weather-related emergencies. And some schools regularly stage fire and severe-weather drills.

Students at Pine View Middle School in Land O' Lakes, Fla., for example, sometimes practice evacuating buildings, just as they would during a fire. The school's principal, David Estabrook, is a shelter manager. He received special training. "It's a whole lot of people working together-the Red Cross, the sheriff's office, [and] the school," he says.

States Help Too

States also prepare for emergencies. In Alaska, more than 40 volcanoes have erupted since the 1700s. So the state's Division of Homeland Security and Emergency Management provides Alaskans with tips on dealing with volcanic ash.

Officials in California try to prevent large floods, which could occur if *levees* (walls of earth that help control flooding) in the Sacramento-San Joaquin Delta region break because of an earthquake or a big storm. A few years ago, California's former Gov. Arnold Schwarzenegger declared a state of emergency in that area because of damage from big rainstorms.

Governments are also preparing for possible health-related disasters, such as an outbreak of *avian influenza*, or bird flu. The disease has infected and killed some people in other parts of the world. North American agencies are testing migratory birds and creating response plans in the event that it spreads to this part of the world. A Web site operated by the Department of Health and Human Services (www.flu.gov) offers planning checklists for state and local governments, schools, businesses, healthcare services, and individuals.

A Watching Nation

Many government groups prepare for possible disasters and respond to them.

The Federal Emergency Management Agency (FEMA) was created to help people both before and after disasters. FEMA does everything from helping make sure that buildings are designed to withstand damage to training emergency workers. When Hurricane Katrina hit New Orleans last year, many people criticized FEMA for not responding as well as it could have. There has even been talk of shutting FEMA down and creating a new agency.

Other federal disaster responders include the National Guard and the U.S. Coast Guard. The National Guard is a group that can quickly be activated in the event of a national emergency, such as a hurricane, floods, or a war. The Coast Guard is the nation's oldest agency for protecting U.S. waters. It carries out search-and-rescue missions during and after disasters.

Teens to the Rescue

Some teens train to help during an emergency. For instance, volunteer radio operators, such as 16-year-old Andrea H. of Grayson, Ga., often pitch in. Andrea, a member of the Gwinnett Amateur Radio Emergency Service, sent messages to areas in which Hurricane Katrina had downed traditional phone lines and overwhelmed Internet and cell phone systems. Andrea also helped staff a resource-and-recovery center where groups, including the American Red Cross and the Georgia Division of Family and Children's Services, came together to help evacuees. Andrea explains that training can make it easier to face a disaster: "It's less frightening, knowing you can have a productive role in making the situation better."

Physical education teacher Rob Battista teaches a firefighting class at Ossining High School in New York. Students are introduced to the profession through movies, field trips, guest speakers, and drills. They also try to meet the physical fitness standards of the New York City Fire Department.

Freshman Claire Y., 14, jumped at the chance to learn more about firefighting. "I always wanted to be a firefighter, ever since I was 3," she explains. "I thought it was cool when firefighters were going in to save people as everyone else was running out."

Organizations That Help

Many organizations outside the government help out too. For instance, the American Red Cross responds to more than 70,000 disasters each year, offering food, shelter, and other essential aid. The organization also provides almost half the nation's blood supply. In addition, the Red Cross offers lifesaving courses in first aid and *cardiopulmonary resuscitation (CPR)*. CPR helps restore normal breathing in a person who is unable to breathe. The Red Cross is currently working on creating a better disaster response system. One of the organization's goals is to work with more community groups.

Habitat for Humanity gives volunteer laborers the training and supervision they need to help disaster victims rebuild their homes. Organizations such as the American Society for the Prevention of Cruelty to Animals (ASPCA), the Humane Society, and Noah's Wish train volunteers to rescue animals in times of disaster.

No Need to Worry

Of course, you can't prepare for every kind of disaster, and there's no need to try. After all, there's no reason to fear a tsunami if you live in Kansas or to lose sleep over earthquakes if you don't live near a fault zone. Not every health scare or news story is cause for alarm to you and the people you love. For specific issues that might affect you, though, it's good to know that people are ready, just in case.

39

Name: _____ Date: _____

1. According to the passage, which of the following is the oldest agency for protecting U.S. waters?

A. FEMA

B. Division of Homeland Security

C. Coast Guard

D. EMT-Basic

2. According to the passage, how many disasters do Red Cross volunteers respond to each year?

A. 700

B. 70,000

C. 1,700

D. 2,006

3. Based on the passage, which of the following tips would the state government most likely provide to the people in California?

A. what to do when a volcano erupts

B. what to do to prevent bird flu

C. what to do during a flood

D. what to do during a blizzard

4. Read the following sentence:

"Students at Pine View Middle School in Land O' Lakes, Florida, for example, sometimes practice evacuating buildings, just as they would during a fire."

As used in the passage, **evacuating** means

A. climbing

B. staying inside

C. saving

D. leaving

39

5. This passage is mostly about

A. the ways different people and groups prepare for and respond to emergencies

B. the types of natural disasters that are common in certain areas of the United States

C. the ways different people and groups collect supplies for emergencies

D. the ways Red Cross responds to emergencies

6. According to the passage, what was the Federal Emergency Management Agency created to do?

7. Based on the passage, why do schools most likely hold evacuation drills?

8. The question below is an incomplete sentence. Choose the word that best completes the sentence.

All the news about disasters can be scary, _____ there are many people who are prepared to respond to natural disasters.

