2nd Grade
NTI Packet
Day 21

Read

Genre: History Article

Read the history article. Then answer the questions that follow.

Flying Dreams

by Emiliana Gutierrez

1 For thousands of years, people have dreamed of flying. That dream finally came true on December 17, 1903. The Wright brothers flew an airplane powered by a motor.

2 Other inventors had tried and failed. They could not control the plane. When it lost its **balance**, the plane would tip, roll, spin, or dive. How did the Wright brothers solve this problem? They watched things closely. They learned lessons from what they saw. Then they put those lessons to work.

Bike Riders and Birds

3 The brothers learned their lessons from bike riders and birds. They saw how riders **bank**, or lean, when they make a turn. When riders turn left, they lean left. When they turn right, they lean right. The brothers saw that pilots must also bank into turns.

4 Birds also bank when they make a turn. They also bend the tips of their wings. The wings of an airplane must bend, too.

Banking and Bending

5 Banking into turns was not a problem. The pilot could lean left or right, just like a bike rider. But how could the pilot bend the tips of the wings? The brothers solved this problem. They made wings of soft cloth on a wooden frame. The pilot pushed a **pedal** connected to **control wires**. The wires pulled on the wings. The wings bent, just like a bird's wings.

6 That first successful powered flight happened on a windy beach in North Carolina. It lasted only 12 seconds and covered only 127 feet. But nothing like it had ever happened before. History had been made!

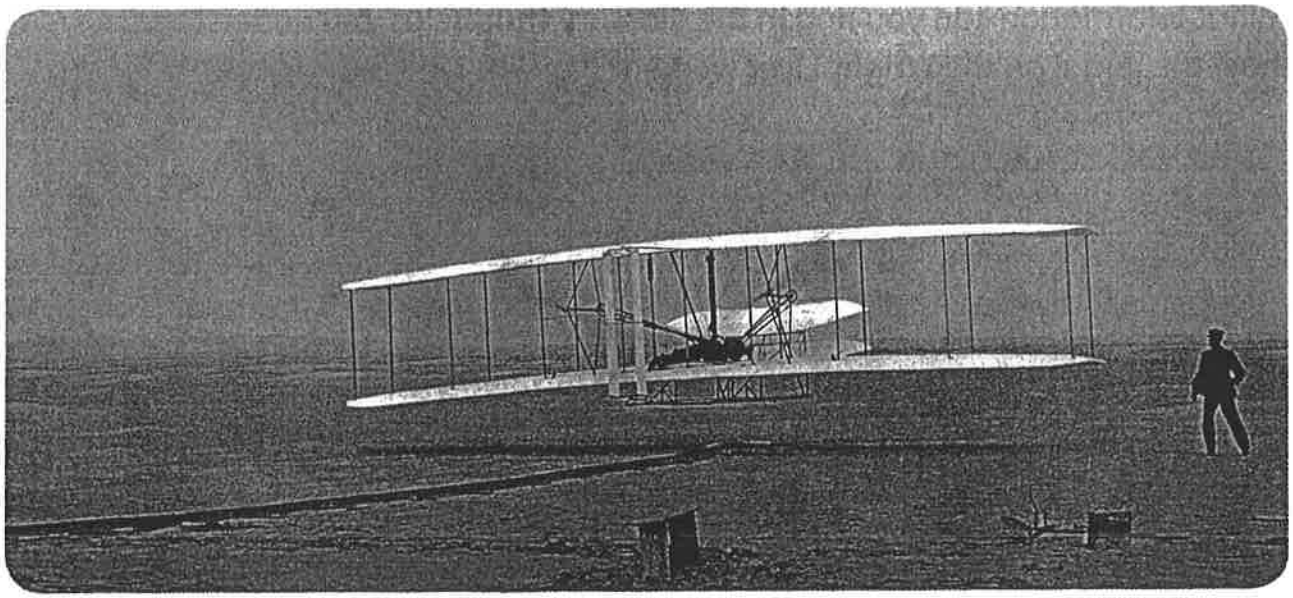
Glossary

balance: being able to move or keep still without falling

bank: to lean sideways in making a turn

control wires: wires connected to the pedal and to the wings of the plane to bend the wings

pedal: a lever pushed by the pilot's foot to make the wings of the plane bend



This photo shows the first flight of the Wright Flyer. Orville Wright is lying on the lower wing at the controls.

Think

1 Read paragraph 2 of the passage.

> **Other inventors had tried and failed. They could not control the plane. When it lost its balance, the plane would tip, roll, spin, or dive. How did the Wright brothers solve this control problem? They watched things closely. They learned lessons from what they saw. Then they put those lessons to work.**

What does the word "inventor" mean?

- **A** someone who sells something new
- **B** someone who teaches something
- **C** someone who creates something new
- **D** someone who tells about something

2 Read the sentences from the passage.

> **The pilot pushed a pedal connected to control wires. The wires pulled on the wings.**

What information can you find in the glossary that helps you understand how the pedal on the Wright Flyer worked?

_____

_____

_____

3 What is the author's main purpose for writing "Flying Dreams"?

- **A** to describe how pilots can make airplanes spin, roll, and dive
- **B** to show what the Wright brothers learned about making airplane motors
- **C** to explain what makes airplanes move like birds in flight
- **D** to tell how the Wright brothers solved problems to help them fly a plane

4 What do you learn from the caption under the photo on page 217?

- **A** which Wright brother built the plane
- **B** which Wright brother flew the plane
- **C** where the Wright brothers' plane is now
- **D** why the Wright brothers flew their plane

5 Which facts are found under each subheading in the passage? Write the letter of the fact in the correct box in the chart.

- **A** The brothers' first flight was just 12 seconds long.
- **B** The brothers studied how bike riders turn.
- **C** The brothers decided that pilots should bank to turn.
- **D** The brothers used a pedal to bend the plane's wings.
- **E** The brothers used cloth for their plane's wings.
- **F** The brothers realized that the wings should bend.

Bike Riders and Birds	**Banking and Bending**

6 Read paragraph 6 from the passage.

That first successful powered flight happened on a windy beach in North Carolina. It lasted only 12 seconds and covered only 127 feet. But nothing like it had ever happened before. History had been made!

Underline the sentence that **best** tells what the word "successful" means in this paragraph.

Unit 3 Interim Assessment 219

Name _____

Three-Dimensional Shapes

Essential Question What objects match three-dimensional shapes?

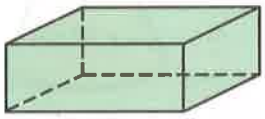
Common Core **Geometry–2.G.A.1**

MATHEMATICAL PRACTICES
MP3, MP6

Listen and Draw

Real World

Draw a picture of an object with the same shape shown.



Math Talk MATHEMATICAL PRACTICES 3

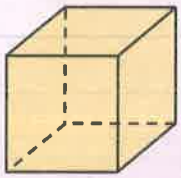
Apply Describe how the shapes are alike. Describe how they are different.

FOR THE TEACHER • Have children look at the first shape and name some real objects that have this shape, such as a cereal box. Have each child draw a picture of a real-life object that has the same shape. Repeat for the second shape.

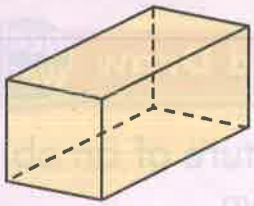
Model and Draw

These are three-dimensional shapes.

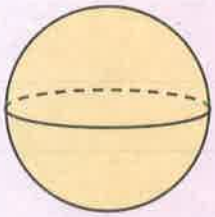
cube



rectangular prism

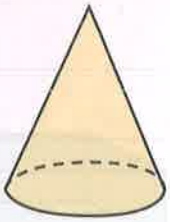


sphere



cylinder

cone



Which of these objects has the shape of a cube?

Share and Show MATH BOARD

Circle the objects that match the shape name.

1. sphere

2. cube

Name _____

On Your Own

Circle the objects that match the shape name.

3. cylinder



4. rectangular prism

5. cone



6. GO DEEPER Julio used cardboard squares as the flat surfaces of a cube. How many squares did he use?

_____ squares

7. THINK SMARTER Circle the shapes that have a curved surface. Draw an X on the shapes that do not have a curved surface.

Math on the Spot





Problem Solving • Applications Real World

WRITE Math

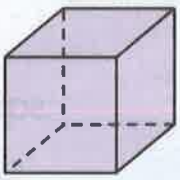
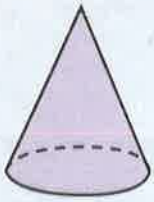
8. MATHEMATICAL PRACTICE 6 **Make Connections**

Reba traced around the bottom of each block. Match each block with the shape Reba drew.






9. THINK SMARTER Match the shapes.

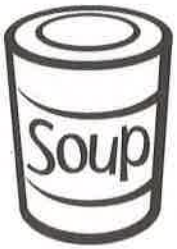
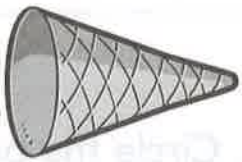
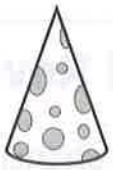
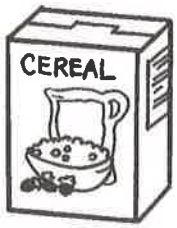

TAKE HOME ACTIVITY • Ask your child to name an object that has the shape of a cube.

Name _____

Three-Dimensional Shapes

Common Core **COMMON CORE STANDARD—2.G.A.1**
Reason with shapes and their attributes.

Circle the objects that match the shape name.

1. cube			
2. cone			
3. rectangular prism			

Problem Solving

4. Lisa draws a circle by tracing around the bottom of a block. Which could be the shape of Lisa's block? Circle the name of the shape.

cone cube rectangular prism

5. WRITE Math Describe one way that a cube and a cylinder are alike. Describe one way they are different.

_____

Lesson Check (2.G.A.1)

1. What is the name of this shape?

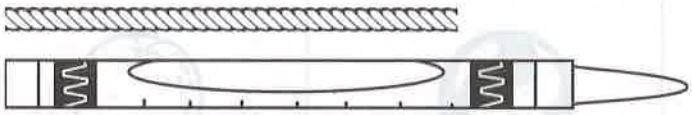
_____

2. What is the name of this shape?

_____

Spiral Review (2.MD.A.3, 2.MD.C.7, 2.MD.C.8)

3. The string is about 6 centimeters long. Circle the best estimate for the length of the crayon.



3 centimeters 9 centimeters 14 centimeters

4. What is the total value of this group of coins?

_____

5. What time is shown on this clock?

_____ : _____

FOR MORE PRACTICE GO TO THE Personal Math Trainer

2nd Grade
NTI Packet
Day 22

Read

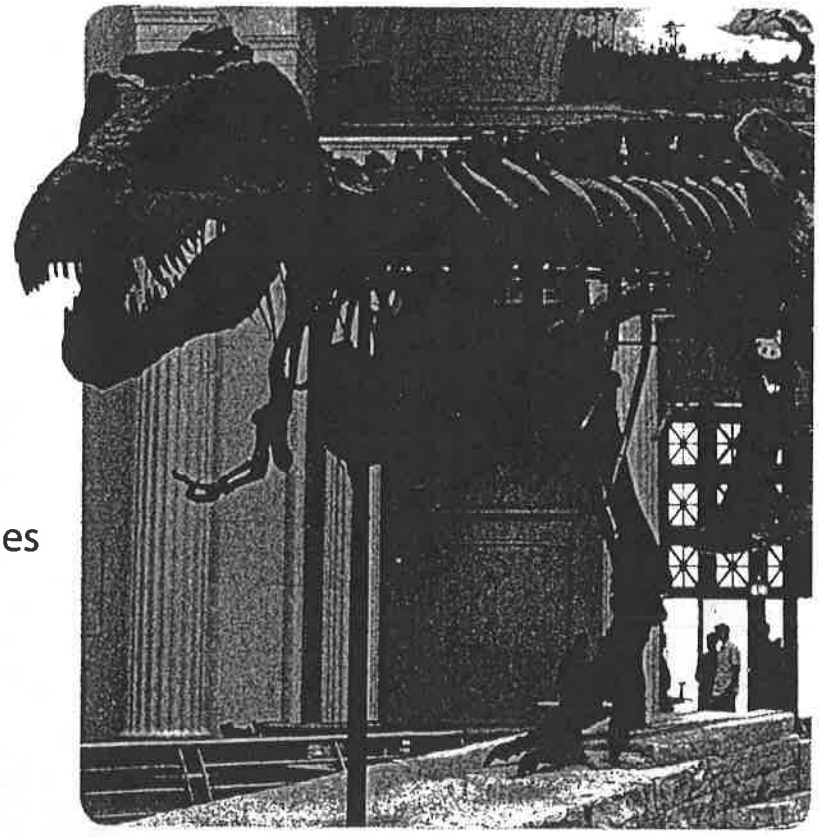
Genre: Science Article

Read the science article. Then answer the questions that follow.

Sue the Dinosaur

by Richard T. Banks

1 Very long ago, a *T. rex* dinosaur died. Sand and mud covered its body. Slowly, the bones turned to rock. They became fossils. The bones stayed covered for a long time. Then wind and water slowly ate away at the earth. Some of the bones poked out of the ground.



Sue is a *T. rex*. The skeleton can be seen at the Field Museum in Chicago.

How Sue Was Found

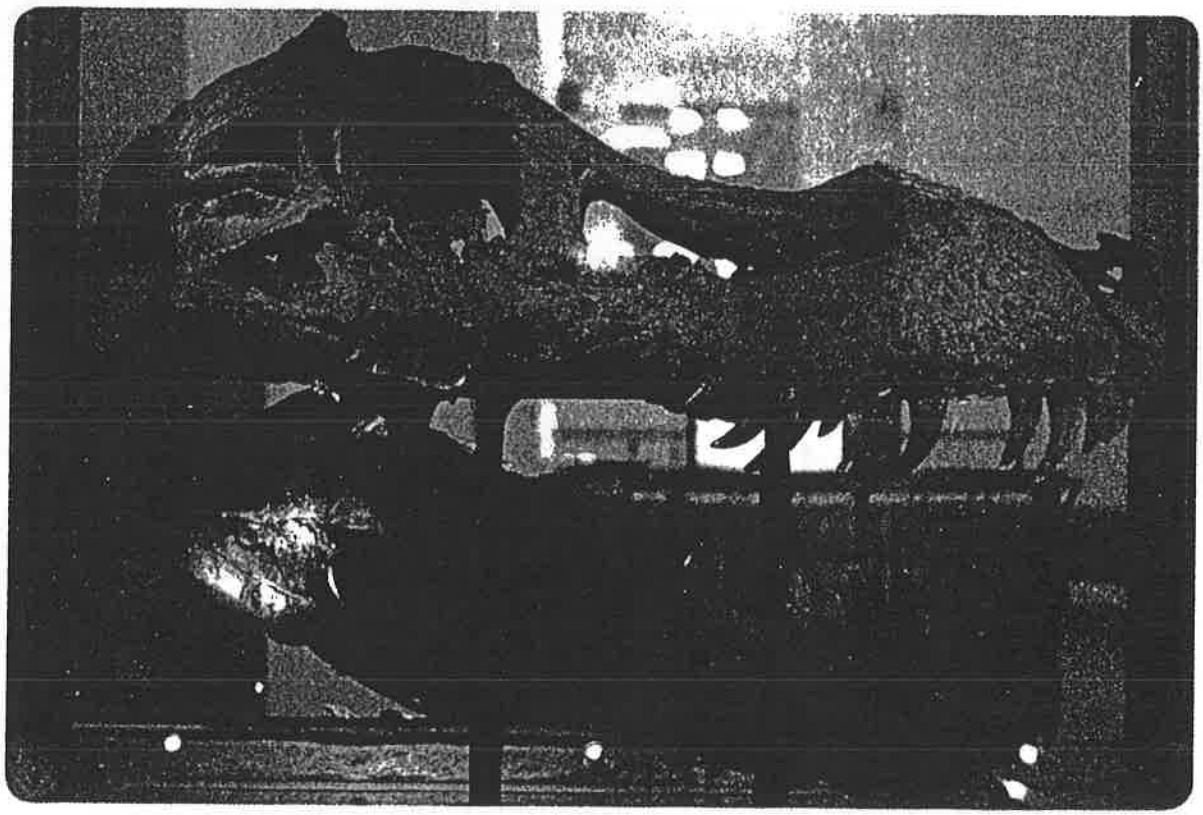
2 In 1990, fossil hunters were working in South Dakota. One of the women found small pieces of bone on the ground. Then she saw even bigger bones on the cliff above her. When she climbed up the cliff, she saw that the bones were huge!

3 The team all rushed to look. The bones were from a *T. rex*! They named the dinosaur Sue after the woman who had found her.

Why Sue Is Special

4 Other *T. rex* skeletons had been found before. But Sue's skeleton was one of the biggest and the best. More than 200 of Sue's bones were found.

5 Scientists worked for years to clean and reconstruct the skeleton. Finally, they finished putting all the bones together. Now everyone could see what Sue had looked like.



Sue's head is 600 pounds! It's too heavy to put on the skeleton, so it's inside a glass case in the museum. The head you see on Sue's skeleton is made of plastic.

Think

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

Part A

What does the word "reconstruct" mean under the subheading "Why Sue Is Special"?

- **A** to clean something old
- **B** to work hard
- **C** to find again
- **D** to put back together

Part B

Underline **one** sentence in the paragraphs below that **best** supports the answer in Part A.

Other *T. rex* skeletons had been found before. But Sue's skeleton was one of the biggest and the best. More than 200 of Sue's bones were found.

Scientists worked for years to clean and reconstruct the skeleton. Finally, they finished putting all the bones together. Now everyone could see what Sue had looked like.

8 Choose **three** facts that are found under the subheading "Why Sue Is Special."

- **A** the number of bones in Sue's skeleton
- **B** how Sue's bones turned into fossils
- **C** what scientists did with the skeleton
- **D** where fossil hunters found Sue
- **E** how Sue the dinosaur got her name
- **F** how Sue is different than other *T. rex* skeletons

9 Look at the index below from a book about dinosaurs.

Index

Baby dinosaurs
  colors, 6
  eggs, 5
  nests, 5-7
  size, 8
How fossils form, 9
North America
  dinosaur fossils, 10-15
  fossil hunters, 11

Which page would **most likely** tell you more about the person who found Sue?

A page 5

B page 6

C page 8

D page 11

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

Part A

Why did the author write "Sue the Dinosaur"?

A to tell about the famous skeleton of a *T. rex*

B to explain why fossil hunters were in South Dakota

C to tell how the bones of a dinosaur are put together

D to describe how fossils are made and where to find them

Part B

Underline the sentence below that **best** tells about the answer in Part A.

Other *T. rex* skeletons had been found before. But Sue's skeleton was one of the biggest and the best. More than 200 of Sue's bones were found.

2nd Grade
NTI Packet
Day 23

Read

Genre: Science Article

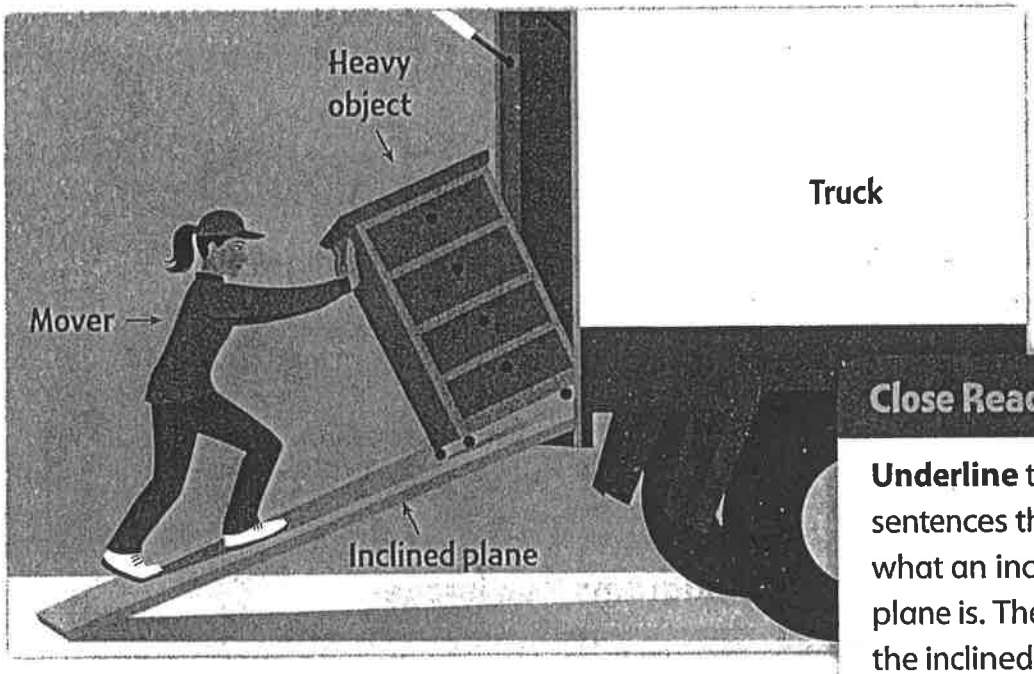
The Inclined Plane

by Sandra Brody

1 Many years ago, people had a problem. How could they easily move heavy objects without lifting them? The answer to the problem was the inclined plane.

2 An inclined plane is a flat surface that creates a ramp. This ramp makes a smooth climb from a lower place to a higher place. Inclined planes let people move heavy objects more easily. They can push the objects instead of lifting them.

3 Today, we use inclined planes all the time. Wheelchair ramps are one example. Loading ramps for moving trucks are another. Boat ramps are another.



Close Reader Habits

Underline the two sentences that tell you what an inclined plane is. Then **circle** the inclined plane on the diagram.

How does the diagram of an inclined plane help you better understand the information in the article?

As I reread the text, I will look at the diagram to help me understand.

1 Read the article again. Fill in the chart to show how the text and the diagram work together.

What the Text Tells	What the Diagram Shows

2 Reread paragraph 3. What are inclined planes used for? What other reasons can you think of for using an inclined plane?

HINT How does the diagram show what you read about in paragraph 2?

3 **Short Response** Look again at the diagram. How does it help you understand how an inclined plane works? Write your answer in the space on page 302.

Write Use the space below to write your answer to the question on page 299.

The Inclined Plane

3 **Short Response** Look again at the diagram. How does it help you understand how an inclined plane works?

HINT How does the diagram show what you read about in paragraph 2?

Don't forget to check your writing.

Name _____

Attributes of Three-Dimensional Shapes

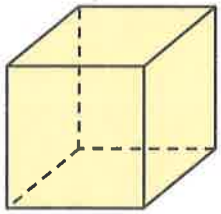
Essential Question How would you describe the faces of a rectangular prism and the faces of a cube?

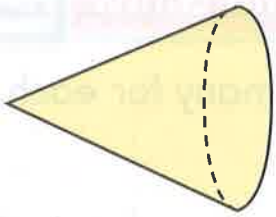
Common Core **Geometry—2.G.A.1**

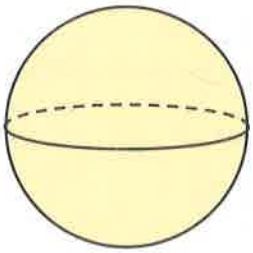
MATHEMATICAL PRACTICES
MP1, MP5, MP6

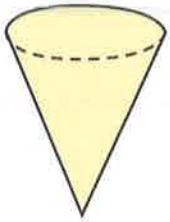
Listen and Draw

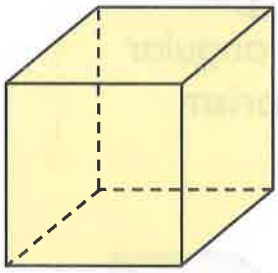
Circle the cones. Draw an X on the sphere.











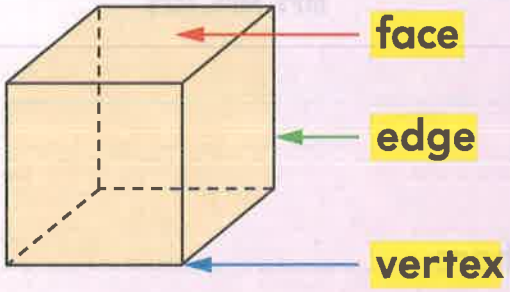
Math Talk MATHEMATICAL PRACTICES 1

Name the other shapes on this page. **Describe** how they are different.

HOME CONNECTION • Your child identified the shapes on this page to review some of the different kinds of three-dimensional shapes.

Model and Draw

The **faces** of a cube are squares.

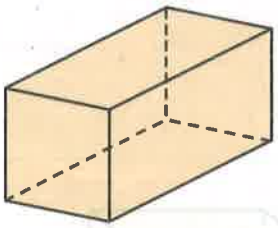
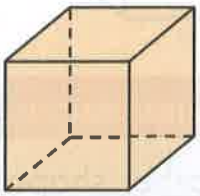


The **vertices** are the corner points of the cube.

Share and Show

MATH BOARD

Write how many for each.

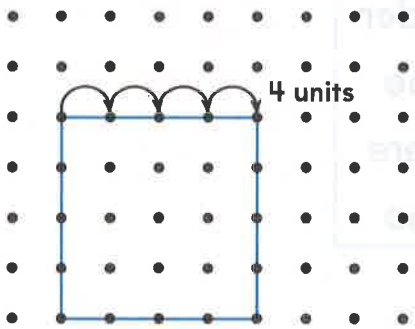
	faces	edges	vertices
1.  rectangular prism			
2.  cube			

Name _____

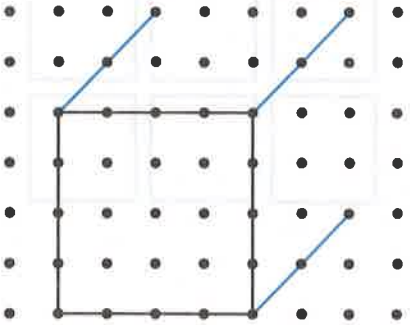
On Your Own

3. GO DEEPER Use dot paper. Follow these steps to draw a cube.

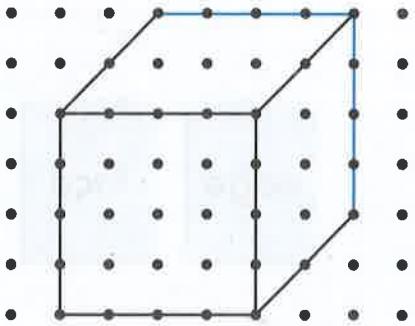
Step 1 Draw a square. Make each side 4 units long.



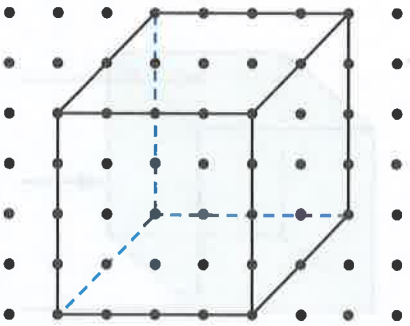
Step 2 Draw edges from 3 vertices, like this.



Step 3 Draw 2 more edges.



Step 4 Draw 3 dashed edges to show the faces that are not seen.



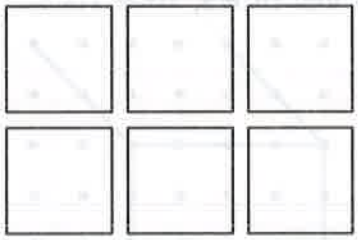
4. THINK SMARTER Trace all the faces of a rectangular prism on a sheet of paper. Write to tell about the shapes that you drew.

_____

_____

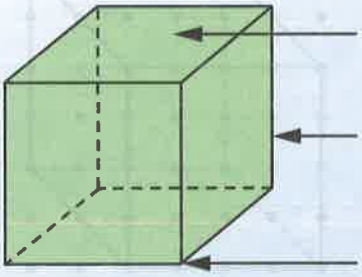
Problem Solving • Applications (Real World) WRITE Math

5. MATHEMATICAL PRACTICE 6 **Make Connections** Marcus traced around the faces of a three-dimensional shape. Circle the name of the shape he used.



cylinder
cube
sphere
cone

6. THINK SMARTER Use the words on the tiles to label the parts of the cube.



edge face vertex

Describe the faces of a cube.

_____

_____

TAKE HOME ACTIVITY • Have your child tell you about the faces on a cereal box or another kind of box.

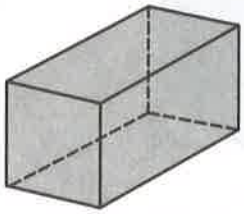
Name _____

Attributes of Three-Dimensional Shapes

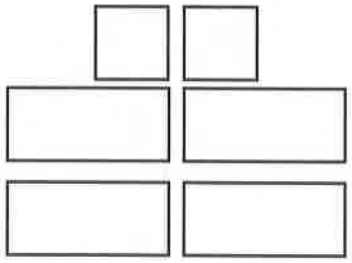
COMMON CORE STANDARD—2.G.A.1
Reason with shapes and their attributes.

Circle the set of shapes that are the faces of the three-dimensional shape.

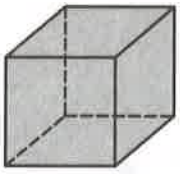
1.



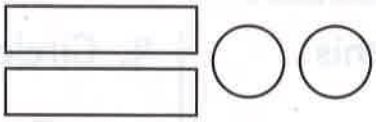
rectangular prism

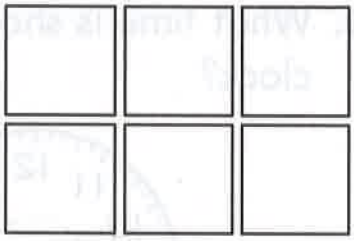


2.



cube





Problem Solving

3. Kevin keeps his marbles in a container that has the shape of a cube. He wants to paint each face a different color. How many different paint colors does he need?

____ different paint colors

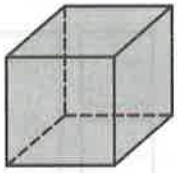
4. Describe a cube. Use the words *faces*, *edges*, and *vertices* in your description.

_____

_____

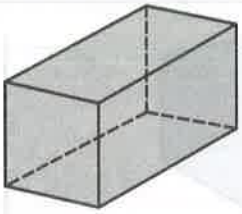
Lesson Check (2.G.A.1)

1. How many faces does a cube have?



____ faces

2. How many faces does a rectangular prism have?



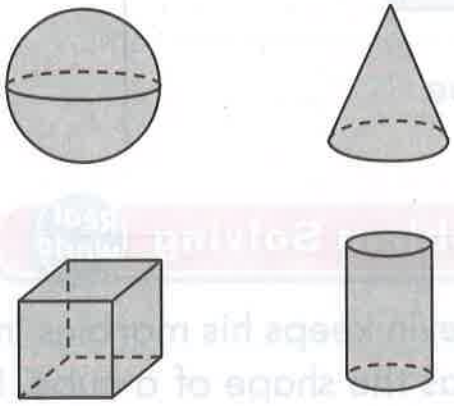
____ faces

Spiral Review (2.MD.C.7, 2.MD.D.9, 2.G.A.1)

3. What time is shown on this clock?

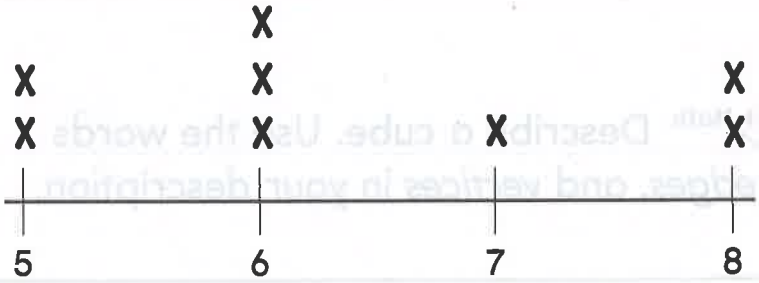
____ : ____

4. Circle the cone.



5. Use the line plot. How many books are 8 inches long?

____ books



Lengths of Books in Inches

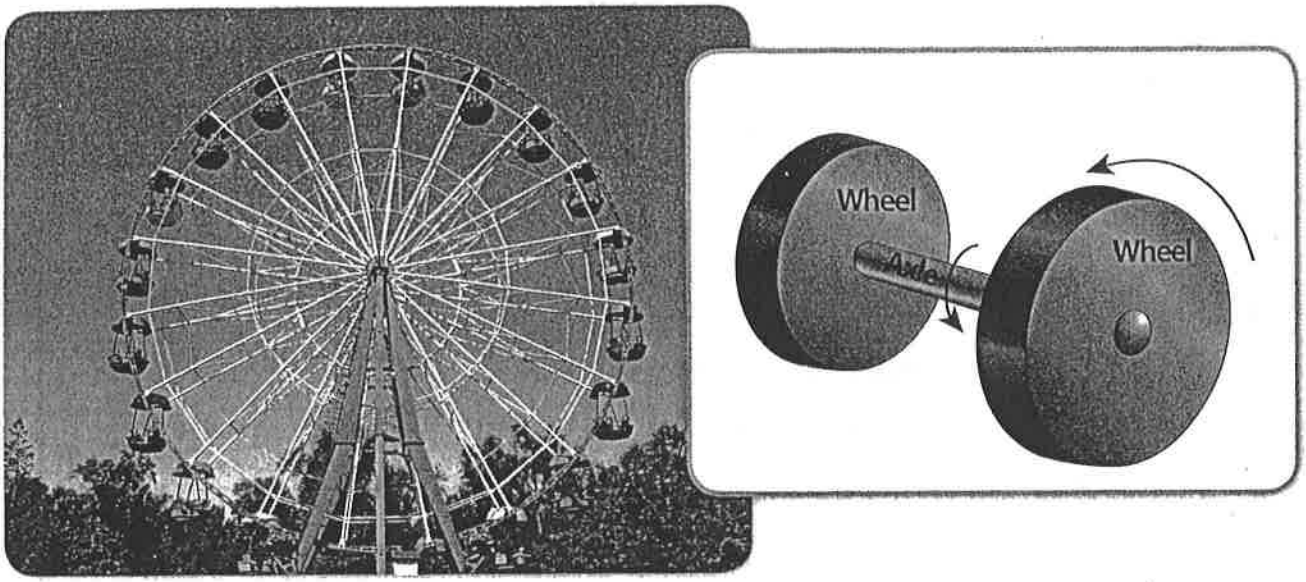
2nd Grade

NTI Packet

Day 24

Wheels and Axles

by Ed Green



1 A simple machine has few or no moving parts. One kind of simple machine is a wheel and axle. A wheel and axle can help move people or objects from one place to another.

2 Wheels and axles are all around you. Cars and bicycles have wheels and axles. A skateboard has them. Even a Ferris wheel is really just a big wheel and axle!

3 This simple machine has a large wheel. It also has a rod, called an axle. The axle goes through the center of the wheel. When the axle is turned, the wheel also turns.

Close Reader Habits

How does a wheel and axle work? **Put a box around** the paragraph that tells how it works. **Circle** labels on the diagram that show the two parts of this machine.

After I reread the text, I'll look at the diagram. It will tell me more about what I've read.

1 Which sentence from the passage does the diagram help to explain?

- **A** "A wheel and axle can help move people or objects from one place to another."
- **B** "Wheels and axles are all around you."
- **C** "Cars and bicycles have wheels and axles."
- **D** "The axle goes through the center of the wheel."

2 How does the diagram add to what the author tells us?

- **A** It shows that the machine can have two or more axles.
- **B** It shows that the axle must be long and heavy.
- **C** It shows that wheels and axles turn in the same direction.
- **D** It shows that many things around us have wheels and axles.

HINT Look at the article for examples of things that use wheels and axles.

3 The article says that wheels and axles can help move people or objects from place to place. What does this mean?

4 **Short Response** How does this article help you understand how wheels and axles work? Use one detail from the diagram and one detail from the text to support your answer. Write your answer in the space on page 303.

Write Use the space below to write your answer to the question on page 301.

Wheels and Axles

4 **Short Response** How does this article help you understand how wheels and axles work? Use one detail from the diagram and one detail from the text to support your answer.

Check Your Writing

- ☐ Did you read the question carefully?
- ☐ Can you say the question in your own words?
- ☐ Did you use proof from the text in your answer?
- ☐ Are your ideas in a good, clear order?
- ☐ Did you answer in full sentences?
- ☐ Did you check your spelling, capital letters, and periods?

Name _____

Build Three-Dimensional Shapes

Essential Question How can you build a rectangular prism?

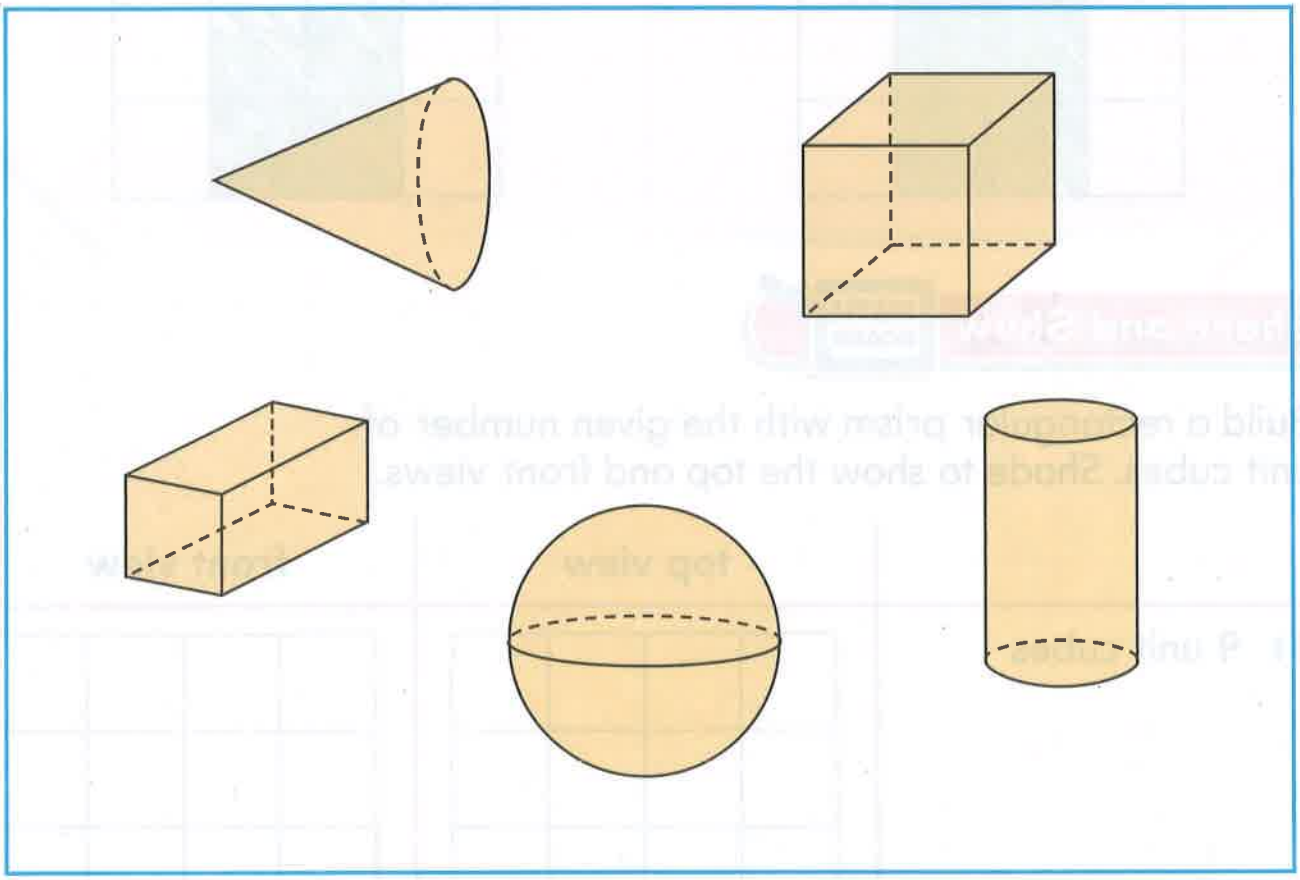
Common Core **Geometry—2.G.A.1**

MATHEMATICAL PRACTICES
MP1, MP3, MP4, MP7

Listen and Draw

Real World

Circle the shapes with curved surfaces. Draw an X on the shapes with flat surfaces.



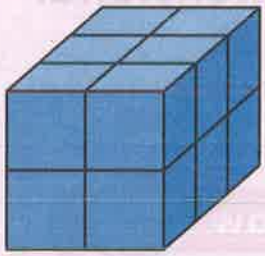
Math Talk **MATHEMATICAL PRACTICES 3**

Name the shapes you drew an X on. **Describe** how they are different.

HOME CONNECTION • Your child sorted the shapes on this page using the attributes of the shapes.

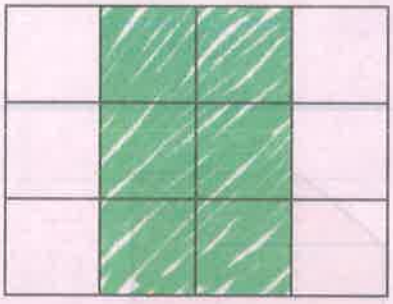
Model and Draw

Build this rectangular prism using 12 unit cubes.