A. but

B. so

C. after

D. because

Day 39 Math

Name _____ Date _____ Class _____

LESSON 3-3

Comparing and Ordering Rational Numbers

Reteach

You can write decimals as fractions or mixed numbers. A place value table will help you read the decimal. Remember the decimal point is read as the word "and."

To write 0.47 as a fraction, first think about the decimal in words.

Ones	Tenths	Hundredths	Thousandths	Ten Thousandths
0	4	7		

0.47 is read "forty-seven hundredths." The place value of the decimal tells you the denominator is 100.

$$0.47 = \frac{47}{100}$$

To write 8.3 as a mixed number, first think about the decimal in words.

Ones	Tenths	Hundredths	Thousandths	Ten Thousandths
8	3			

8.3 is read "eight and three tenths." The place value of the decimal tells you the denominator is 10. The decimal point is read as the word "and."

$$8.3 = 8\frac{3}{10}$$

Write each decimal as a fraction or mixed number.

think about the place value of the decimal ends, 61 ends in the hundredths place, which is worth $\frac{1}{100}$, so the denominator is 100.

1. 0.61 $\frac{61}{100}$
2. 3.43 ___
3. 0.009 ___
4. 4.7 ___
5. 1.5 ___
6. 0.13 ___
7. 5.002 ___
8. 0.021 ___

Name _____ Date 39 Class _____

LESSON 3-3

Comparing and Ordering Rational Numbers

Practice and Problem Solving: A/B

Write each fraction as a decimal. Round to the nearest hundredth if necessary.

1. $\frac{3}{8}$ ____

2. $\frac{7}{5}$ ____

3. $\frac{21}{7}$ ____

4. $\frac{5}{3}$ ____

Write each decimal as a fraction or mixed number in simplest form.

5. 0.55 ____

6. 10.6 ____

7. −7.08 ____

Write the numbers in order from least to greatest.

8. 0.5, 0.05, $\frac{5}{8}$ _____

9. 1.3, $1\frac{1}{3}$, 1.34 _____

10. 2.07, $2\frac{7}{10}$, 2.67, −2.67 _____

Solve.

11. Out of 45 times at bat, Raul got 19 hits. Find Raul's batting average as a decimal rounded to the nearest thousandth. _____

12. Karen's batting average was 0.444. She was at bat 45 times. How many hits did she get? _____

13. To have batting averages over 0.500, how may hits in 45 times at bat would Raul and Karen need? _____

14. A car travels at 65 miles per hour. Going through construction, it travels at $\frac{3}{5}$ this speed. Write this fraction as a decimal and find the speed. _____

15. A city's sales tax is 0.07. Write this decimal as a fraction and tell how many cents of tax are on each dollar. _____

16. A ream of paper contains 500 sheets of paper. Norm has 373 sheets of paper left from a ream. Express the portion of a ream Norm has as a fraction and as a decimal. _____

Lewis County Schools

6th Grade

Day 40

40

Name _____ Mechanics

- When a dependent clause comes at the beginning of a sentence, use a comma after the dependent clause.
- When a dependent clause comes at the end, a comma is not usually necessary.

Read the following interview. Rewrite each line, adding commas to the dialogue where they are needed. Remove any unnecessary commas.

REPORTER: When your first novel was published were you nervous?

_____

_____

FAMOUS WRITER: On the contrary I felt elated.

_____

_____

REPORTER: As you work, on your next book do you find yourself writing to please your readers?

_____

_____

_____

FAMOUS WRITER: No, I always write to please myself because I write what I feel, and believe.

_____

_____

_____

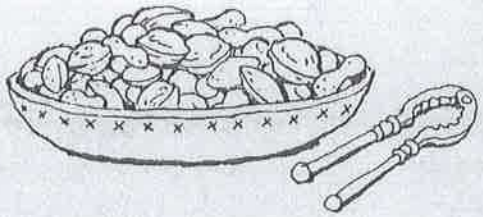
At Home: Challenge the student to write a short poem on a topic of his or her choosing.

Name _____ 40

Proofreading

- A **complex sentence** contains an independent clause and one or more dependent clauses.
- When a dependent clause comes at the beginning of a sentence, use a comma after the dependent clause.
- When a dependent clause comes at the end, you usually do not use a comma.

Rewrite the passage. Draw a line under the complex sentences. Correct the capitalization and punctuation mistakes, adding punctuation as needed.



although every family has its own traditions, ours is my favorite on Sunday nights we all sit around the kitchen table with a bowl of roasted walnuts hazelnuts peanuts, and almonds as we crack the nuts each family member tells one good thing and one bad thing that happened to them that week this family time not only teaches us about each other but also lets us see the many good things in our lives.

At Home: Invite the student to write a paragraph about a family tradition. Tell him or her to use at least two complex sentences.

40

Name _____ Date _____ Class _____

le

LESSON

The smallest number that is a multiple of two or more numbers is called the least common multiple (LCM) of those numbers.