The shading shows the top and front views.

top view

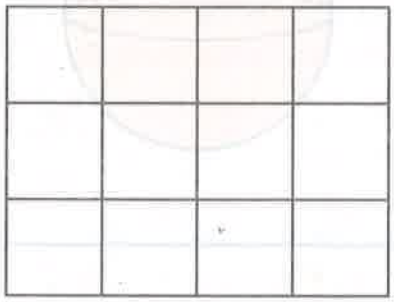
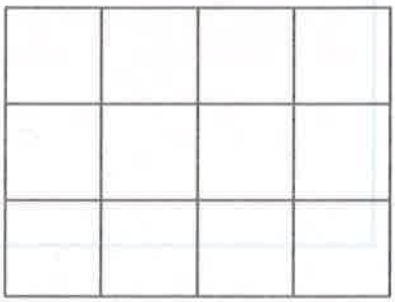
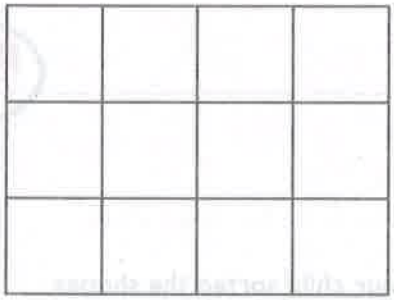


front view

Share and Show

MATH BOARD

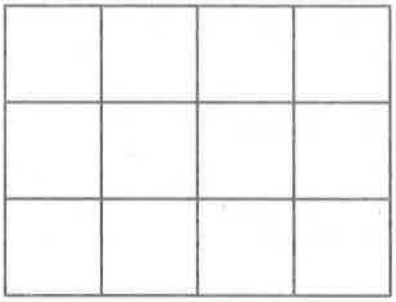
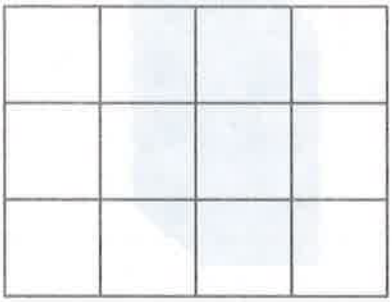
Build a rectangular prism with the given number of unit cubes. Shade to show the top and front views.

	top view	front view
1. 9 unit cubes		
2. 16 unit cubes		

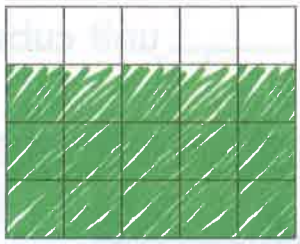
Name _____

On Your Own

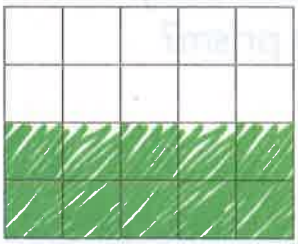
Build a rectangular prism with the given number of unit cubes. Shade to show the top and front views.

	top view	front view
3. 24 unit cubes		

4. THINK SMARTER The top, side, and front views of a rectangular prism are shown. Build the prism. How many unit cubes are used to build the solid?



top view

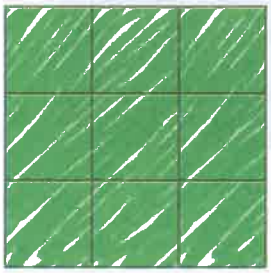


front view

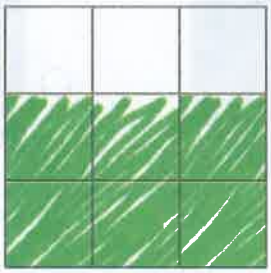
side view

_____ unit cubes

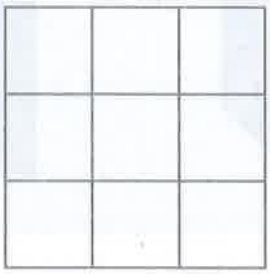
5. MATHEMATICAL PRACTICE 1 **Analyze** Jen uses 18 unit cubes to build a rectangular prism. The top and front views are shown. Shade to show the side view.



top view



front view



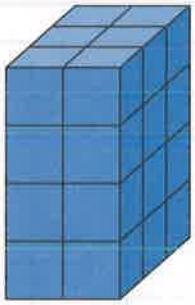
side view

Problem Solving • Applications (Real World)

WRITE Math

Solve. Write or draw to explain.

6. GO DEEPER Tomas built this rectangular prism. How many unit cubes did he use?



_____ unit cubes

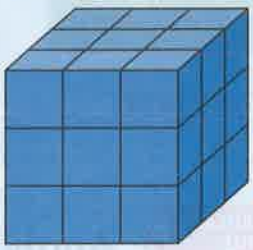
7. MATHEMATICAL PRACTICE 7 **Look for Structure**

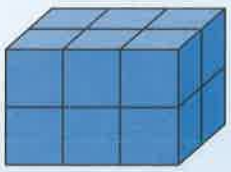
Theo builds the first layer of a rectangular prism using 4 unit cubes. He adds 3 more layers of 4 unit cubes each. How many unit cubes does he use for the prism?

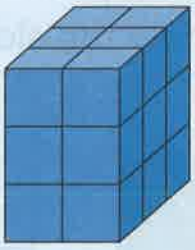
_____ unit cubes

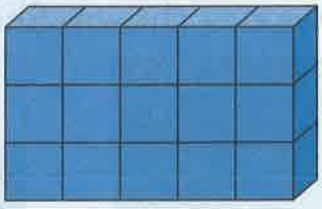
Personal Math Trainer

8. THINK SMARTER+ Tyler built this rectangular prism using unit cubes. Then he took it apart and used all of the cubes to build two new prisms. Fill in the bubble next to the two prisms he built.



○ 

○ 

○ 

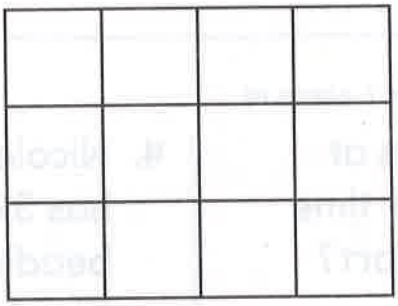
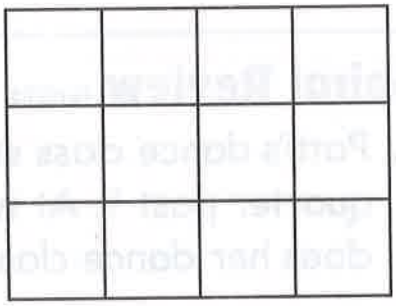
TAKE HOME ACTIVITY • Ask your child to show how he or she solved a problem in the lesson.

Name _____

Build Three-Dimensional Shapes

Common Core **COMMON CORE STANDARD—2.G.A.1**
Reason with shapes and their attributes.

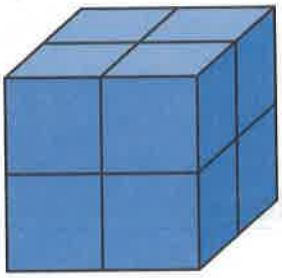
Build a rectangular prism with the given number of unit cubes. Shade to show the top and front views.

	top view	front view
1. 12 unit cubes		

Problem Solving Real World

Solve. Write or draw to explain.

2. Rosie built this rectangular prism. How many unit cubes did she use?



_____ unit cubes

3. WRITE Math Build a rectangular prism using cubes. Then, draw in your journal the top, side, and bottom views of your prism.

Lesson Check (2.G.A.1)

1. Milt builds the first layer of a rectangular prism using 3 unit cubes. He adds 2 more layers of 3 unit cubes each. How many unit cubes are used for the prism?

____ unit cubes

2. Thea builds the first layer of a rectangular prism using 4 unit cubes. Raj adds 4 more layers of 4 unit cubes each. How many unit cubes are used for the prism?

____ unit cubes

Spiral Review (2.NBT.5, 2.MD.C.7, 2.MD.D.10)

3. Patti's dance class starts at quarter past 4. At what time does her dance class start?

____ : ____

4. Nicole has 56 beads. Charles has 34 beads. How many more beads does Nicole have than Charles?

____ more beads

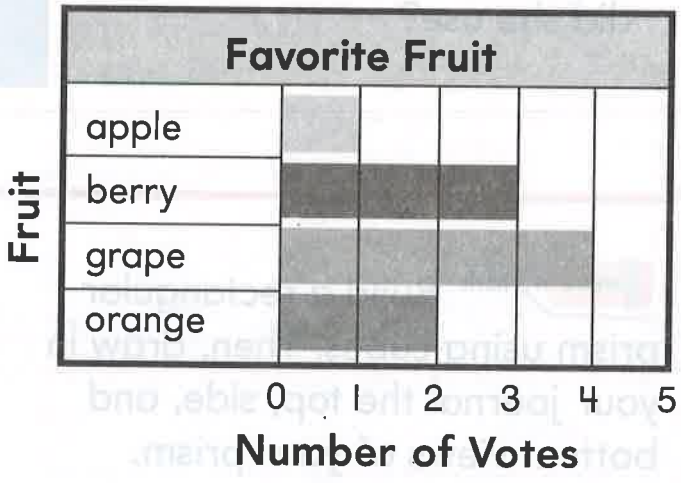
Use the bar graph.

5. Which fruit got the fewest votes?

_____

6. How many more votes did grape get than apple?

____ more votes



Name _____

Two-Dimensional Shapes

Essential Question What shapes can you name just by knowing the number of sides and vertices?

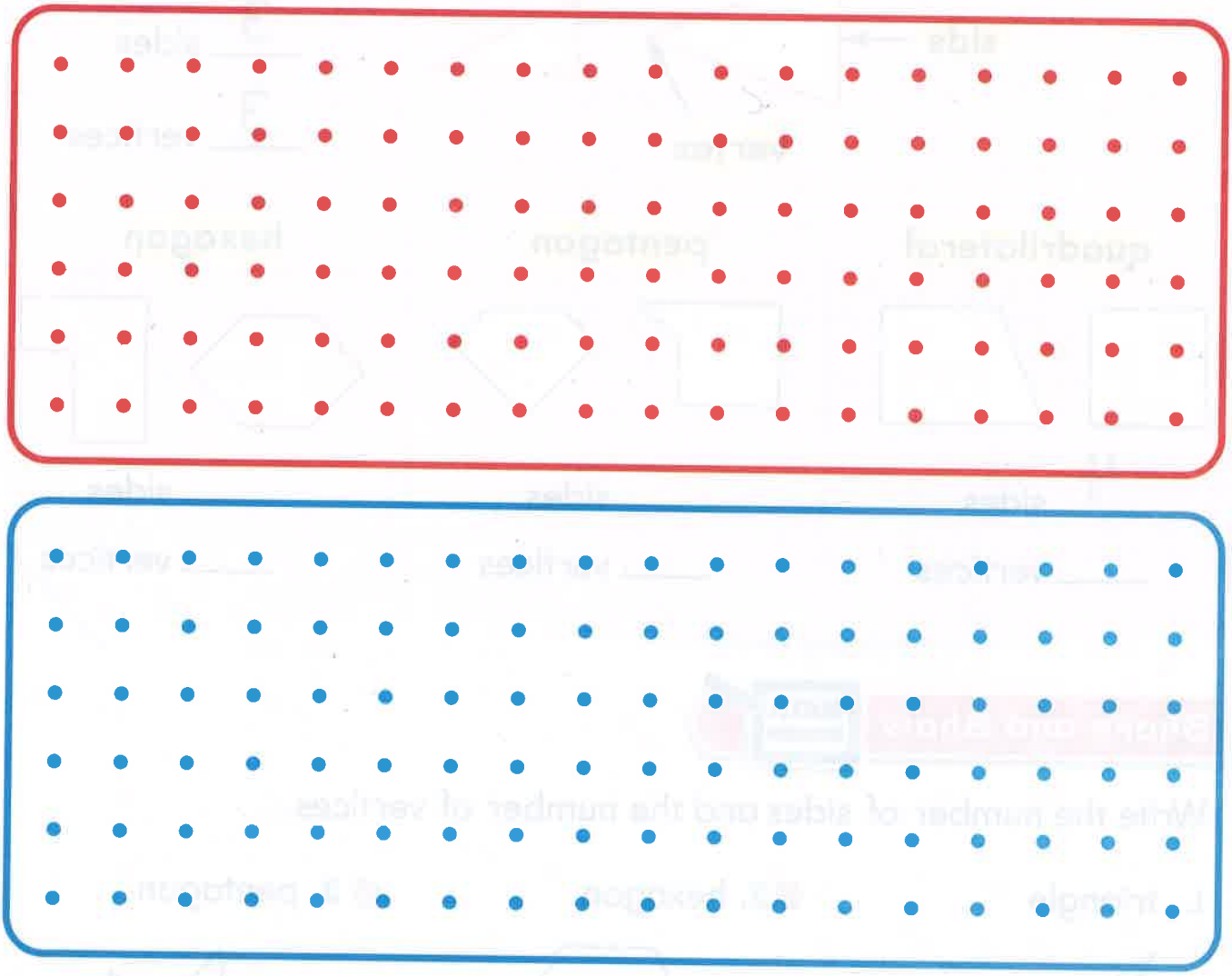
Common Core **Geometry—2.G.A.1**

MATHEMATICAL PRACTICES
MP4, MP7

Listen and Draw

Hands On

Use a ruler. Draw a shape with 3 straight sides. Then draw a shape with 4 straight sides.



Math Talk

MATHEMATICAL PRACTICES 7

Describe how your shapes are different from the shapes a classmate drew.

FOR THE TEACHER • Have children use rulers as straight edges for drawing the sides of shapes. Have children draw a two-dimensional shape with 3 sides and then a two-dimensional shape with 4 sides.

Model and Draw

You can count **sides** and **vertices** to name two-dimensional shapes. Look at how many sides and vertices each shape has.

triangle

3 sides

3 vertices

quadrilateral

4 sides

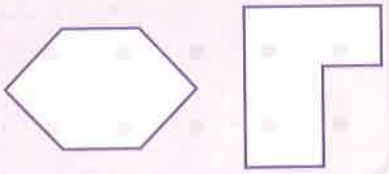
____ vertices

pentagon

____ sides

____ vertices

hexagon



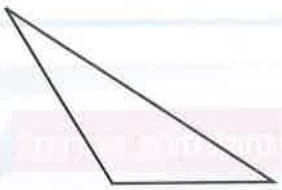
____ sides

____ vertices

Share and Show

Write the number of sides and the number of vertices.

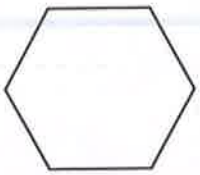
1. triangle



____ sides

____ vertices

2. hexagon



____ sides

____ vertices

3. pentagon

____ sides

____ vertices

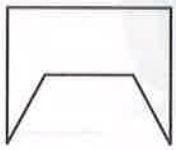
Name _____

On Your Own

pentagon
triangle
hexagon
quadrilateral

Write the number of sides and the number of vertices. Then write the name of the shape.

4.

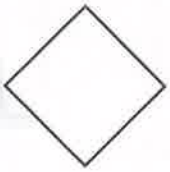


_____ sides

_____ vertices

_____

5.

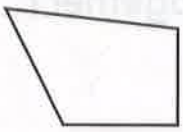


_____ sides

_____ vertices

_____

6.



_____ sides

_____ vertices

_____

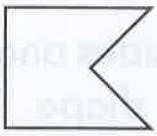
7.

_____ sides

_____ vertices

_____

8.



_____ sides

_____ vertices

_____

9.

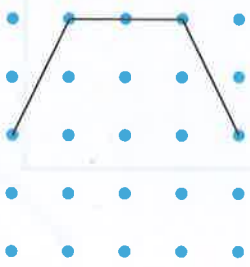
_____ sides

_____ vertices

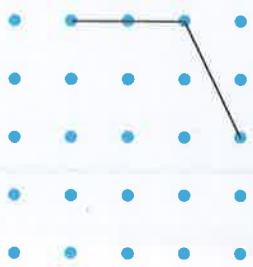
_____

GO DEEPER Draw more sides to make the shape.

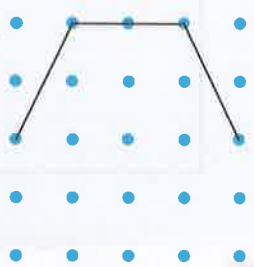
10. pentagon



11. quadrilateral



12. hexagon



Problem Solving • Applications (Real World) WRITE Math

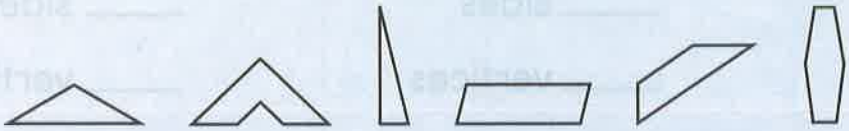
Solve. Draw or write to explain.

13. THINK SMARTER Alex draws a hexagon and two pentagons. How many sides does Alex draw altogether?

_____ sides

14. MATHEMATICAL PRACTICE 4 **Use Diagrams**
Ed draws a shape that has 4 sides. It is not a square. It is not a rectangle. Draw a shape that could be Ed's shape.

15. THINK SMARTER Count the sides and vertices of each two-dimensional shape. Draw each shape where it belongs in the chart.



Quadrilateral	Hexagon	Triangle

TAKE HOME ACTIVITY • Ask your child to draw a shape that is a quadrilateral.

Name _____

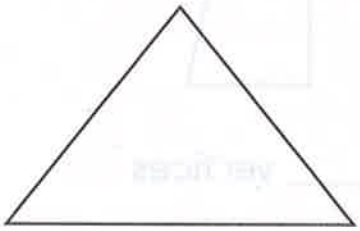
Two-Dimensional Shapes

Common Core **COMMON CORE STANDARD—2.G.A.1**
Reason with shapes and their attributes.

Write the number of sides and the number of vertices. Then write the name of the shape.

pentagon | triangle | hexagon | quadrilateral

1.

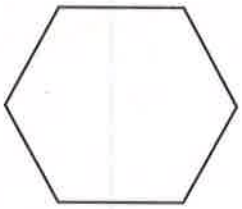


_____ sides

_____ vertices

_____

2.

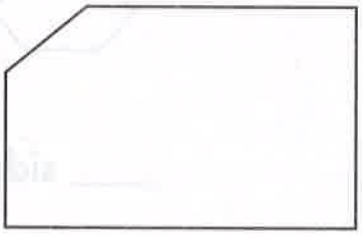


_____ sides

_____ vertices

_____

3.



_____ sides

_____ vertices

_____

Problem Solving Real World

Solve. Draw or write to explain.

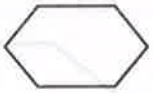
4. Oscar is drawing a picture of a house. He draws a pentagon shape for a window. How many sides does his window have?

_____ sides

5. WRITE Math Draw and label a pentagon and a quadrilateral.

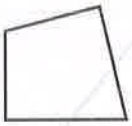
Lesson Check (2.G.A.1)

1. How many sides does a hexagon have?



____ sides

2. How many vertices does a quadrilateral have?



____ vertices

Spiral Review (2.MD.A.1, 2.MD.D.10)

3. Use a centimeter ruler. What is the length of the ribbon to the nearest centimeter?

____ centimeters

4. Look at the picture graph. How many more children chose apples than oranges?

Favorite Fruit					
apples	☺	☺	☺	☺	
oranges	☺	☺			
grapes	☺	☺	☺		
peaches	☺	☺			

Key: Each ☺ stands for 1 child.

____ more children

2nd Grade

NTI Packet

Day 25

Lesson 10
Unfamiliar Words

Learning Target

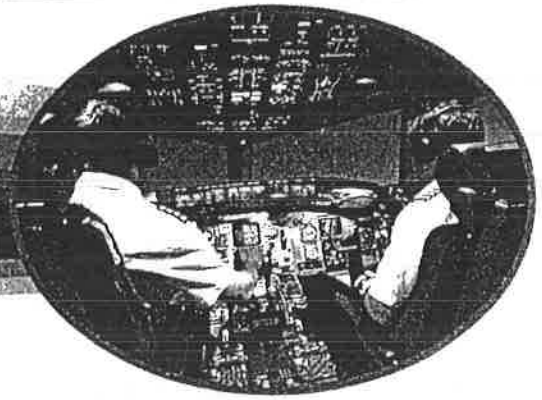
Figuring out the meanings of important words in a text will help you better understand the topic.

Readers have many ways to figure out a new word. One way is to look for **clues** in the words and **phrases** around the new word. You can also ask yourself what you may already know about the **subject** or topic.

Look at the photo and read the sentences below it. Then find clues about the meaning of the word "extinguish."

Firefighters work together to extinguish a fire.
After they put out the fire, they search for hot spots.