To find the least common multiple of 3, 6, and 8, list the multiples for each number and put a circle around the LCM in the three lists.

Multiples of 3: 3, 6, 9, 12, 15, 18, 21, 24

Multiples of 6: 6, 12, 18, 24, 30, 36, 42

Multiples of 8: 8, 16, 24, 32, 40, 48, 56

So 24 is the LCM of 3, 6, and 8.

List the multiples of each number to help you find the least common multiple of each group.

1. 2 and 9 2. 4 and 6 3. 4 and 10

Multiples of 2: Multiples of 4: Multiples of 4:

_____ _____ _____

Multiples of 9: Multiples of 6: Multiples of 10:

_____ _____ _____

LCM: _____ LCM: _____ LCM: _____

4. 2, 5, and 6 5. 3, 4, and 9 6. 8, 10, and 12

Multiples of 2: Multiples of 3: Multiples of 8:

_____ _____ _____

Multiples of 5: Multiples of 4: Multiples of 10:

_____ _____ _____

Multiples of 6: Multiples of 9: Multiples of 12:

40

LCM: _____ LCM: _____ LCM: _____

7. Pads of paper come 4 to a box, pencils come 27 to a box, and erasers come 12 to a box. What is the least number of kits that can be made with paper, pencils, and erasers with no supplies left over?

Name _____ Date _____ Class 40

LESSON 2-2

Least Common Multiple

Practice and Problem Solving: A/B

List the first three multiples of each number.

1. 3 _____
2. 7 _____
3. 12 _____
4. 200 _____

Find the *least common multiple* (LCM).

5. 2 and 3
   2: _____
   3: _____
6. 4 and 5
   4: _____
   5: _____
7. 6 and 7
   6: _____
   7: _____
8. 2, 3, and 4
   2: _____
   3: _____
   4: _____
9. 5, 6, and 7
   5: _____
   6: _____
   7: _____
10. 8, 9, and 10
    8: _____
    9: _____
    10: _____

Solve.

11. Sixty people are invited to a party. There are 24 cups in a package and 18 napkins in a package. What is the least number of packages of cups and napkins that can be bought if each party guest gets one cup and one napkin?

    _____

12. The science club sponsor is ordering caps and shirts for the boys and girls in the science club. There are 45 science club members. If the caps come in packages of 3 and the shirts come in packages of 5, what is the least number of packages of caps and shirts that will need to be ordered?

    _____

13. Some hot dogs come in packages of 8. Why would a baker of hot dog buns package 7 hot dog buns to a package?

    _____

14. How are the GCF and the LCM alike and different?

    _____

Day 40 Math

Name _____ Date _____ Class _____

LESSON 2-2

Least Common Multiple

Reteach

The smallest number that is a multiple of two or more numbers is called the least common multiple (LCM) of those numbers.

To find the least common multiple of 3, 6, and 8, list the multiples for each number and put a circle around the LCM in the three lists.

Multiples of 3: 3, 6, 9, 12, 15, 18, 21, (24)

Multiples of 6: 6, 12, 18, (24), 30, 36, 42

Multiples of 8: 8, 16, (24), 32, 40, 48, 56

So 24 is the LCM of 3, 6, and 8.

List the multiples of each number to help you find the least common multiple of each group.

1. 2 and 9

   Multiples of 2: 2, 4, 6, 8, 10, 12, 14, 16, (18)

   Multiples of 9: 9, (18), 27, 36, 45

   LCM: 18

2. 4 and 6

   Multiples of 4: _____

   Multiples of 6: _____

   LCM: _____

3. 4 and 10

   Multiples of 4: _____

   Multiples of 10: _____

   LCM: _____

4. 2, 5, and 6

   Multiples of 2: _____

   Multiples of 5: _____

   Multiples of 6: _____

   LCM: _____

5. 3, 4, and 9

   Multiples of 3: _____

   Multiples of 4: _____

   Multiples of 9: _____

   LCM: _____

6. 8, 10, and 12

   Multiples of 8: _____

   Multiples of 10: _____

   Multiples of 12: _____

   LCM: _____

7. Pads of paper come 4 to a box, pencils come 27 to a box, and erasers come 12 to a box. What is the least number of kits that can be made with paper, pencils, and erasers with no supplies left over?

   _____

Lewis County Schools

6th Grade

Day 41

Name: _____ 41

READ THE PASSAGE Think about Marie Marvingt's traits and what made them special for the time period in which she lived.

The Amazing Flying Marie

In October 1909, the cold wind whipped across the English Channel. A 34-year-old French woman strapped on a helmet, stepped into a hot-air balloon, and made history. That was how Marie Marvingt became the first woman to fly a balloon over the English Channel. The following year, she became the third woman in the world to earn her pilot's license.

Marie may have been happier in the air than she was on the ground. She began flying at a time when flying was for either the very brave or the very foolish. Nevertheless, she flew as a bomber pilot and as a reporter in World War I. As a trained nurse, Marie also delivered medical supplies and rescued injured soldiers with her airplane.

In those days, flying was more dangerous than it is now. But Marie knew the risks. Her tiny one-person airplane would rise and drop with the wind, like a bird in a storm. She knew how to take control and steer the airplane through rough weather. Flying through the wind and rain were all part of the adventure of early air travel.