Taking Flight on a Jumbo Jet



by Kathryn Thomas

1 Airplanes carry people all over the world. Flying safely from place to place is a big job. It takes a whole team of people to do it. The team is called an aircrew. It is headed by a captain.

2 The captain of an airplane is also the pilot. The pilot controls how high and fast the plane flies. The first officer is the co-pilot. That person takes over if the captain needs to rest. There is also a flight engineer who controls the engines to make sure everything is working.

3 Passengers ride in the cabin of the plane. The cabin crew is made up of flight attendants. Their main job is to help passengers travel safely. They show passengers what to do if there is trouble with the plane. They help passengers store their baggage. They also serve passengers food and drinks.

4 Aircrews take people on thousands of flights each day. Though passengers may not notice, the crews are always hard at work.

Close Reader Habits

Underline key sentences that help you understand the meaning of the word "aircrew."

Think

If I don't know a word, I look for clues in the words around it. This helps me figure out what the word means.

1 Read this sentence from the article.

They were deep below the earth's surface.

What is the meaning of "earth's surface" in this sentence?

A body of water
B highest point
C deep tunnel
D outside part

2 In paragraph 2, what is the meaning of the word "tasks"?

A rest
B jobs
C turns
D days

Talk

3 Talk with a partner about how the men "supported" each other. Use clues from the passage in your discussion.

Write

4 **Short Response** In paragraph 3, the author says that "the 33 miners from Chile supported each other to the end." Write a sentence from the article that gives a clue about the meaning of the word "supported." Now tell what the word "supported" means. Write your answer in the space on page 167.

HINT Review the passage to find the text clues for the word "supported."

Name _____

Angles in Two-Dimensional Shapes

Essential Question How do you find and count angles in two-dimensional shapes?

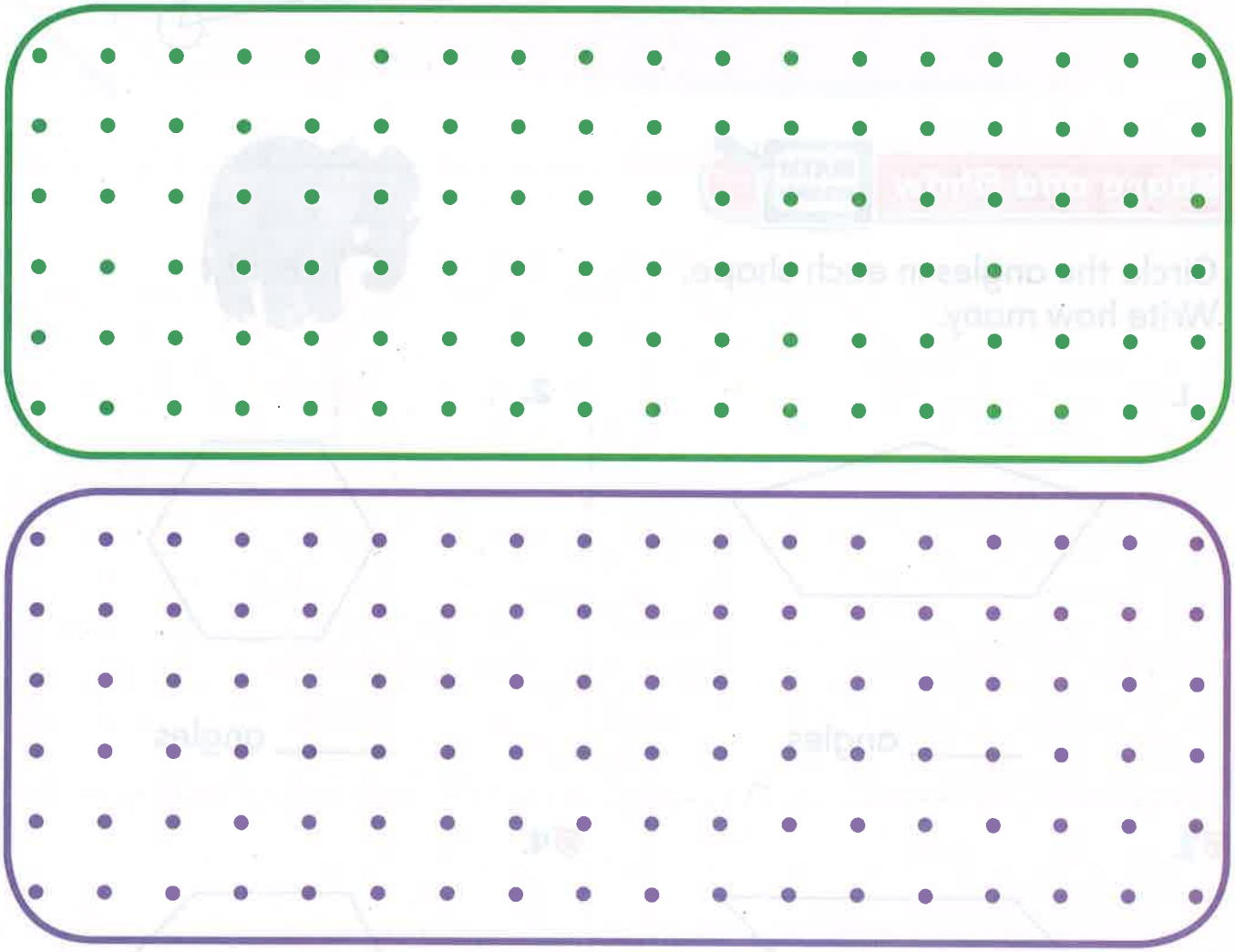
Common Core **Geometry—2.G.A.1**

MATHEMATICAL PRACTICES
MP1, MP4, MP7

Listen and Draw

Hands On

Use a ruler. Draw two different triangles. Then draw two different rectangles.



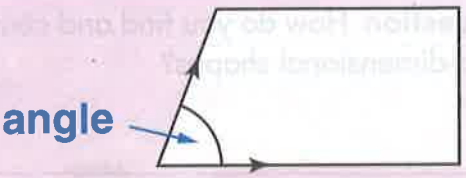
Math Talk MATHEMATICAL PRACTICES 1

Describe a triangle and a rectangle. Tell about their sides and vertices.

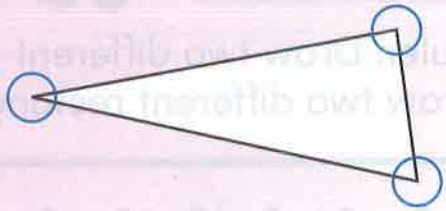
FOR THE TEACHER • Have children use pencils and rulers (or other straight edges) to draw the shapes. Have them draw two different triangles in the green box and two different rectangles in the purple box.

Model and Draw

When two sides of a shape meet, they form an **angle**.



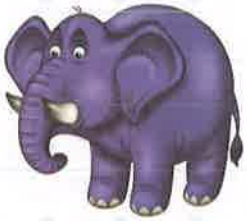
This shape has 3 angles.



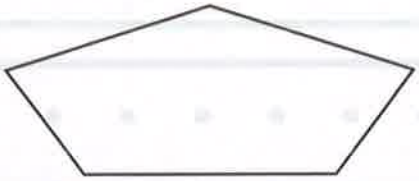
Share and Show

MATH BOARD

Circle the angles in each shape.
Write how many.

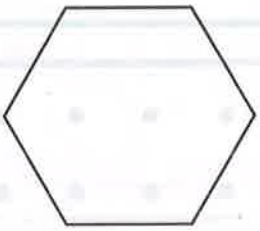


1.



_____ angles

2.

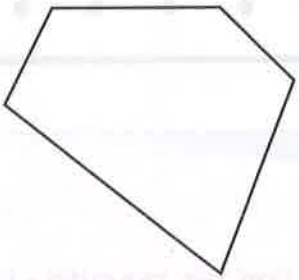


_____ angles

3.

_____ angles

4.



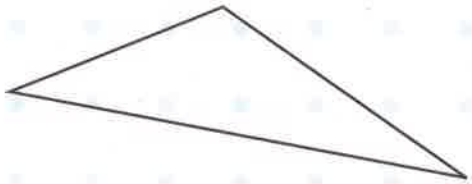
_____ angles

Name _____

On Your Own

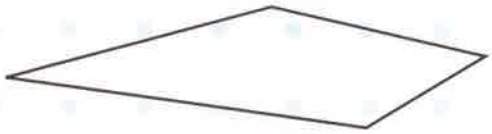
Circle the angles in each shape. Write how many.

5.



_____ angles

6.

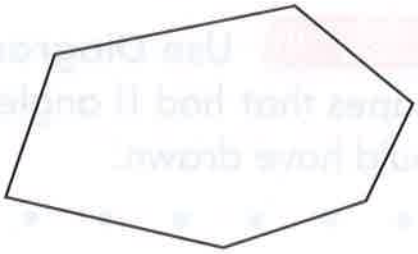


_____ angles

7.

_____ angles

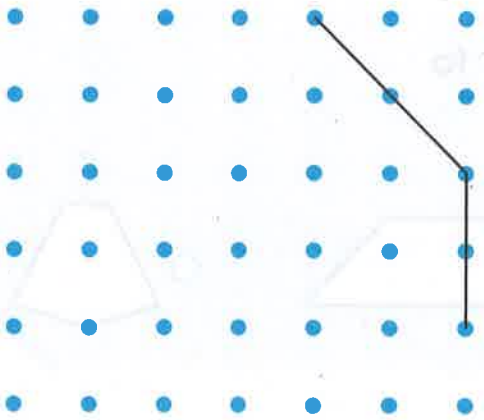
8.



_____ angles

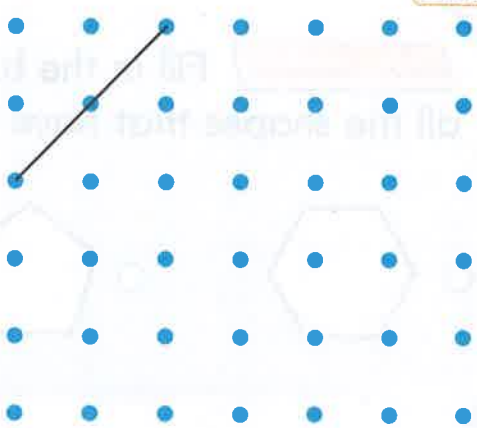
9. THINK SMARTER Draw more sides to make the shape. Write how many angles.

pentagon



_____ angles

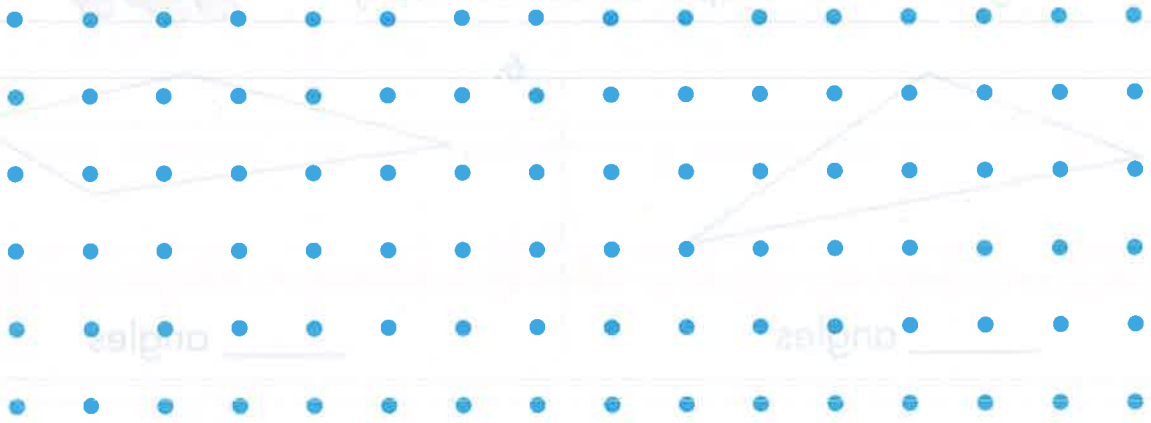
quadrilateral



_____ angles

Problem Solving • Applications (Real World) WRITE Math

10. Draw two shapes that have 7 angles in all.



11. MATHEMATICAL PRACTICE 1 **Use Diagrams** Ben drew 3 two-dimensional shapes that had 11 angles in all. Draw shapes Ben could have drawn.

12. THINK SMARTER Fill in the bubble next to all the shapes that have 5 angles.

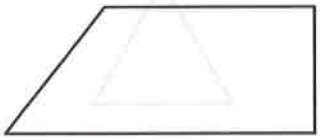
TAKE HOME ACTIVITY • Ask your child to draw a shape with 4 sides and 4 angles.

Name _____

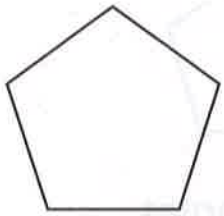
Angles in Two-Dimensional Shapes

Common Core **COMMON CORE STANDARD—2.G.A.1**
Reason with shapes and their attributes.

Circle the angles in each shape. Write how many.

1. 

_____ angles

2. 

_____ angles

Problem Solving Real World

3. Logan drew 2 two-dimensional shapes that had 8 angles in all. Draw shapes Logan could have drawn.

4. WRITE Math Draw a two-dimensional shape with 4 angles. Circle the angles. Write the name of the two-dimensional shape you drew.

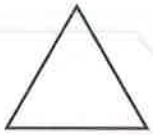
_____

Lesson Check (2.G.A.1)

1. How many angles does this shape have?

____ angles

2. How many angles does this shape have?



____ angles

Spiral Review (2.MD.A.1, 2.MD.D.10)

3. Use an inch ruler. What is the length of the string to the nearest inch?

____ inches

4. Look at the picture graph. How many children chose daisies?

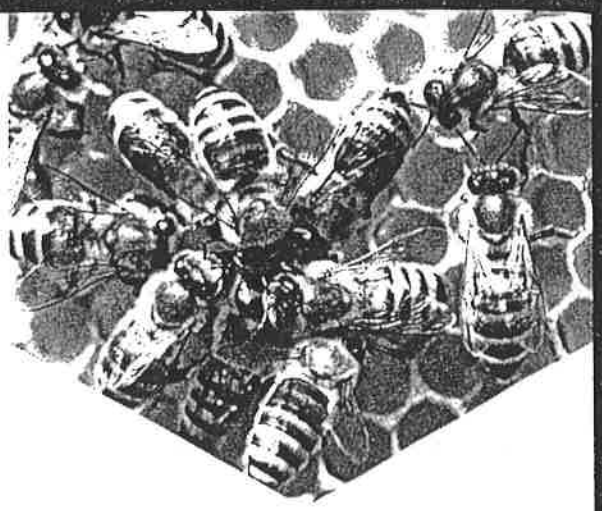
Favorite Flower	
roses	☺ ☺ ☺ ☺
tulips	☺ ☺ ☺
daisies	☺ ☺ ☺ ☺ ☺
lillies	☺ ☺

Key: Each ☺ stands for 1 child.

____ children

2nd Grade
NTI Packet
Day 26

Soldier Bees



by Melissa Maron

1 We could learn a lot about working together from honeybees. There are three types of bees in a hive. They all do different jobs to help make their hive a home. The queen bee lays eggs. Drones are the fathers. And worker bees do everything else. They clean the hive, feed the young, and find nectar. In South America, some honeybees have added a new kind of worker: the soldier bee.

2 Soldier bees stay at the opening of the hive to protect it from robber bees. Robber bees like to steal the honey from other hives. In most hives, the worker bees stand guard for only one or two days. Then they fly off to do other jobs. But soldier bees are different. They spend their whole lives defending the hive from other insects. They are very good at keeping the other bees safe. The soldier bees are some of nature's tiny heroes.

Close Reader Habits

What is the key point in paragraph 1 and paragraph 2? **Underline** the key point in each paragraph.

I'm going to look for details that support the key point I underlined.

1 What key point does the author make about honeybees in paragraph 1?

- **A** All the bees work to make their hive a home.
- **B** The three types of bees are queen, drone, and worker.
- **C** Robber bees like to steal honey from other bees.
- **D** Soldier bees are a special kind of worker bee.

2 What reason does the author give to explain the key point she makes about honeybees in paragraph 1?

- **A** Robber bees like to steal honey from hives.
- **B** Each type of bee in a hive does a different job.
- **C** Some bees have added a new kind of worker.
- **D** Soldier bees are different from worker bees.

3 The author makes the key point that soldier bees are different from worker bees. What are two reasons from the passage that support this point?

4 **Short Response** Write about how soldier bees are different from worker bees. Write your answer in the space on page 317.

HINT Use reasons that you just talked about in your answer.

Write Use the space below to write your answer to the question on page 315.

Soldier Bees

4 **Short Response** Write about how soldier bees are different from worker bees.

HINT Use reasons that you just talked about in your answer.

Check Your Writing

- ☐ Did you read the question carefully?
- ☐ Can you say the question in your own words?
- ☐ Did you use proof from the text in your answer?
- ☐ Are your ideas in a good, clear order?
- ☐ Did you answer in full sentences?
- ☐ Did you check your spelling, capital letters, and periods?

Name _____

Sort Two-Dimensional Shapes

Essential Question How do you use the number of sides and angles to sort two-dimensional shapes?

Common Core **Geometry—2.G.A.1**

MATHEMATICAL PRACTICES
MP4, MP6

Listen and Draw

Hands On

Make the shape with pattern blocks. Draw and color the blocks you used.

Use one block.

Use two blocks.

Use three blocks.

Math Talk

MATHEMATICAL PRACTICES 6

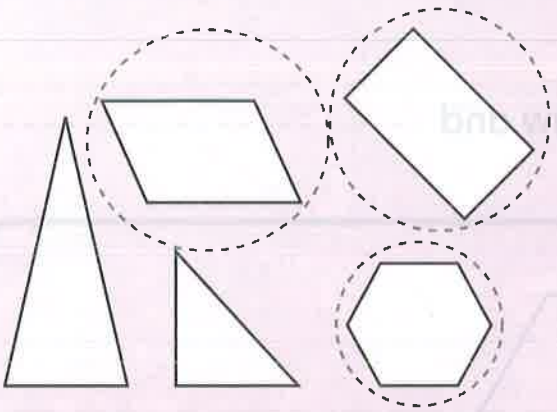
Describe how you could sort the blocks you used.

FOR THE TEACHER • Tell children that the shape shown three times on the page is a trapezoid. Have children use pattern blocks to make the trapezoid three times: with one pattern block, with two pattern blocks, and then with three pattern blocks.

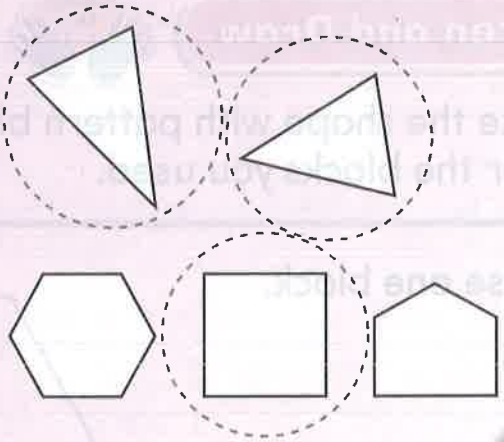
Model and Draw

Which shapes match the rule?

Shapes with more than 3 sides



Shapes with fewer than 5 angles

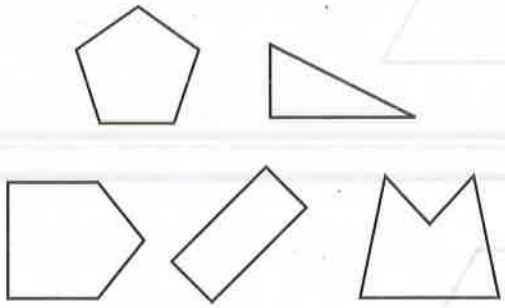


Share and Show

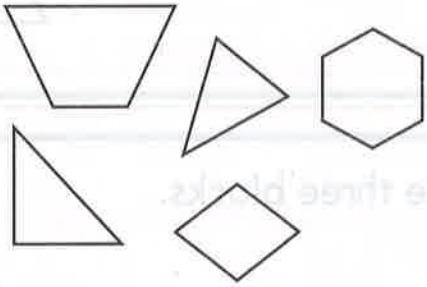
MATH BOARD

Circle the shapes that match the rule.