In addition to being a pioneer in aviation, Marie was also one of the longest-flying pilots. At age 80, in 1955, Marie learned how to fly a helicopter. She proved to the world that she could be at home in any aircraft, at any age.

SKILL PRACTICE Read each question. Fill in the bubble next to the correct answer.

1. Which sentence does *not* describe Marie?
   - Ⓐ She was afraid of flying small airplanes.
   - Ⓑ She was a pioneer in aviation.
   - Ⓒ She was happier in the air than on the ground.
   - Ⓓ She was a bomber pilot in the war.

2. Which sentence tells you that Marie was a good pilot?
   - Ⓐ The cold wind whipped across the English Channel.
   - Ⓑ In those days, flying was more dangerous than it is today.
   - Ⓒ Marie knew how to steer the plane through rough weather.
   - Ⓓ Flying was for the brave or the foolish.

3. What is the setting of the first paragraph?
   - Ⓐ Marie's childhood home during World War I
   - Ⓑ a warm, rainy day on a battlefield
   - Ⓒ a cold October day on the English Channel
   - Ⓓ Marie's first day at flight training school

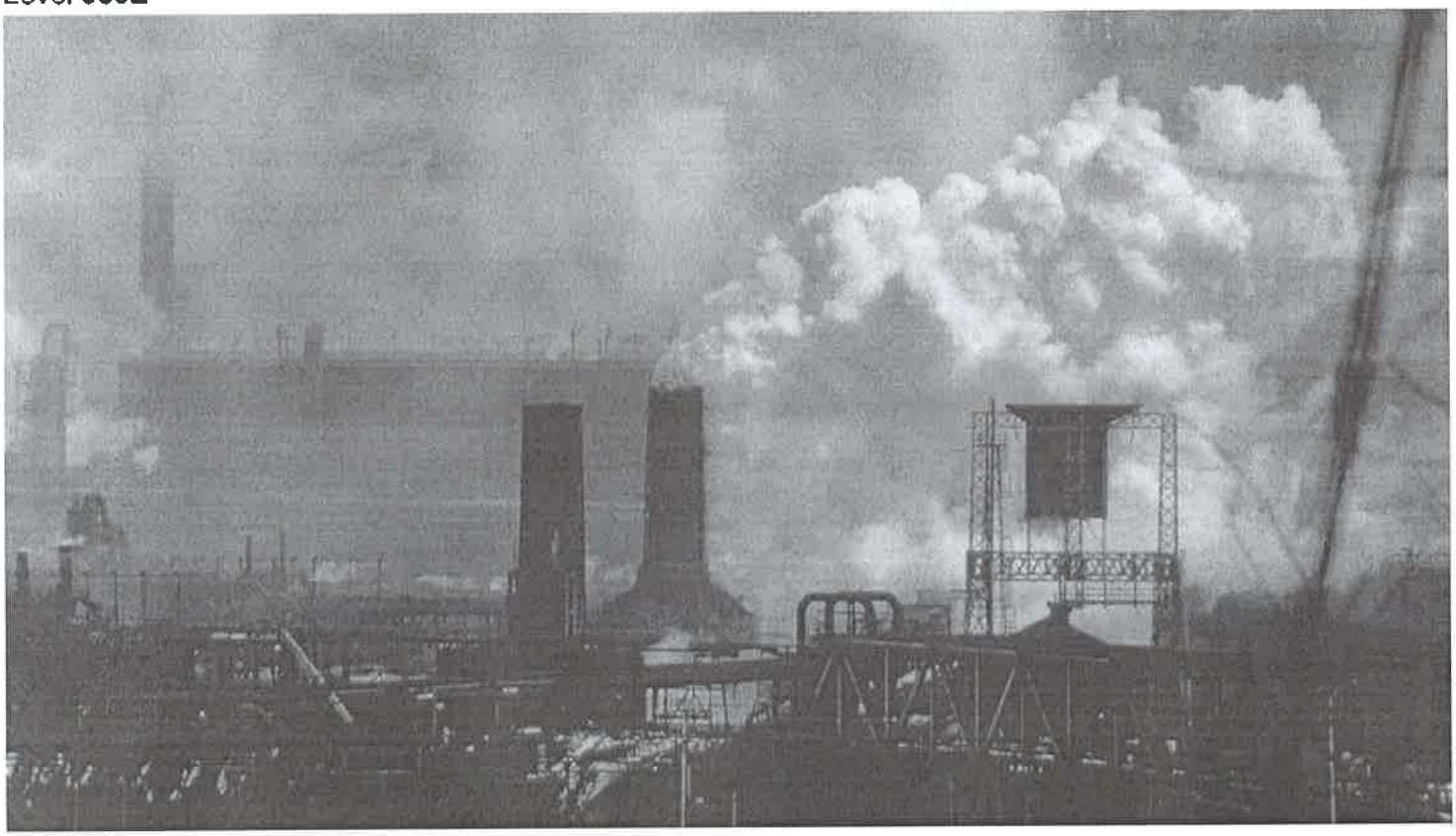
4. Which fact best suggests that Marie flew for a long time?
   - Ⓐ She delivered medical supplies during World War I.
   - Ⓑ She flew a hot-air balloon at age 34.
   - Ⓒ She flew a helicopter at age 80.
   - Ⓓ She was the third woman in the world to earn a pilot's license.