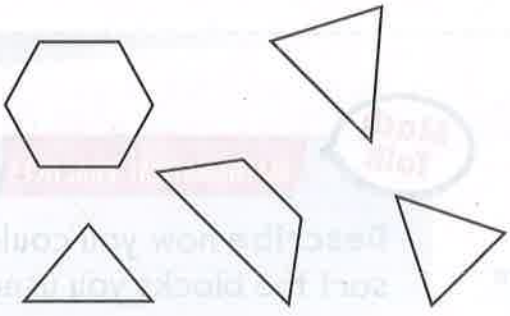
1. Shapes with 5 sides



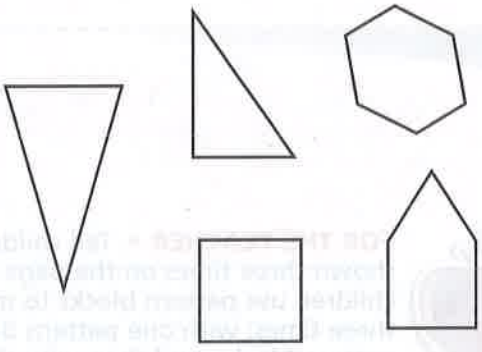
2. Shapes with more than 3 angles



3. Shapes with fewer than 4 angles



4. Shapes with fewer than 5 sides

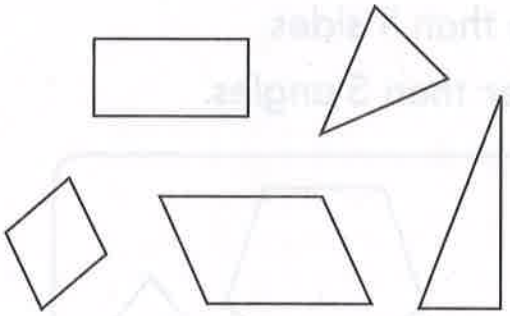


Name _____

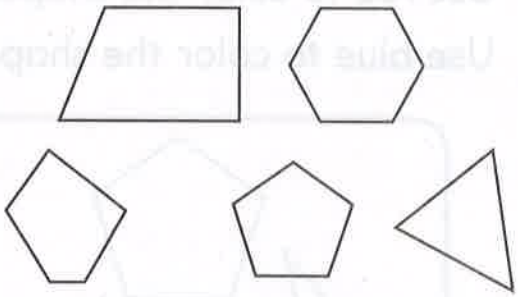
On Your Own

Circle the shapes that match the rule.

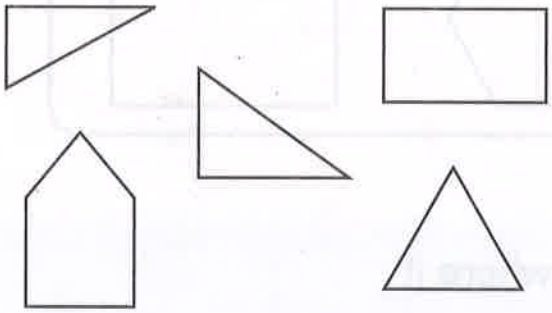
5. Shapes with 4 sides



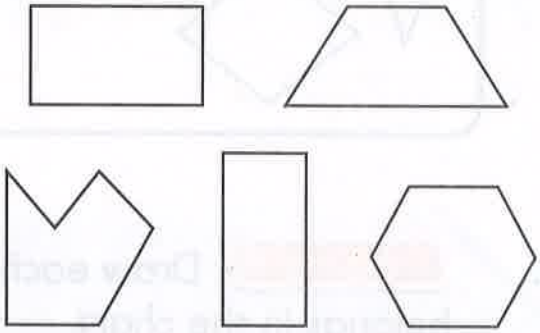
6. Shapes with more than 4 angles



7. Shapes with fewer than 4 angles



8. Shapes with fewer than 5 sides



9. THINK SMARTER Draw three shapes that match the rule. Circle them. Then draw two shapes that do not match the rule.

Shapes with fewer than 5 angles

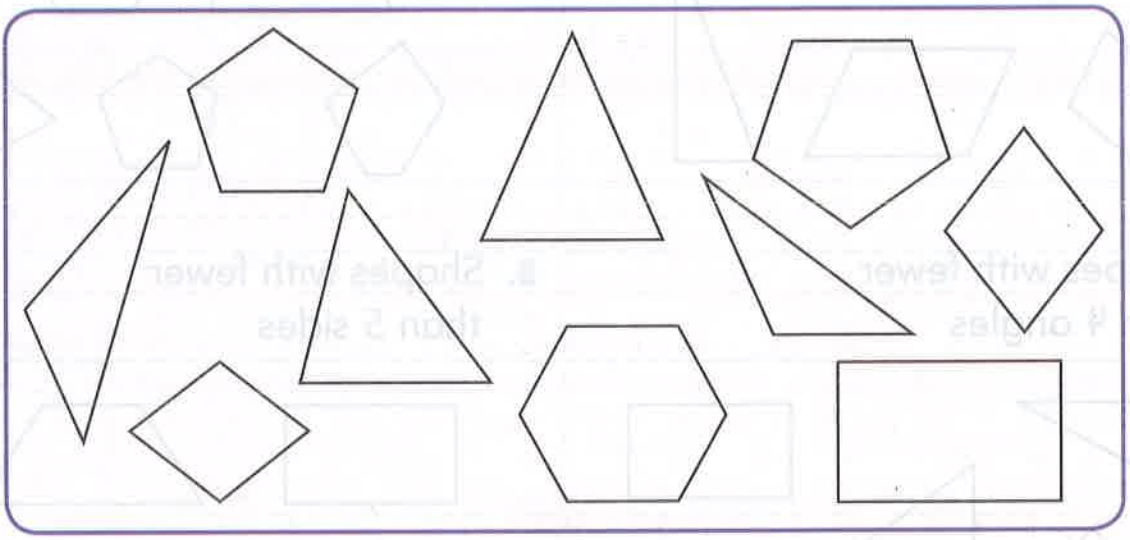
Problem Solving • Applications Real World

WRITE Math

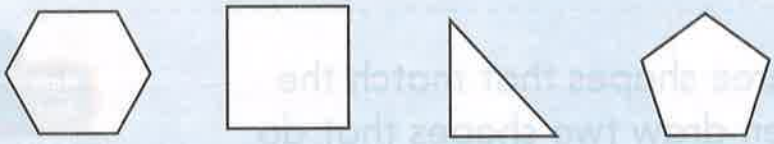
10. MATHEMATICAL PRACTICE 6 Make Connections

Sort the shapes.

- Use red to color the shapes with more than 4 sides.
- Use blue to color the shapes with fewer than 5 angles.



11. THINK SMARTER Draw each shape where it belongs in the chart.



Shapes with fewer than 5 sides	Shapes with more than 4 sides

TAKE HOME ACTIVITY • Ask your child to draw some shapes that each have 4 angles.

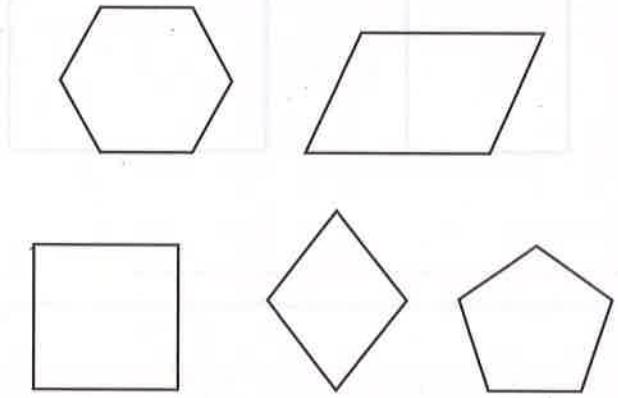
Name _____

Sort Two-Dimensional Shapes

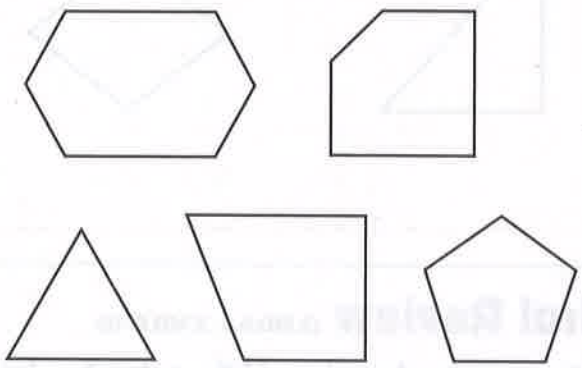
Common Core **COMMON CORE STANDARD—2.G.A.1**
Reason with shapes and their attributes.

Circle the shapes that match the rule.

1. Shapes with fewer than 5 sides



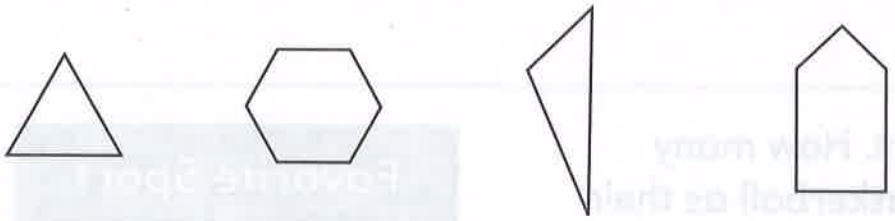
2. Shapes with more than 4 sides



Problem Solving Real World

Circle the correct shape.

3. Tammy drew a shape with more than 3 angles. It is not a hexagon. Which shape did Tammy draw?



4. WRITE Math Draw three shapes that match the rule.
Shapes with more than 3 angles.

Lesson Check (2.G.A.1)

1. Which shape has fewer than 4 sides?

Spiral Review (2.MD.A.1, 2.MD.D.10)

2. Use an inch ruler. What is the length of the pencil to the nearest inch?

____ inches

3. Use the tally chart. How many children chose basketball as their favorite sport?

____ children

Favorite Sport	
Sport	**Tally**
soccer	𝍸
basketball	𝍸 ||
football	||||
baseball	||||

2nd Grade

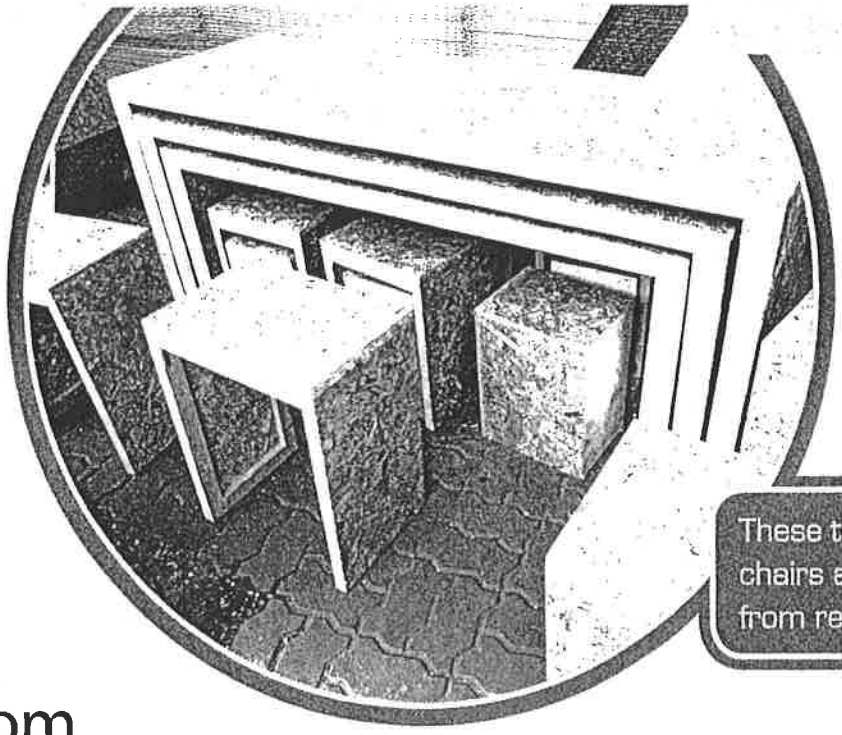
NTI Packet

Day 27

WORDS TO KNOW

As you read, look inside, around, and beyond these words to figure out what they mean.

- **trash**
- **landfills**
- **recycle**



These tables and chairs are made from recycled paper.

from

Recycle That!

by Fay Robinson

1 Bottles, cans, mail, magazines, boxes, bags. We throw out a lot of trash! Everything we throw away came from somewhere. The paper products we use are made from trees. Thousands and thousands of trees are cut down each day to make the paper we use.

2 Fields and hills are dug up to get sand to make glass, and metals to make cans. The plastics we use are made with oil pumped from deep inside the earth.

3 Each time we take something from the earth, we change the earth. The ways we change it are not always good for us, or for wild animals.

4 And where does all our trash go? Most of it goes into land set aside just for trash. But we throw out so much trash that our landfills are filling up. Soon there won't be any more room!

5 By using and throwing away so many things, we have created a big problem. What can you do to help? Recycle!

6 When something is recycled, all or part of it is used again. Many towns and cities have special programs for recycling. Each home gets a special container for items to be recycled.

7 Often, cans, bottles, and newspapers can be recycled. In some places, magazines and plastic bottles can be recycled, too.

8 Can you see why it's smart to recycle? Things that would have been wasted can be made into something useful instead! Each time you recycle one can, bottle, or newspaper, you help the earth a little bit.

9 So recycle that! It's easy!

Turning Trash into Treasure

by Ron Fridell

WORDS TO KNOW

As you read, look inside, around, and beyond these words to figure out what they mean.

- **waste**
- **scraps**
- **cycle**

1 When was the last time you threw away a banana peel? An apple core? A piece of paper? Maybe you could have recycled them instead.

2 When we recycle things, we turn them into new things to use again. From old newspapers, we make new paper. From old cans and empty bottles, we make new ones. Recycling can keep our landfills from getting too full. If we aren't careful, we may run out of room.

3 Composting is another way to recycle. It is a great way to turn food and yard waste into good, rich soil. The soil helps grow new things.

4 To make compost, you need fruit and vegetable scraps. You also need leaves, grass, and soil. Put all these things in a big wooden box. Then add some water and stir. Finally, cover the box.

5 After a few weeks, everything in the compost box starts to rot and break down. The tiniest living things in nature help break them down.

6 After a few more weeks, everything will have turned into rich soil. People use compost in their gardens to help plants and flowers grow.

7 Composting shows us how nature is a cycle. Things grow. Then they die. Finally, they become soil and help new things grow.

8 By recycling things we no longer need, we create new things. We also take better care of the earth.

Think Use what you learned by reading the articles to respond to the following questions.

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

Part A

Based on both articles, which sentence about landfills is true?

A Landfills are a good solution to the trash problem.

B Landfills will never get too full.

C Landfills are safe places to dispose of trash.

D Landfills are not the best way to get rid of trash.

Part B

Write a sentence from each article that helped you find the answer to Part A.

Sentence from "Turning Trash into Treasure"

_____

_____

Sentence from *Recycle That!*

_____

_____

2 Read these sentences from *Recycle That!*

Many towns and cities have special programs for recycling. Each home gets a special container for items to be recycled.

Which of the following means the same as "container"?

A **plan** thinking of how to do something before you do it

B **box** something that holds things inside of it

C **area** an open place or space

D **direction** something you follow or a way to go

Write

Compare and contrast the most important points in the articles. What points are the same? What are two ways the information about recycling in "Turning Trash into Treasure" is different from the information in "from *Recycle That!*"?

3 **Plan Your Response** Reread the two articles. What important points does each writer include about recycling? Underline these important points in both articles. Then make a Venn diagram to compare and contrast them.

4 **Write an Extended Response** Compare and contrast the most important points in the articles. What points are the same? What are two ways the information about recycling in "Turning Trash into Treasure" is **different** from the information in "from *Recycle That!*"?

Name _____

HANDS ON
Lesson 11.7

Partition Rectangles

Essential Question How do you find the total number of same-size squares that will cover a rectangle?

Common Core **Geometry—2.G.A.2**
Also 2.OA.C.4

MATHEMATICAL PRACTICES
MP3, MP5, MP8

Listen and Draw

Hands On

Put several color tiles together. Trace around the shape to draw a two-dimensional shape.

HOME CONNECTION • After putting together tiles, your child traced around them to draw a two-dimensional shape. This activity is an introduction to partitioning a rectangle into several same-size squares.

Math Talk **MATHEMATICAL PRACTICES 3**

Is there a different shape that can be made with the same number of tiles? **Explain.**

Model and Draw

Trace around color tiles. How many square tiles cover this rectangle?

Number of rows: 2

Number of columns: 3

Total: _____ square tiles

Share and Show

MATH BOARD

Use color tiles to cover the rectangle.
Trace around the square tiles. Write how many.

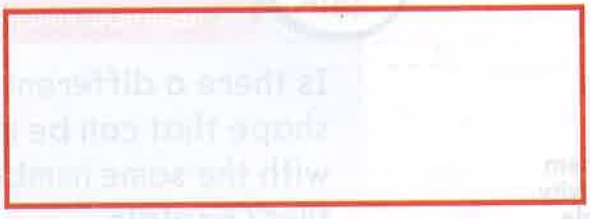
1.

Number of rows: _____

Number of columns: _____

Total: _____ square tiles

2.



Number of rows: _____

Number of columns: _____

Total: _____ square tiles

Name _____

On Your Own

Use color tiles to cover the rectangle.
Trace around the square tiles. Write how many.

3.

Number of rows: _____

Number of columns: _____

Total: _____ square tiles

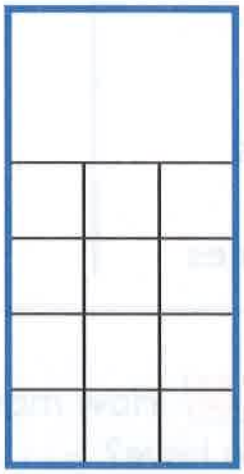
4.

Number of rows: _____

Number of columns: _____

Total: _____ square tiles

5. THINK SMARTER Mary started to cover this rectangle with ones blocks. **Explain** how you would estimate the number of ones blocks that would cover the whole rectangle.



_____

_____

_____

TAKE HOME ACTIVITY • Have your child describe what he or she did in this lesson.

Name _____

Mid-Chapter Checkpoint

Personal Math Trainer
Online Assessment and Intervention

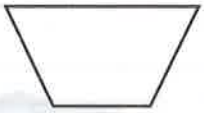
Concepts and Skills

Circle the objects that match the shape name. (2.G.A.1)

1. cylinder				
2. cube				

Write the number of sides and the number of vertices. (2.G.A.1)

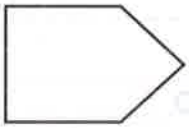
3. quadrilateral



_____ sides

_____ vertices

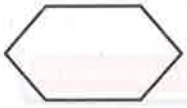
4. pentagon



_____ sides

_____ vertices

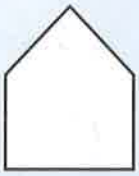
5. hexagon



_____ sides

_____ vertices

6. THINK SMARTER How many angles does this shape have? (2.G.A.1)



_____ angles

Name _____

Partition Rectangles

Essential Question How do you find the total number of same-size squares that will cover a rectangle?

Common Core **Geometry—2.G.A.2**
Also 2.OA.C.4

MATHEMATICAL PRACTICES
MP3, MP5, MP8

Listen and Draw

Hands On

Put several color tiles together. Trace around the shape to draw a two-dimensional shape.

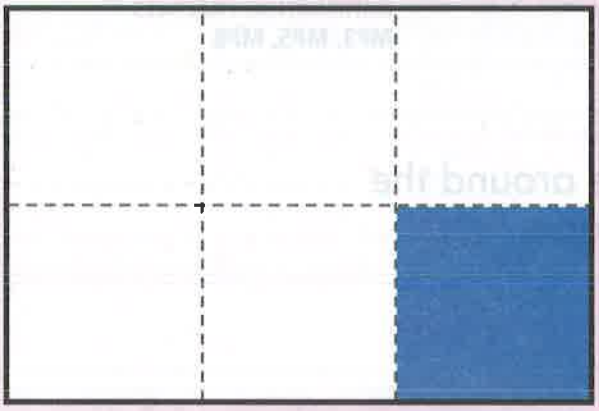
HOME CONNECTION • After putting together _ tiles, your child traced around them to draw a two-dimensional shape. This activity is an introduction to partitioning a rectangle into several same-size squares.

Math Talk MATHEMATICAL PRACTICES 3

Is there a different shape that can be made with the same number of tiles? **Explain.**

Model and Draw

Trace around color tiles. How many square tiles cover this rectangle?



Number of rows: 2

Number of columns: 3

Total: _____ square tiles

Share and Show MATH BOARD

Use color tiles to cover the rectangle.
Trace around the square tiles. Write how many.

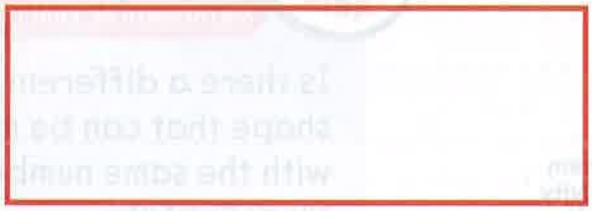
1.