STRATEGY PRACTICE How do you visualize Marie Marvingt? Describe the picture in your mind.

41

The Global Reaction to Water and Air Pollution

By History.com, adapted by Newsela staff on 05.30.17
Word Count **862**
Level **950L**



White plume smoke containing many pollutants is emitted from a quenching tower at a coke plant owned by U.S. Steel Corporation in 1973. The plant previously had been cited for violations of the Clean Air Act which was passed by Congress and is administered by the U.S. Environmental Protection Agency. Photo from U.S. National Archives and Records Administration

Important new technologies were invented during the Industrial Revolution of the mid-1800s. Steam engines powered machines that used to be worked by hand. Economies that used to rely on agriculture became heavily industrial. However, this period also created new sources of air and water pollution. By the middle of the 1900s, countries began to feel the effects of polluted air and water. In the 1960s, an environmental movement was founded in order to stop it. The movement led to the creation of Earth Day, and also to laws like the Clean Air Act and the Clean Water Act.

People have been trying to fight pollution for centuries. In the 1200s, England's King Edward I tried to stop air pollution. He threatened to punish people in London if they didn't stop burning coal. However, the Londoners did not pay attention.

By the first part of the 1800s, factories began burning large amounts of coal to power machines. The smog and soot caused by coal seriously affected people's health. In 1952, pollution from factories and home fireplaces killed at least 4,000 people in London. A few years earlier, in 1948, pollution from local factories created a deadly smog in Donora, Pennsylvania. The smog killed 20

people and made 7,000 more sick. Acid rain was another problem that came from coal-powered plants. The smoke from burning coal creates an acidic rain that poisons plants, fish, soil and forests.

Today, the leading cause of air pollution in the U.S. is motor vehicles. Cars mostly run on gas, which is a fossil fuel. This kind of fuel produces greenhouse gases when burned. Greenhouse gases remain in the atmosphere, where they stop light from going into space. Since the light is trapped, so is its heat. Greenhouse gases therefore cause the temperature on the Earth to rise.

Congress passes the Clean Air Act

In 1963, the U.S. Congress passed the Clean Air Act. The law is designed to limit air pollution. However, in 2007 about 46 percent of all Americans lived in counties with unhealthy levels of either ozone or particle pollution, according to the American Lung Association (ALA). This group keeps track of pollution and informs the public on the health risks.

Ozone, or smog, is an irritating, invisible gas. It is formed when sunlight reacts with fumes from fuel burned by cars and trucks, factories and power plants. Ozone can cause serious health problems, like asthma. The ALA calls particle pollution "the most dangerous and deadly" air pollution. The particles are tiny pieces of ash, soot, diesel exhaust, chemicals and metals. Breathing particle pollution all year can shorten people's lives by 1 to 3 years.

Just like air, water pollution is a large problem as well. For centuries, humans dumped waste into streams and rivers. The polluted water made people sick with diseases like cholera and typhoid. A CNN news report says that 1 gram of human excrement contains about 10 million viruses and 1 million bacteria. Today, over 1 billion people worldwide do not have safe drinking water. Every 15 seconds, a child dies from a disease caused by bad water, says WaterPartners International.

A polluted river in Ohio bursts into flames

The Industrial Revolution made water pollution even worse. Factories began releasing chemicals directly into rivers and streams. In 1969, Ohio's Cuyahoga River burst into flames after waste from factories — known as industrial waste — was dumped into the river. The United Nations says that up to 70 percent of industrial waste is dumped into the rivers and lakes in the developing world. The United Nations is an international group that helps countries work together on global problems.

In China, 70 percent of lakes and rivers are polluted from industrial waste. About 300 million Chinese drink from polluted water sources. This fact was reported by Greenpeace, which keeps track of environmental problems in the world.

Oil on the roads, construction waste and mining are also sources of pollution. They seep into ground water. Livestock wastes, pesticides and fertilizer from farms also get into the water supply. Over half the American population relies on groundwater for drinking water according to the Groundwater Foundation, a group that studies the use of water in the U.S.

Congress passes the Clean Water Act

In 1972, Congress passed the Clean Water Act to reduce water pollution. Today the U.S. has relatively clean, safe drinking water. However, water pollution is still a problem. In 2006, the

Environmental News Service (ENS) reported that more than 62 percent of factories dumped pollution into U.S. waterways. The ENS also said that over 40 percent of American waterways were not safe for swimming and fishing.

Man-made environmental disasters are also a threat to the environment. The Exxon Valdez was an oil tanker. In 1989, it accidentally spilled 11 million gallons of crude oil into the sea off Alaska. The disaster instantly killed hundreds of thousands of birds, fish and other wildlife. It harmed the environment for many years after.

Quiz

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1 Read the introduction [paragraphs 1-4].

Which paragraph BEST describes examples of HOW pollution is harmful to humans?

2 Which of the following sentences from the article BEST supports the idea that the Clean Air Act was necessary?

(A) Steam engines powered machines that used to be worked by hand.

(B) People have been trying to fight pollution for centuries.