Number of rows: _____

Number of columns: _____

Total: _____ square tiles

2.



Number of rows: _____

Number of columns: _____

Total: _____ square tiles

Name _____

On Your Own

Use color tiles to cover the rectangle.
Trace around the square tiles. Write how many.

3.

Number of rows: _____

Number of columns: _____

Total: _____ square tiles

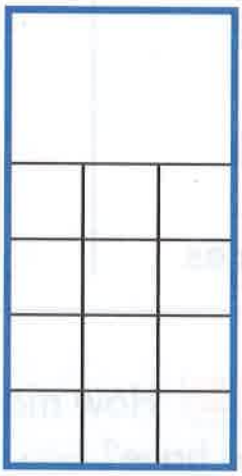
4.

Number of rows: _____

Number of columns: _____

Total: _____ square tiles

5. THINK SMARTER Mary started to cover this rectangle with ones blocks. **Explain** how you would estimate the number of ones blocks that would cover the whole rectangle.



_____

_____

_____

TAKE HOME ACTIVITY • Have your child describe what he or she did in this lesson.

Name _____

Mid-Chapter Checkpoint

Personal Math Trainer
Online Assessment and Intervention

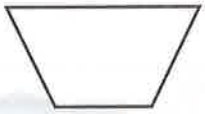
Concepts and Skills

Circle the objects that match the shape name. (2.G.A.1)

1. cylinder				
2. cube				

Write the number of sides and the number of vertices. (2.G.A.1)

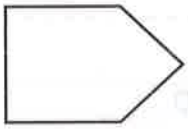
3. quadrilateral



_____ sides

_____ vertices

4. pentagon



_____ sides

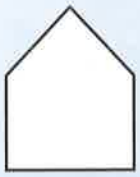
_____ vertices

5. hexagon

_____ sides

_____ vertices

6. THINK SMARTER How many angles does this shape have? (2.G.A.1)



_____ angles

Name _____

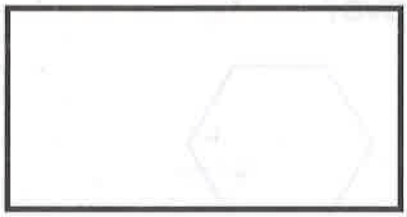
Partition Rectangles

Common Core **COMMON CORE STANDARD—2.G.A.2**
Reason with shapes and their attributes.

Use color tiles to cover the rectangle. Trace around the square tiles. Write how many.

1. 

Number of rows: ____
Number of columns: ____
Total: ____ square tiles

2. 

Number of rows: ____
Number of columns: ____
Total: ____ square tiles

Problem Solving Real World

Solve. Write or draw to explain.

3. Nina wants to put color tiles on a square. 3 color tiles fit across the top of the square. How many rows and columns of tiles will Nina need? How many square tiles will she use in all?

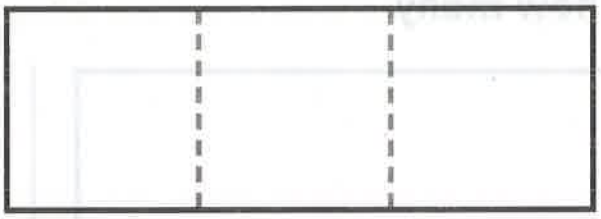
Number of rows: ____
Number of columns: ____
Total: ____ square tiles

4. WRITE Math Look at Exercise 1 above. Is there a different rectangle that you could cover with 6 color tiles? Explain.

_____

Lesson Check (2.G.A.2)

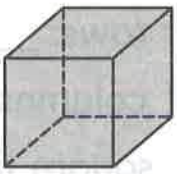
1. Gina uses color tiles to cover the rectangle. How many square tiles does she use?



____ square tiles

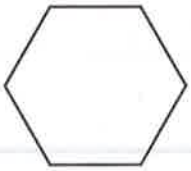
Spiral Review (2.MD.D.10, 2.G.A.1)

2. How many faces does a cube have?



____ faces

3. How many angles does this shape have?



____ angles

4. Use the tally chart. How many more children chose art than reading?

Favorite Subject	
Subject	**Tally**
reading	𝍸 | | |
math	𝍸 | | | |
science	𝍸
art	𝍸 𝍸

____ more children

2nd Grade
NTI Packet
Day 28

Genre: Science Article

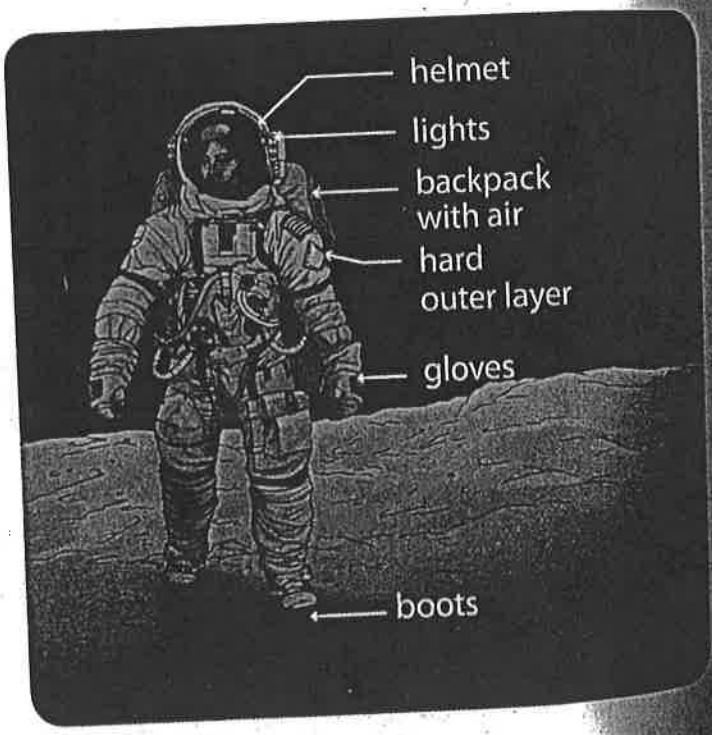
Read

Read the science articles. Then answer the questions that follow.

Spacesuits and Spaceships

by Ron Fridell

1 What can you see at Space Center Houston? Why, exhibits of course! My favorite is the Astronaut Gallery. It shows the spacesuits that astronauts wear. Why must they wear them?



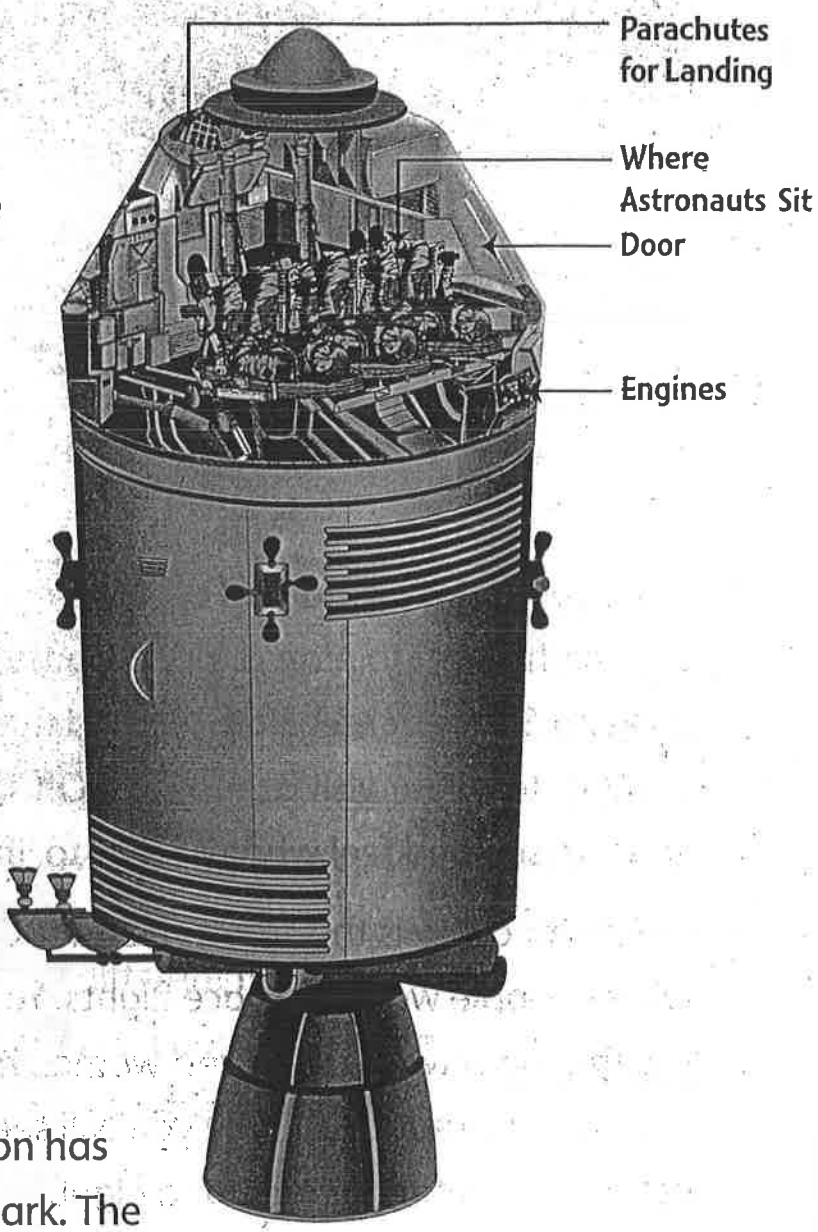
Spacesuit

2 These space travelers must wear a spacesuit when they go outside the ship. The astronauts test new equipment and do experiments. There is no oxygen in outer space. The suit gives them air to breathe.

3 It also protects them from the heat and cold. In the sunlight, it can be as hot as 250 degrees! In shadow, it can be as cold as minus 250 degrees! A spacesuit is like a little spaceship. It keeps the astronaut safe.

4 Now let's take a look at the Apollo 17 command module. This is part of the ship that carried three astronauts to the Moon and back in 1972. One of them stayed inside it, circling the Moon. The other two flew down to explore the Moon's surface.

Apollo 17 Command Module

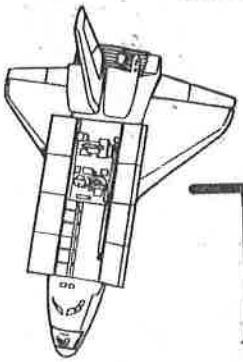


5 Notice that the diagram on this page shows a place at the top for parachutes. When the ship returned to Earth, the parachutes helped slow it down. It landed in the ocean with the crew safe and sound.

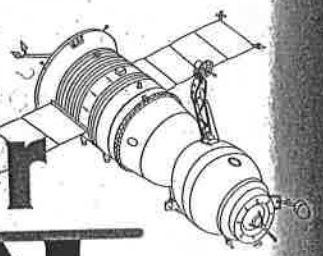
6 Finally, Space Center Houston has a *Saturn Five* rocket in Rocket Park. The ship is set down on its side, so that you can walk all around it. The rocket is as long as a football field. It weighs more than six million pounds. A rocket just like it took the Apollo 17 astronauts up into space, and then fell back to Earth.

7 There's lots more to see at the Space Center. And there's lots more to learn.

Genre: Science Article



Space Center HOUSTON

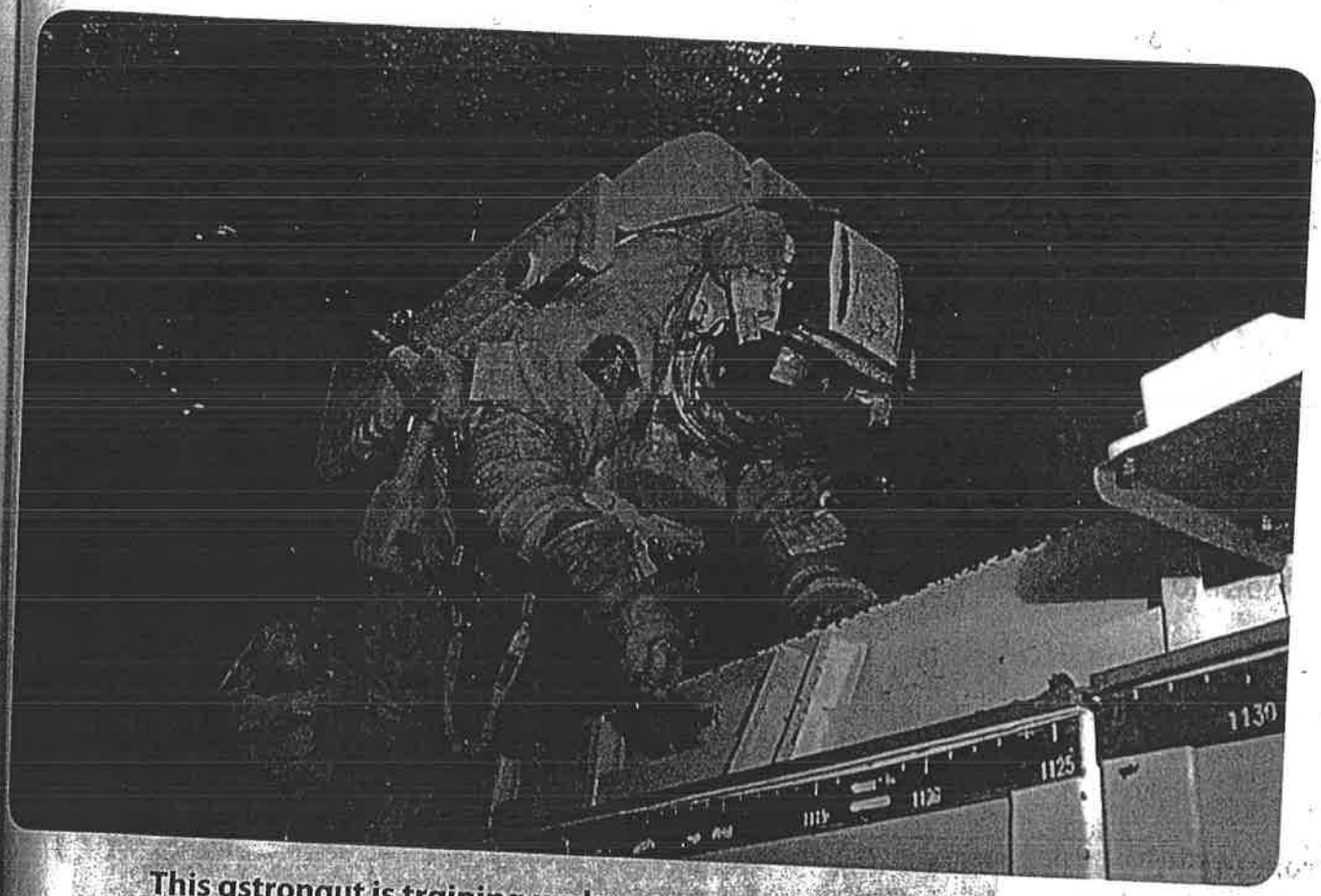


by Emily Paul

1 Have you ever dreamed of being an astronaut? If so, you might want to plan a trip to Houston, Texas. You can visit Space Center Houston and the Johnson Space Center. Start your visit at the Blast Off Theater. Here, you can see and feel what it is like to lift off into space!

2 Not far away is the Johnson Space Center. This is where people work on space flights. You might get to see the room where men and women help the astronauts in space. Maybe you will see some astronauts getting ready for a flight.

3 Be sure to look for the Astronaut Gallery. This big room is filled with real spacesuits. The walls have pictures of people who have flown in space. Part of the Gallery is called Living in Space. It shows how astronauts work, eat, and sleep in space.



This astronaut is training underwater at the Johnson Space Center.

4 Moving around in space is very different from the way we move on Earth. Astronauts can float inside the space station. They must learn how to safely move without bumping into things.

5 Even eating and sleeping are different on a space station. Astronauts need to hang on to what they are eating or it will float away! Most space food is kept in plastic containers. Drinks come in sealed pouches and are sipped with a straw. When it's time to go to bed, astronauts climb into small sleeping bags and tie themselves in. This is so they don't float around while they are sleeping!

6 Before you leave, don't forget to visit the Kids' Space Place. It is a giant inside playground. You can pretend you are flying the space shuttle. Or you can imagine that you live on the space station. It is the perfect way to end your busy day.

Astronaut Chris Hadfield is juggling some tomatoes on the International Space Station. Can you guess why they are floating?

Think

1 Look at the diagram of the Apollo 17 command module on page 341. Which sentence from "Spacesuits and Spaceships" tells more about this diagram?

A "The astronauts test new equipment and do experiments."

B "This is part of the ship that carried three astronauts to the Moon and back in 1972."

C "Finally, Space Center Houston has a *Saturn Five* rocket in Rocket Park."

D "The ship is set down on its side, so that you can walk all around it."

2 What does the diagram on page 341 show that is **not** told about in the article?

A It shows that the command module had parachutes for landing.

B It shows that the astronauts floated inside the command module.

C It shows that the command module had its own engines.

D It shows that the astronauts wore spacesuits outside the command module.

3 In paragraph 3 of "Spacesuits and Spaceships," the author makes the point that a spacesuit is like a little spaceship. What reason from the article **best** explains this point?

A "Why must they wear them?"

B "It also protects them from the heat and cold."

C "In the sunlight, it can be as hot as 250 degrees!"

D "In shadow, it can be as cold as minus 250 degrees!"

4 Choose **two** sentences from "Spacesuits and Spaceships" that the diagram of a spacesuit on page 340 helps to explain.

A "These space travelers must wear a spacesuit when they go outside the ship."

B "The astronauts test new equipment and do experiments."

C "There is no oxygen in outer space."

D "The suit gives them air to breathe."

E "In the sunlight, it can be as hot as 250 degrees!"

5 Underline the sentence below that **best** explains what is happening in the picture on page 344.

Even eating and sleeping are different on a space station. Astronauts need to hang on to what they are eating or it will float away! Most space food is kept in plastic containers. Drinks come in sealed pouches and are sipped with a straw. When it's time to go to bed, astronauts climb into small sleeping bags and tie themselves in. This is so they don't float around while they are sleeping!

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

Part A

In paragraphs 4 and 5 of "Space Center Houston," what key point does the author make about floating inside the space station?

A Astronauts must learn to move safely.

B Astronauts must always wear a spacesuit.

C Astronauts must drink from a straw.

D Astronauts must sleep in sleeping bags.

Part B

What reason does the author give to explain the key point she makes about floating inside the space station?

7 In "Space Center Houston," the author makes the point that readers should visit the Astronaut Gallery. Choose **two** details from the article that support this point.

A The gallery is filled with food and drink.
B The gallery lets you pretend to fly a space shuttle.
C The gallery shows how astronauts work.
D The gallery tells how to get to the space station.
E The gallery has real spacesuits.

8 Read the sentences from "Space Center Houston" below.

Most space food is kept in plastic containers. Drinks come in sealed pouches and are sipped with a straw.

Which choice **best** tells what "sealed pouches" are?

A covered drinking glasses
B tightly closed bags
C holes for straws
D large pockets

9 Which important point is in "Space Center Houston" but **not** in "Spacesuits and Spaceships"?

A People work on real space flights at the Johnson Space Center.
B Astronauts went to the Moon in the Apollo 17 command module.
C Astronauts do experiments when they go outside the ship.
D The *Saturn Five* rocket in Rocket Park is as long as a football field.

10 Which important point is in **both** articles?

A Parachutes help slow down a returning spaceship.
B Real spacesuits can be found in the Astronaut Gallery.
C The *Saturn Five* rocket weighs more than six million pounds.
D Space can be as cold as minus 250 degrees.

Write

Extended Response Compare and contrast the **most** important points in the articles about living in space. What points are the same? What are ways the information about living in space in "Spacesuits and Spaceships" is **different** from the information in "Space Center Houston"?

11 **Plan Your Response** Reread the two articles. What important points does each writer include about living in space? Underline these important points in both articles. Then fill in the chart below to compare and contrast them.

Important Points About the Way Astronauts Live in Space

Spacesuits and Spaceships	Space Center Houston
Point 1:	**Point 1:**
Point 2:	**Point 2:**
Point 3:	**Point 3:**

Name _____

Equal Parts

Essential Question What are halves, thirds, and fourths of a whole?

Common Core **Geometry—2.G.A.3**

MATHEMATICAL PRACTICES
MP3, MP6, MP8

Listen and Draw

Hands On

Put pattern blocks together to match the shape of the hexagon. Trace the shape you made.

Math Talk

MATHEMATICAL PRACTICES 3

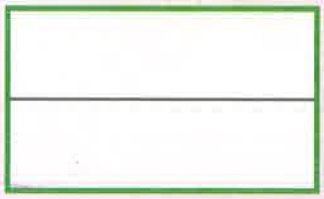
Compare models

Describe how the shapes you used are different from the shapes a classmate used.