(C) A few years earlier, in 1948, pollution from local factories created a deadly smog in Donora, Pennsylvania.

(D) In 2006, the Environmental News Service (ENS) reported that more than 62 percent of factories dumped pollution into U.S. waterways.

3 What effect did the environmental movement of the 1960s have on pollution?

(A) It encouraged changes that led to less pollution.

(B) It punished people who used coal to heat their homes.

(C) It caused the United Nations to help countries fight air and water pollution.

(D) It stopped man-made environmental disasters from happening.

4 What is the MOST likely reason why the author included the story of the Cuyahoga River bursting into flames?

(A) to show how pollution has changed over time

(B) to show how pollution affects human health

(C) to show the effects of the Industrial Revolution on the economy

(D) to show the effects of the Industrial Revolution on the environment

Name: _____ 41

Theme **WEEK 10 DAY 3**

READ THE PASSAGE Think about the main message of the passage.

Prometheus Defeated

In the summer of 1964, a scientist cut down a tree in Nevada. The event started a debate about the importance of scientific study versus protecting the environment. The tree, a bristlecone pine, was the oldest living thing in the world. Some people called the tree "Prometheus," after a tragic hero in Greek mythology. Others knew it as "WPN-114." The two names show how different communities of people felt about the tree.

WPN-114 was likely a seedling around 3100 BC. Scientists knew that the tree was old. They just didn't know how old. But they knew they could find out by examining the tree rings, which form every year inside the trunk. Scientists argued that there was no other way to get valuable information about different time periods long ago. They believed that the knowledge they could gain by cutting down the tree was worth sacrificing it. In fact, scientists did learn a lot.

On the other side of the debate were people who loved the tree as a part of nature. Destroying the tree, they thought, was a horrible mistake. In *The Sierra Club Bulletin,* wilderness photographer Galen Rowell argued that "the wood belonged in the mountains." Friends of the tree used words like *murder* to describe what was done to Prometheus. To them, the knowledge gained by cutting down the tree wasn't worth the loss. They believed that experiencing the tree alive, as the oldest living link to the past, was equally important.

SKILL PRACTICE Read each question. Fill in the bubble next to the correct answer.

1. What is one theme of the passage?
   - Ⓐ Science and nature are sometimes in conflict.
   - Ⓑ Scientists should do their work in labs.
   - Ⓒ People need to agree on names for trees.
   - Ⓓ WPN-114 was the world's oldest tree.

2. What did the scientists believe?
   - Ⓐ The wood belonged on the mountains.
   - Ⓑ The knowledge gained was worth cutting down the tree.
   - Ⓒ Destroying the tree was a horrible mistake.
   - Ⓓ The tree was a link to the past only while alive.

3. What did friends of the tree believe?
   - Ⓐ It was necessary to sacrifice the tree.
   - Ⓑ Bristlecone pines are not really very old.
   - Ⓒ It is important to enjoy living trees.
   - Ⓓ The tree was really named Prometheus.

4. What is the main idea of the first paragraph?
   - Ⓐ People can view the same issue differently.
   - Ⓑ Scientific investigation is always good.
   - Ⓒ Nature is more important than people.
   - Ⓓ Debate kills trees.

STRATEGY PRACTICE How does the author use a compare-and-contrast structure to present the debate?

_____

_____

41

Name _____ Date _____ Class _____

LESSON 16-2

Mean Absolute Deviation

Reteach

The *mean absolute deviation*, or *MAD*, is the average of how far the elements in a data set are from the *mean* of the data set.

If you think of MAD as a distance, it will always be a positive number. For two or more comparable data sets, the larger the MAD is, the more "spread out" the elements of a data set are, such as in the example.

Example

Step 1 Find the mean.

The mean of these two data sets of the number of eggs in 10 nests of two birds of the same species over several breeding cycles:

- Bird *A*: 3, 3, 4, 2, 3, 4, 5, 1, 2, and 2
- Bird *B*: 1, 1, 3, 6, 2, 2, 3, 5, 4, and 1

For Bird *A*: mean = 29 ÷ 10 = 2.9 or about 3 eggs
For Bird *B*: mean = 28 ÷ 10 = 2.8 or about 3 eggs

Step 2 Find the mean absolute deviation. First, find the deviation of each element from the mean by subtracting the element's value from the mean or vice versa. This gives these deviations for the 10 elements in each data set.

Bird *A*: 0.1, 0.1, 1.1, 0.9, 0.1, 1.1, 2.1, 1.9, 0.9, and 0.9
Bird *B*: 1.8, 1.8, 0.2, 3.2, 0.8, 0.8, 0.2, 2.2, 1.2, and 1.8

Then add the deviations for each bird and divide by the number of breeding cycles.

For Bird *A*: MAD = 9.2 ÷ 10 = 0.92
For Bird *B*: MAD = 14 ÷ 10 = 1.4

In this example, the mean number of eggs in each bird's nest is almost the same. However, the mean absolute deviations, or MAD, of the two data sets are different. The number of eggs in Bird *B*'s nests over 10 breeding cycles show more **variability**, or the "number of eggs varied more" than did the number of eggs in Bird *A*'s nests over 10 cycles.

Notice that both MAD values round to one egg. What do you think will happen to these MAD values over a larger number of breeding cycles?

Find the mean absolute deviation by hand calculations or with a spreadsheet program.

1. Data:
   0.1, 0.15, 0.09, 0.11, and 0.13
   mean = 0.116
   MAD: 0.048

2. Data:
   250, 249, 251, 253, and 253
   MAD: _____

First find the mean of the data by adding all #s together & dividing the sum by how many values there are

Then, find how far each value is from the mean by subtracting each # & the mean (largest # first)

.116 - .1 = .116
.15 - .116 = .034
.116 - .09 = .026
.116 - .11 = .006

Then add all of the values together & divide the # of values

.24 ÷ 5
MAD = .048

Name _____ Date _____ Class _____

LESSON 16-2

Mean Absolute Deviation

Practice and Problem Solving: A/B

Find the *mean absolute deviation* for each data set.

1. The number of kittens in 10 litters: 4, 5, 5, 6, 6, 7, 8, 8, 8, and 9

_____

2. The number of approved soy-based containers produced in 10 stamping runs of 240 containers: 225, 227, 227, 228, 230, 230, 231, 238, 238, and 240

_____

3. Two bowlers bowl the following number of strikes in 9 games.

1st bowler	8	5	5	6	8	7	4	7	6
2nd bowler	10	6	8	8	5	5	6	8	9

What is the mean and the mean absolute deviation of the number of strikes of each bowler?

_____

What does the mean absolute deviation suggest about each bowler's consistency?

_____

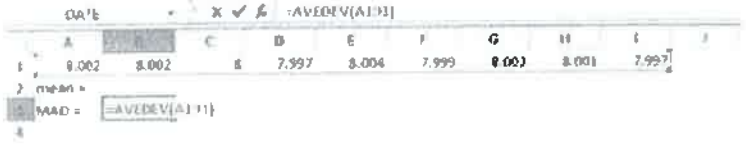
Use a spreadsheet program to complete the problem.

4. A tool manufacturer machines an 8-centimeter brass-alloy spindle for one of its tools. The first table shows the variation in thousandths of a centimeter in nine of the spindles.

Complete the spreadsheet as shown to find the mean spindle length.

Mean: _____

5. Use the spreadsheet to find the mean absolute deviation of the spindle lengths.



MAD: _____

Lewis County Schools

6th Grade

Day 42

Cultural impacts of ancient conquerors

By National Geographic Society, adapted by Newsela staff on 04.02.20
Word Count **700**
Level **830L**

Image 1. A small section from the Bayeux Tapestry showing Odo, half brother to William the Great, cheering his troops forward. The Bayeux Tapestry is a 230-foot long embroidered cloth. It pictures the Battle of Hastings and the events leading up to the Norman Conquest of England. It was probably made by Bishop Odo of Bayeux in the 1000's. Image in the public domain, via Wikimedia Commons.

Lands have changed hands many times throughout the world's history. A conqueror is a great leader. They gather an army and take over land, creating large kingdoms called empires.

NATIONAL GEOGRAPHIC

Conquerors have changed the history of the world.

Alexander The Great

Alexander the Great was born more than 2,300 years ago in 356 B.C. His father was King Philip II of Macedonia, a kingdom in the northern part of Greece. After his father died, Alexander became king at age 20.

Alexander was a strong military leader with good political skills. He used his skills to expand his kingdom. By the time he died at the age of 32, Alexander had conquered a huge empire. His land stretched from Macedonia to Egypt and from Greece to part of India. The entire empire made up

almost 2 million square miles, almost half the size of the United States. He ruled over the largest empire in the ancient world.

Alexander wanted to learn everything. He hired scientists to travel with the army and study his new territories and encouraged his people to live among and marry the people they conquered. He also founded cities, often named Alexandria, as centers of Greek government and learning. The most famous was Alexandria, Egypt. The city would continue as a center of learning long after his death and is still thriving today.

Alexander the Great's conquests spread Greek culture, language and ideas. Historians have named the time period the Hellenistic Age or Period, beginning after Alexander's death in 323 B.C.

Hellenistic culture grew and mixed with local cultures. Great buildings and works of art were created, and philosophers and scientists added to academic advances. The Hellenistic Period came to an end when Roman troops captured the last of Alexander's empire in 31 B.C.

The Norman Conquest

About 1,000 years ago in 1066, King Edward of England died without any children to take his place. His brother-in-law Harold took the throne. William, the duke of Normandy in France, believed he had a better claim to the throne. He gathered an army and launched an attack on England. Harold was killed at the Battle of Hastings, and William was crowned the new king. Six hundred years of Anglo-Saxon rule came to an end. Today, this event is remembered as the Norman Conquest.

The Norman Conquest changed England. William kept careful records of the land in the Domesday Book. He used the book to charge his subjects taxes. William also took land from wealthy English people. He gave the land to Norman nobles who promised to follow him. Finally, William formed the Great Council, a group of nobles and church leaders who helped him make decisions. The Great Council would become what is now called the British Parliament.

The Norman Conquest also influenced English buildings and culture. Normans built castles and soaring cathedrals in England. French was used by lawyers and officials. Even today, the motto on the British Coat of Arms is not in English, but French.