FOR THE TEACHER • Have children place a yellow hexagon pattern block on the workspace and make the same shape by using any combination of pattern blocks. Discuss how they know if the outline of the blocks they used is the same shape as the yellow hexagon.

Model and Draw

The green rectangle is the whole.
It can be divided into equal parts.



There are 2 **halves**.
Each part is a half.

There are 3 **thirds**.
Each part is a third.

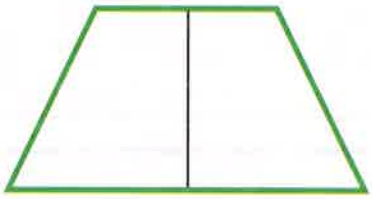
There are 4 **fourths**.
Each part is a fourth.

Share and Show

MATH BOARD

Write how many equal parts there are in the whole.
Write **halves**, **thirds**, or **fourths** to name the equal parts.

1.



_____ equal parts

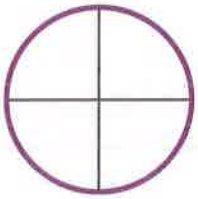
_____

2.

_____ equal parts

_____

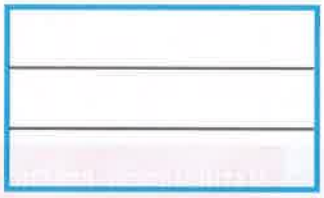
3.



_____ equal parts

_____

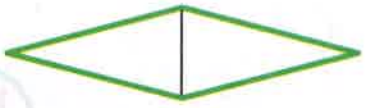
4.



_____ equal parts

_____

5.



_____ equal parts

_____

6.

_____ equal parts

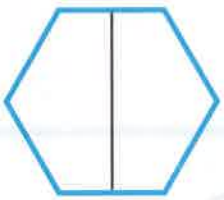
_____

Name _____

On Your Own

Write how many equal parts there are in the whole.
Write **halves**, **thirds**, or **fourths** to name the equal parts.

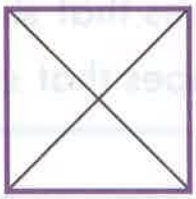
7.



_____ equal parts

_____

8.



_____ equal parts

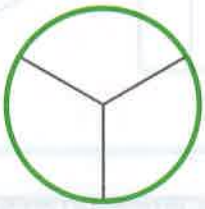
_____

9.

_____ equal parts

_____

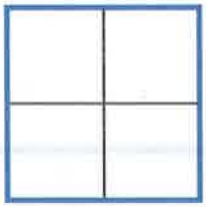
10.



_____ equal parts

_____

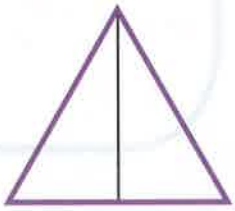
11.



_____ equal parts

_____

12.



_____ equal parts

_____

13. THINK SMARTER Draw to show halves. Explain how you know that the parts are halves.

_____

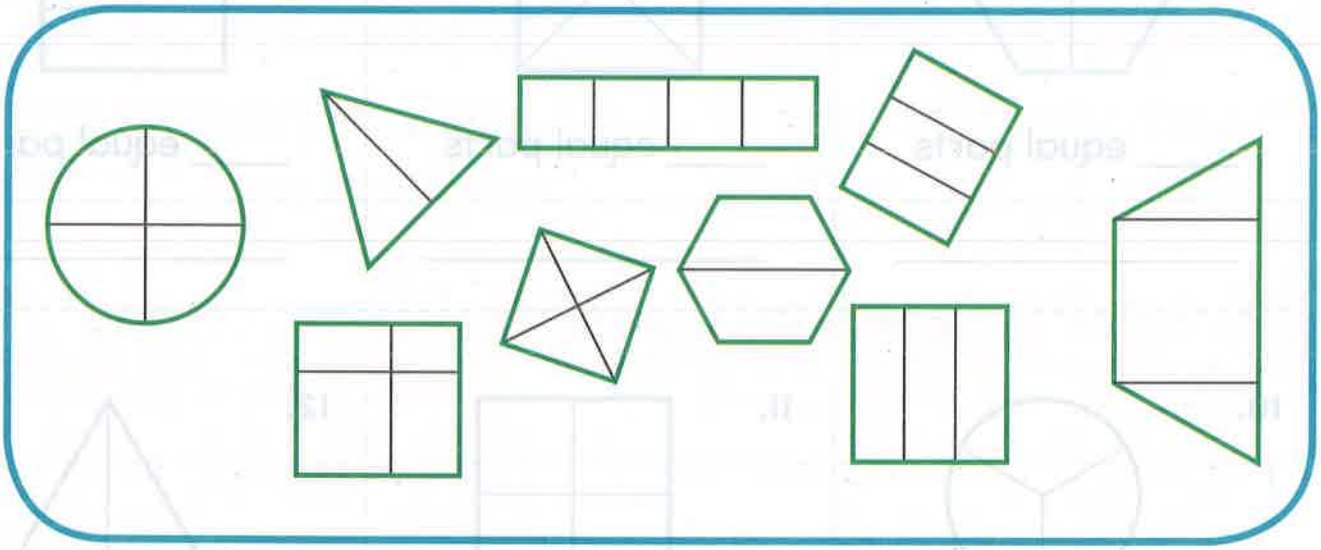
_____

_____

Problem Solving • Applications (Real World) WRITE Math

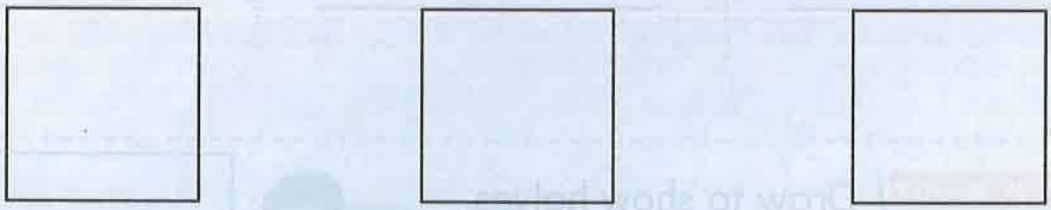
14. MATHEMATICAL PRACTICE 6 **Make Connections** Sort the shapes.

- Draw an X on shapes that do **not** show equal parts.
- Use red to color the shapes that show thirds.
- Use blue to color the shapes that show fourths.



Personal Math Trainer

15. THINK SMARTER+ Draw lines to show fourths three different ways.



Explain how you know that the parts are fourths.

_____

_____

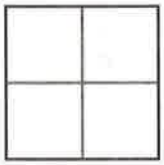
TAKE HOME ACTIVITY • Ask your child to fold one sheet of paper into halves and another sheet of paper into fourths.

Name _____

Equal Parts

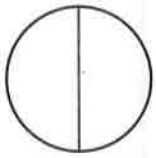
Common Core **COMMON CORE STANDARD—2.G.A.3**
Reason with shapes and their attributes.

Write how many equal parts there are in the whole.
Write halves, thirds, or fourths to name the equal parts.

1. 

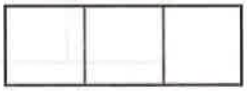
_____ equal parts

_____

2. 

_____ equal parts

_____

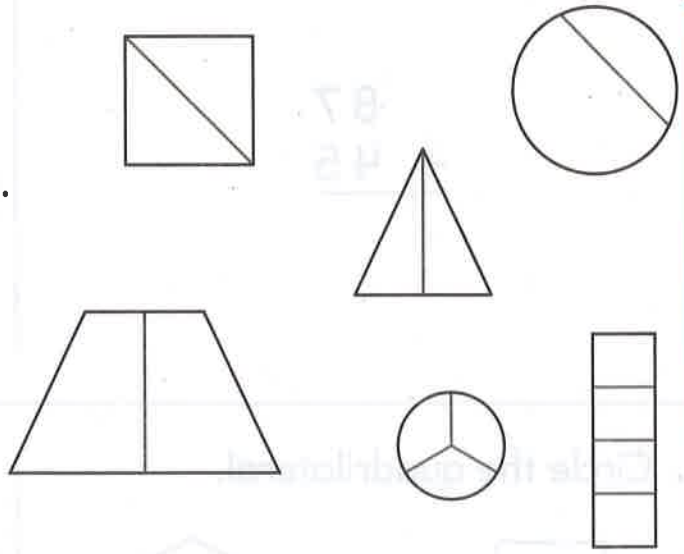
3. 

_____ equal parts

_____

Problem Solving Real World

4. Sort the shapes.
   - Draw an X on the shapes that do not show equal parts.
   - Circle the shapes that show halves.



5. WRITE Math Look at the shapes in Exercise 4. Describe the shapes that you did not put an X on or circle.

_____

_____

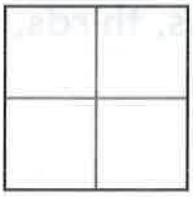
_____

Lesson Check (2.G.A.3)

1. What are the 3 equal parts of the shape called?

_____

2. What are the 4 equal parts of the shape called?



_____

Spiral Review (2.NBT.B.5, 2.G.A.1)

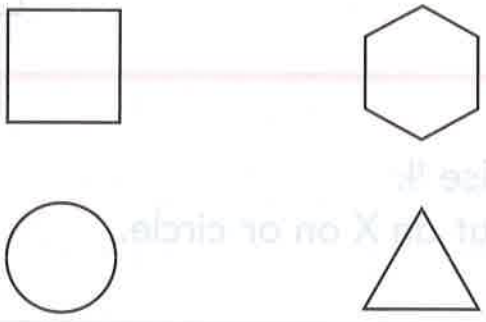
3. What is the sum?

$$\begin{array}{r} 87 \\ +\ 45 \\ \hline \end{array}$$

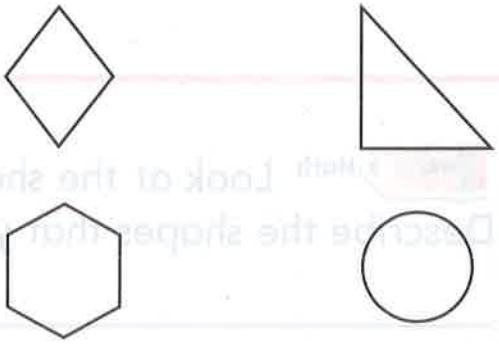
4. What is the difference?

$$\begin{array}{r} 59 \\ -\ 15 \\ \hline \end{array}$$

5. Circle the quadrilateral.



6. Circle the hexagon.



2nd Grade
NTI Packet
Day 29

Read

Genre: Social Studies Article

WORDS TO KNOW

As you read, look inside, around, and beyond these words to figure out what they mean.

- **temperature**
- **heartbeat**
- **operation**
- **medicine**

Who Works in a Hospital?

by Tiffany Gibson

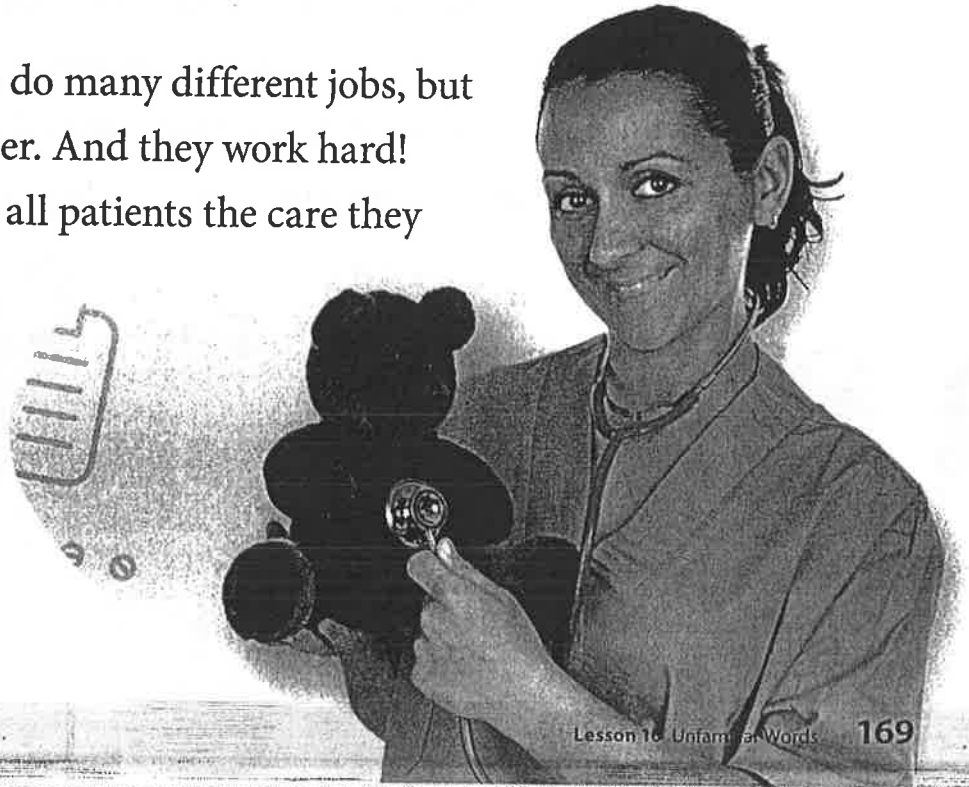
1 A hospital is a busy place! It may even seem confusing at first. Many patients, the people who need to see a doctor, come in every day. Visitors come to see their sick family member or friend. Doctors, nurses, and other hospital workers move calmly from job to job. They know just what to do. They want to give sick or hurt patients the care they need.

2 The hospital medical staff is made up of teams of doctors and nurses. Doctors must examine patients to find the best way to make them better. They check each patient's temperature and heartbeat. They also ask lots of questions. Then doctors think up plans to make each patient better. Some patients will need special medicine. Other patients may need to have an operation. A person who is sick or hurt must stay in the hospital for a few days.

3 Nurses take care of patients who are in the hospital. Some nurses help doctors with operations or special tests. They make sure patients improve each day. They check that the patients are getting better with the right medicine.

4 There are other workers who help the hospital run smoothly. Some workers give X-rays to find out if someone has a broken bone. Others carry out tests to find out why a patient is sick. Some workers make healthy meals or keep hospital rooms clean.

5 Hospital workers do many different jobs, but they all work together. And they work hard! Their goal is to give all patients the care they need to get better.



Think Using what you learned by reading "Who Works in a Hospital?," respond to the following questions.

1 What is the meaning of the word "patients"? Write what "patients" means based on the clues in the sentence.

Many patients, the people who need to see a doctor, come in every day.

2 What is the meaning of the phrase "medical staff" in paragraph 2?

A people who keep files of plans
B people who treat the sick
C people who keep things clean
D people who prepare meals

3 Read these sentences from paragraph 2 of the passage.

Doctors must examine patients to find the best way to make them better. They check each patient's temperature and heartbeat. They also ask lots of questions.

What does the word "examine" mean?

A make plans for
B do surgery on
C give medicine to
D check over carefully

4 The following question has two parts. First, answer Part A. Then answer Part B.

Part A

Use the chart to write the clues for the phrase "hospital workers." Write the phrase in the first box. After you write the clues, write what you think the phrase means.

Phrase:

Clue

Meaning

Part B

What is the goal of all the hospital workers?

- **A** to check that the patients are getting better
- **B** to give the patients the care they need to get better
- **C** to check each patient's temperature and heartbeat
- **D** to keep files about the doctors' plans

5 In paragraph 3, the author says, "They make sure patients improve each day." What does the word "improve" mean? Write a sentence from the passage that gives a clue about the meaning of the word "improve."

Write what you think the word "improve" means.

Write Why is a hospital a busy place?

6 **Plan Your Response** The title of the passage is "Who Works in a Hospital?" It begins with the sentence "A hospital is a busy place!" Find clues in the passage that tell why it is a busy place.

Busy Place

Clue One	Clue Two	Clue Three

7 **Write an Extended Response** Write about the information you found to tell why a hospital is a busy place.

Name _____

Show Equal Parts of a Whole

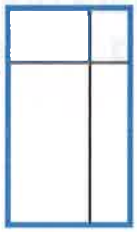
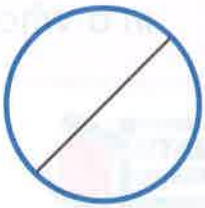
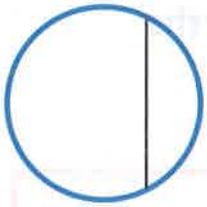
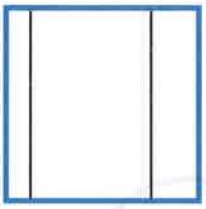
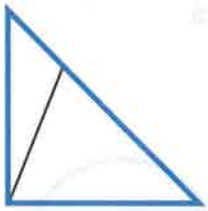
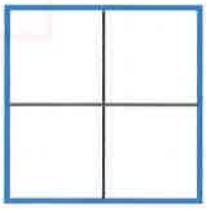
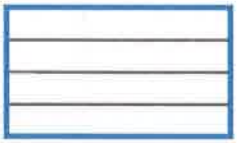
Essential Question How do you know if a shape shows halves, thirds, or fourths?

Common Core **Geometry—2.G.A.3**

MATHEMATICAL PRACTICES
MP5, MP6

Listen and Draw

Circle the shapes that show equal parts.

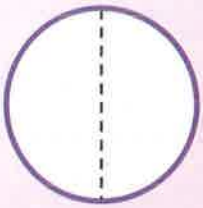
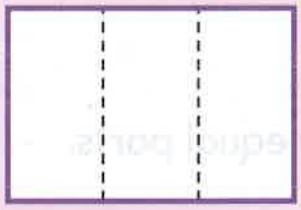
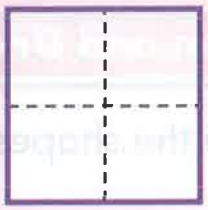
Math Talk MATHEMATICAL PRACTICES 6

Does the triangle show halves? **Explain.**

HOME CONNECTION • Your child completed this sorting activity with shapes to review the concept of equal parts.

Model and Draw

You can draw to show equal parts of a whole.

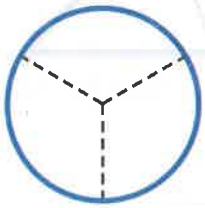
halves 2 equal parts	thirds 3 equal parts	fourths 4 equal parts
		
There are 2 halves in a whole.	There are 3 thirds in a whole.	There are 4 fourths in a whole.

Share and Show

MATH BOARD

Draw to show equal parts.

1. thirds



2. halves

3. fourths

4. halves

5. fourths

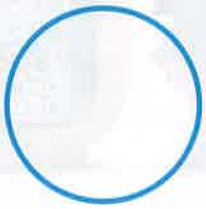
6. thirds

Name _____

On Your Own

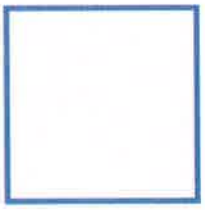
Draw to show equal parts.

7. halves



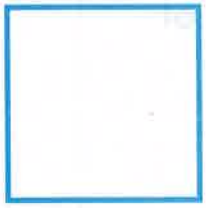
8. fourths

9. thirds



10. thirds

11. halves



12. fourths

13. halves

14. thirds

15. fourths

16. Does this shape show thirds?
Explain.

_____

_____

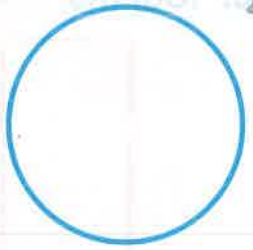
_____

_____

Problem Solving • Applications Real World

WRITE Math

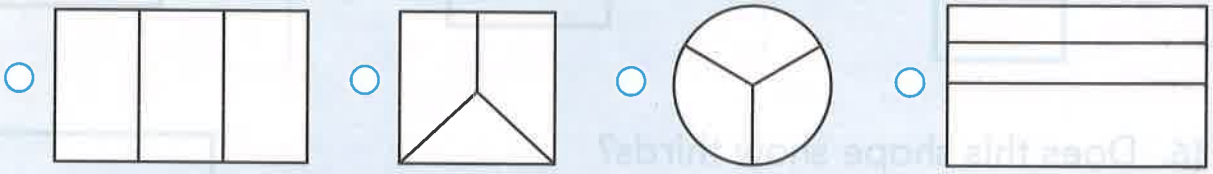
17. Colton and three friends want to share a pizza equally. Draw to show how the pizza should be divided.



18. GO DEEPER There are two square pizzas. Each pizza is cut into fourths. How many pieces of pizza are there?

_____ pieces

19. THINK SMARTER Fill in the bubble next to the shapes that show thirds. Explain your answer.



_____

_____

TAKE HOME ACTIVITY • Have your child describe how to show equal parts of a shape.