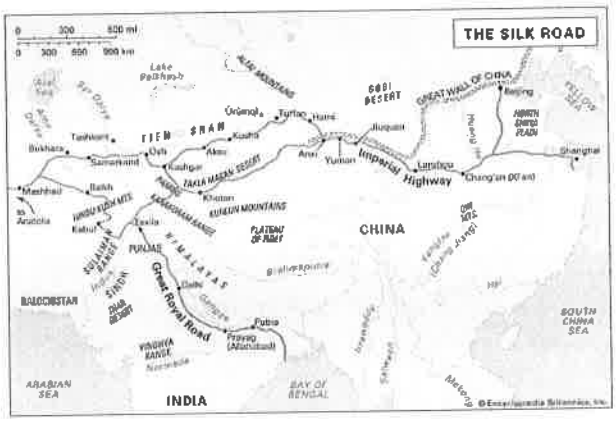
The Mongol Empire

At its peak in the 1300s, the Mongol Empire stretched from China to Eastern Europe. The kingdom was the largest connected empire in world history. The Mongols conquered about nine million square miles, more than twice the size of the U.S.

The Mongols showed no mercy, and the effects of their conquests were felt for hundreds of years. They destroyed watering systems in what is now Iraq and Iran in the Middle East. This ruined farmland and increased fighting in the area.

However, the most lasting result of the Mongol Empire was peace. The Mongol Empire controlled the entire Silk Road, a network of trade routes. The Silk Road extended across Asia and into Europe. Knowledge moved freely, leading to advances in science. Chinese inventions and ideas spread to Europe. European goods and ideas flowed to Asia.

Unfortunately, the Mongols also probably carried the plague, or the Black Death. The deadly illness killed upwards of 25 million people in Europe.



Quiz

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1 This article is MOSTLY organized using chronology.

How would the article be different if it were organized using problem and solution?

(A) It would look at why conquerors started their empires and how they accomplished their goal.

(B) It would give information about empires and how they spread to different areas.

(C) It would give a reason why empires started and what happened because of their creation.

(D) It would describe details about how the conquerors ruled over their empires.

2 This article is MOSTLY organized using chronology.

Why do you think the author chose to organize the information this way?

(A) to help the reader understand how empires work

(B) to show how conquerors gather armies and take over land

(C) to illustrate how some conquerors have changed history

(D) to explain the effects of empires and how they became powerful

3 Examine the four images within the article.

What do the images show about empires?

(A) how Alexander the Great's empire spread from Macedonia

(B) how the empires changed and spread across lands

(C) how the empires developed in the same areas

(D) how conquerers determined where to build an empire

4 Use the four images and information from the article to select the TRUE statement.

(A) Empires still exist today and influence culture.

(B) Empires start in one area but grow and change over time.

(C) Alexander the Great's empire fought in five battles.

(D) The Great Wall of China was under the Mongol Empire's rule.

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Name _____ Date _____ Class _____

LESSON 15-1

Nets and Surface Area

Practice and Problem Solving: A/B

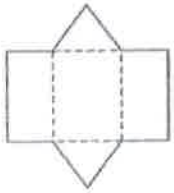
Find the area of each shape then add the areas together to find the surface area.

Square, rectangle, parallelogram $A=bh$ or $A=lw$

Triangle $A=\frac{1}{2}bh$

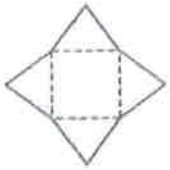
Find the surface area of each net.

1. Each square is one square meter.



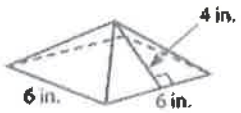
_____ square meters

2. Each square is one square yard



_____ square yards

3. A square pyramid has _____ square base and _____ triangular faces.

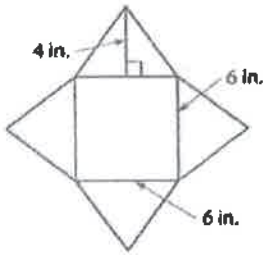


Find its surface area.

a. The area of the base is _____ square centimeters.

b. The area of the four faces is _____ square centimeters.

c. The surface area is _____ square centimeters.



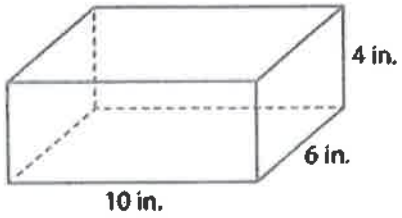
4. Josef makes wooden boxes for jewelry. He made 5 boxes like the one shown, and wants to cover all the outside faces with fabric.

a. Find the surface area of one box.

_____

b. Find the total surface area of 5 boxes.

_____

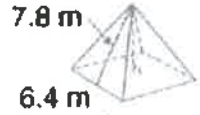


c. The fabric Josef is using comes in 100 square-inch pieces that cost $6.25 each. What will his fabric cost?

_____

Calculate the surface area for each figure.

5. The base is a square.



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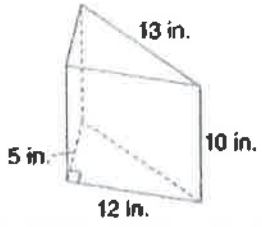
6.



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