Name _____

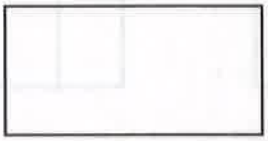
Show Equal Parts of a Whole

Common Core **COMMON CORE STANDARD—2.G.A.3**
Reason with shapes and their attributes.

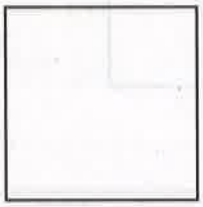
Draw to show equal parts.

1. halves

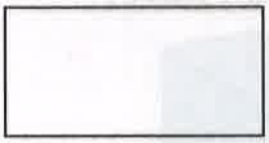
2. fourths



3. thirds

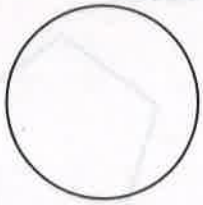


4. thirds



5. halves

6. fourths



Problem Solving Real World

Solve. Write or draw to explain.

7. Joe has one sandwich. He cuts the sandwich into fourths. How many pieces of sandwich does he have?

____ pieces

8. WRITE Math Draw three rectangles. Then draw to show halves, thirds, and fourths. Write about each whole that you have drawn.

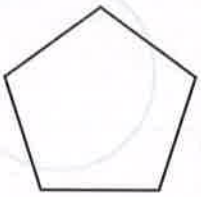
_____

Lesson Check (2.G.A.3)

1. Circle the shape divided into fourths.

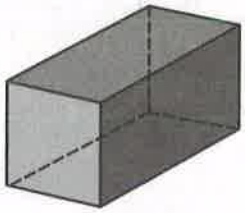
Spiral Review (2.MD.A.4, 2.G.A.1)

2. How many angles does this shape have?



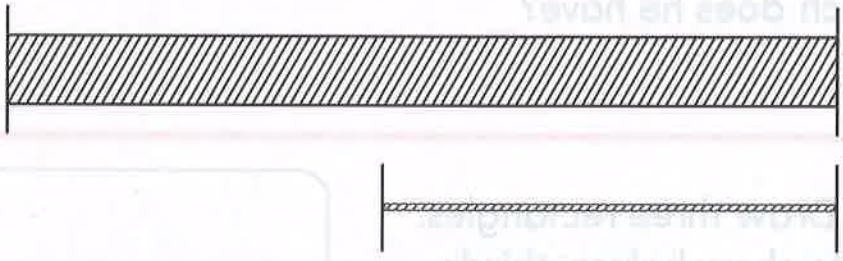
____ angles

3. How many faces does a rectangular prism have?



____ faces

4. Use a centimeter ruler. Measure the length of each object. How much longer is the ribbon than the string?



____ centimeters longer

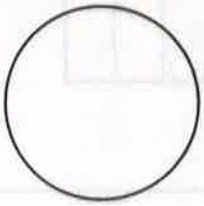
Name _____

Show Equal Parts of a Whole

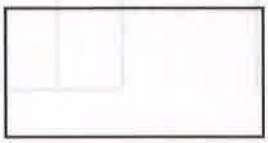
Common Core **COMMON CORE STANDARD—2.G.A.3**
Reason with shapes and their attributes.

Draw to show equal parts.

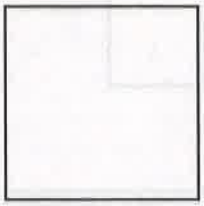
1. halves



2. fourths



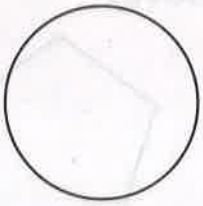
3. thirds



4. thirds

5. halves

6. fourths



Problem Solving Real World

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_____

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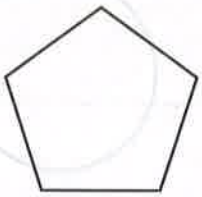
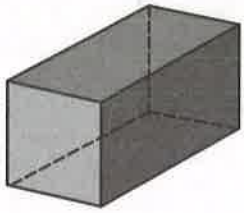


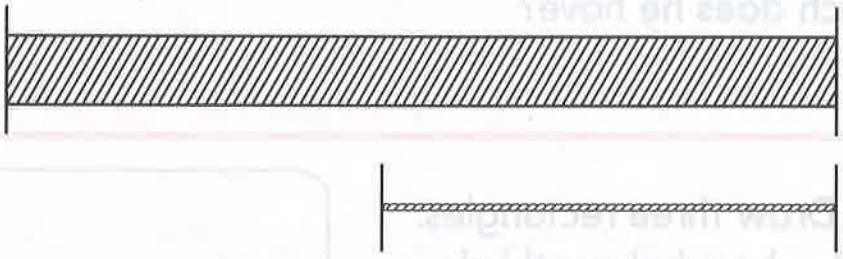
____ angles

3. How many faces does a rectangular prism have?



____ faces

4. Use a centimeter ruler. Measure the length of each object. How much longer is the ribbon than the string?



____ centimeters longer

2nd Grade
NTI Packet
Day 30

Read

Genre: Science Article

Levers and Pulleys

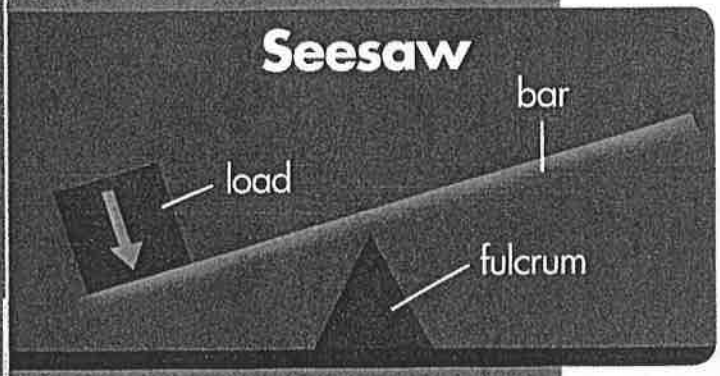
by Julian Green

WORDS TO KNOW

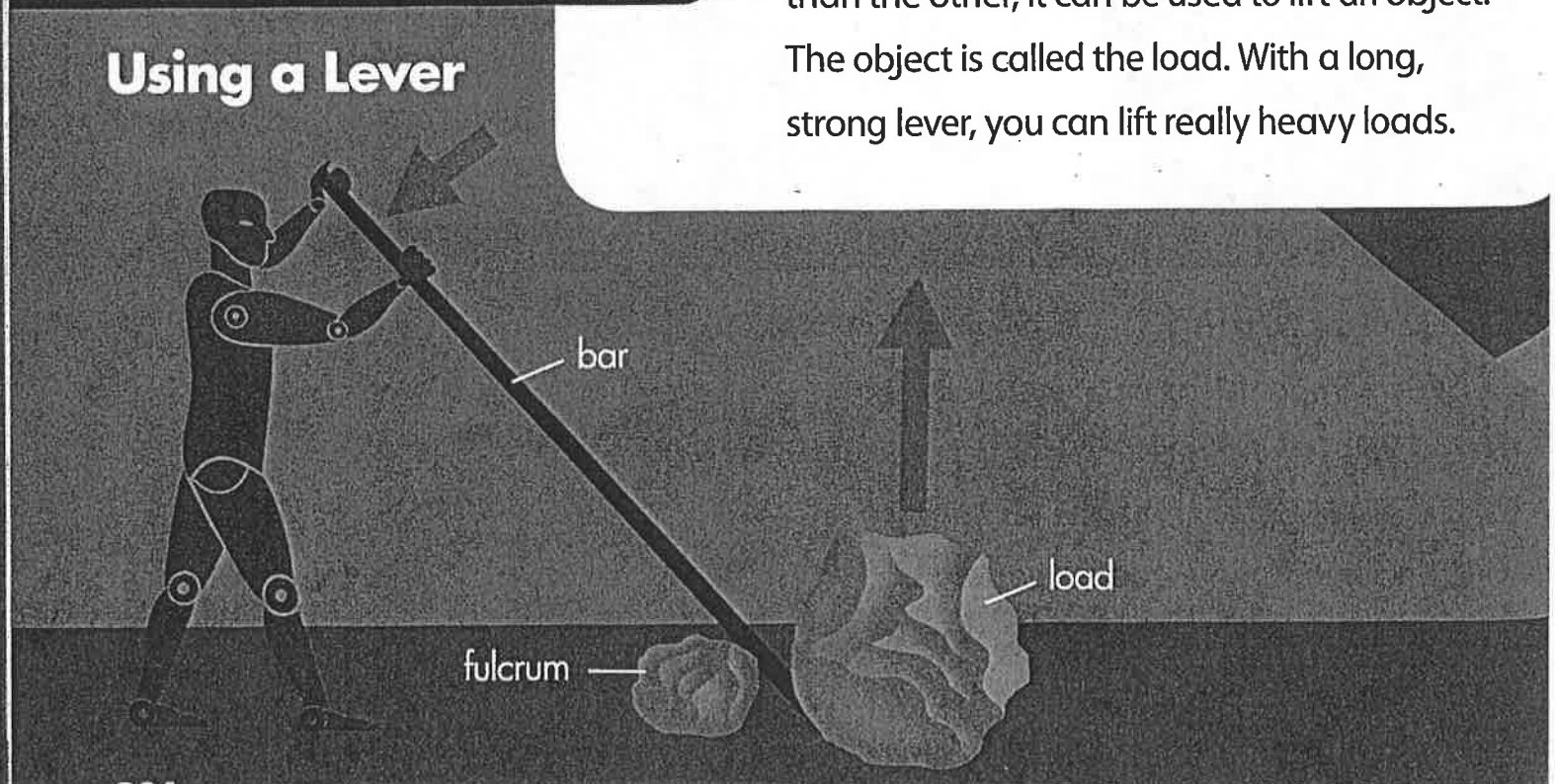
As you read, look inside, around, and beyond these words to figure out what they mean.

- **motor**
- **seesaw**

1 What is a machine? You might think it's something that has a motor. But a machine is any tool that helps us move things. Two simple machines are levers and pulleys.

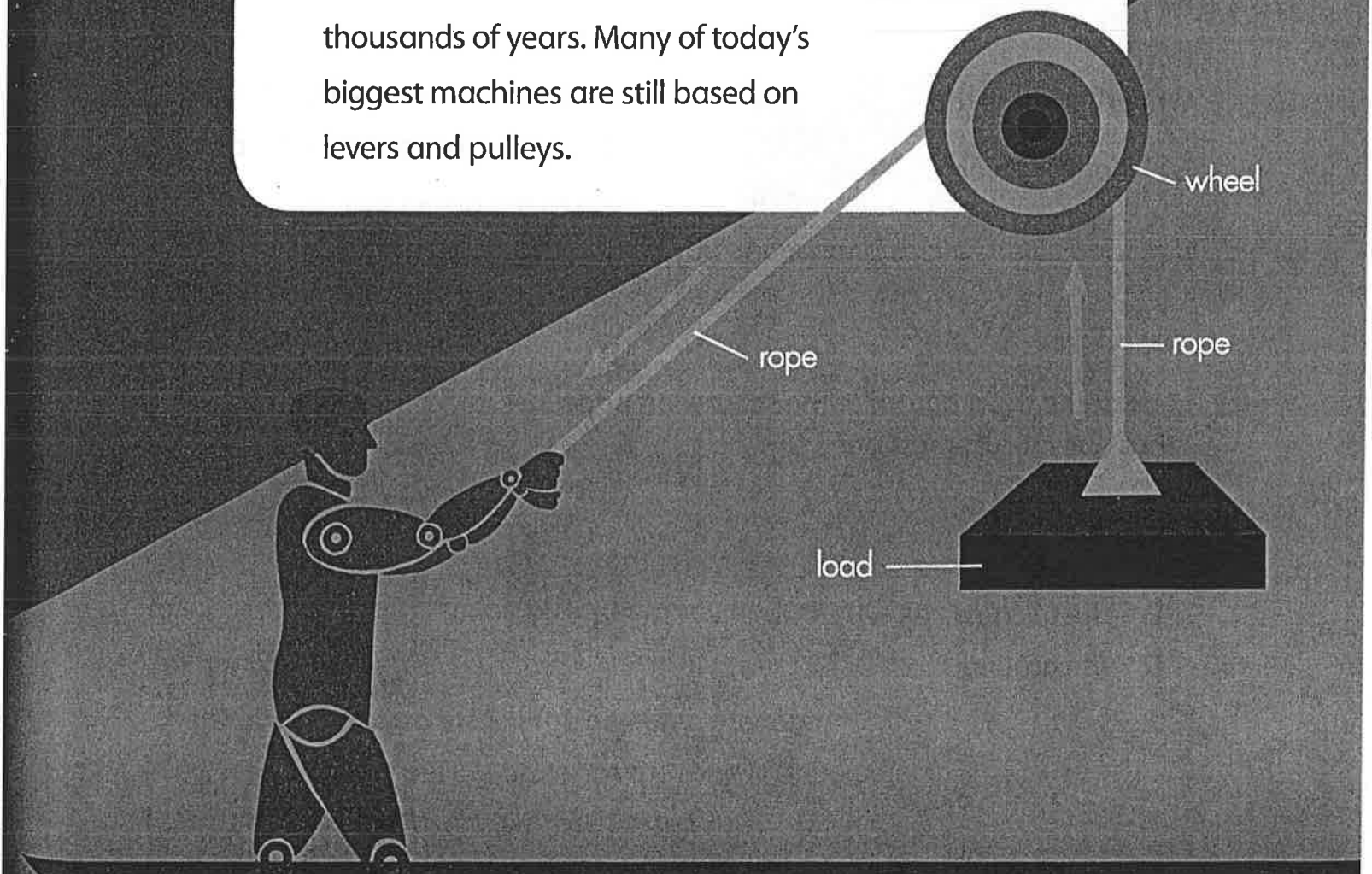


2 A lever is made of a solid bar and a fulcrum. The fulcrum is the spot that the bar rests on. It is close to the object you are lifting. When one end of the bar goes down, the other end goes up, like a seesaw. If one end of the bar is longer than the other, it can be used to lift an object. The object is called the load. With a long, strong lever, you can lift really heavy loads.



3 A pulley is another kind of machine. It can also be used to lift a load. It is made of a rope and a wheel. The rope passes over the wheel. When you pull down on one end of the rope, the other goes up. If something is tied to the rope, it goes up, too. You might have window blinds that work this way.

4 Machines like these have been used for thousands of years. Many of today's biggest machines are still based on levers and pulleys.



Using a Pulley

Think Use what you learned from reading "Levers and Pulleys" to respond to these questions.

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

Part A

Which of the following **best** tells what a "machine" is?

- **A** anything that has a motor
- **B** a tool that helps us move things
- **C** tools made with wheels and fulcrums
- **D** anything used to lift heavy loads

Part B

Write the words that name two simple machines.

motor lever fulcrum pulley load pivot

_____

_____

2 Look at the the diagram of the seesaw on page 304. What does the bar rest on?

- **A** a wheel
- **B** the load
- **C** the fulcrum
- **D** the ground

3 What do the diagrams of a lever and a pulley in the article show?

- **A** how to make objects easier to move
- **B** how to have fun with a simple machine
- **C** how to use a rope to lift something
- **D** how to use a bar to move something

4 Look carefully at the diagram showing a person moving a rock. What does it show about using a lever to lift something?

- **A** The center of the bar should rest on the fulcrum.
- **B** The bar should be long and very heavy.
- **C** The fulcrum should be closer to the person.
- **D** The fulcrum should be closer to the load.

5 How do the text and the diagrams help you understand the meaning of "load"?

_____

_____

_____

6 How does the diagram of the pulley help you understand how to use a pulley?

- **A** It shows how to attach the object to the rope.
- **B** It shows how pulling down on the rope lifts the object.
- **C** It shows how fast the wheel has to turn.
- **D** It shows how hard a person needs to pull.

scribe Equal Parts

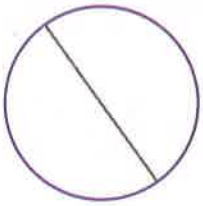
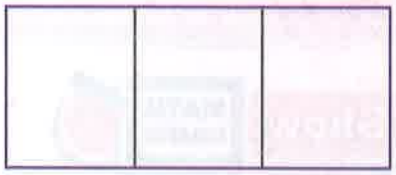
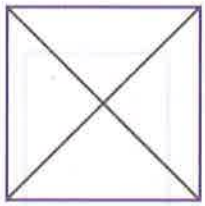
sential Question How do you find a half of, third of, or a fourth of a whole?

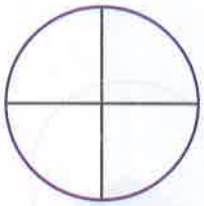
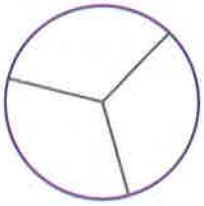
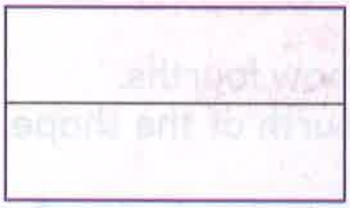
Common Core Geometry—2.G.A.3

MATHEMATICAL PRACTICES
MP3, MP4, MP6

Listen and Draw

Find shapes that show fourths and color them green.
Find shapes that show halves and color them red.

Math Talk MATHEMATICAL PRACTICES 3

Describe how the thirds in the unshaded shapes compare to each other.

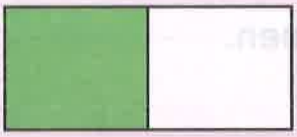
HOME CONNECTION • Your child identified the number of equal parts in shapes to review describing equal parts of a whole.

Model and Draw

These are some ways to show and describe an equal part of a whole.

1 of 4 equal parts is called a **quarter of** that shape.

2 equal parts



A **half of** the shape is green.

3 equal parts

A **third of** the shape is green.

4 equal parts

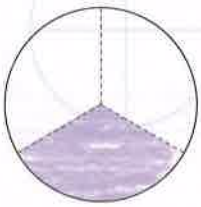
A **fourth of** the shape is green.

Share and Show

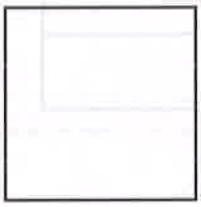
MATH BOARD

Draw to show thirds.
Color a third of the shape.

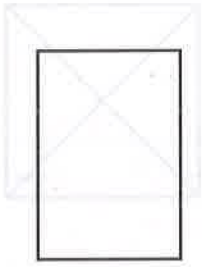
1.



2.

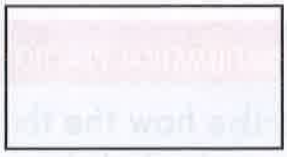


3.

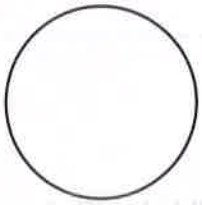


Draw to show fourths.
Color a fourth of the shape.

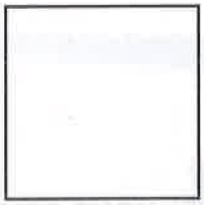
4.



5.

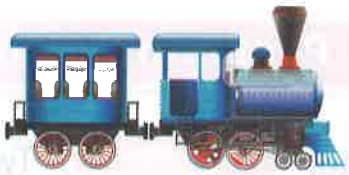


6.



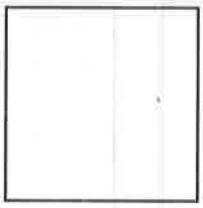
e _____

On Your Own

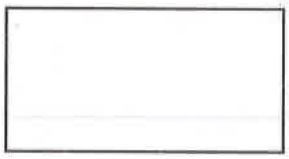


Draw to show halves.
Color a half of the shape.

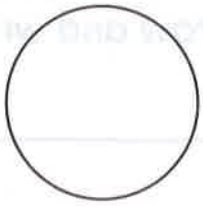
7.



8.



9.



Draw to show thirds.
Color a third of the shape.

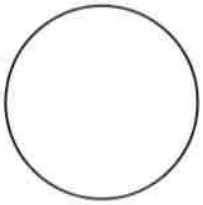
10.

11.

12.

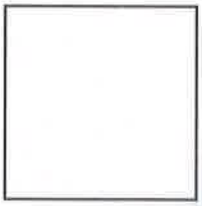
Draw to show fourths.
Color a fourth of the shape.

13.



14.

15.



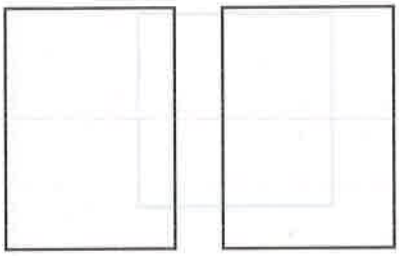
Problem Solving • Applications Real World

WRITE Math

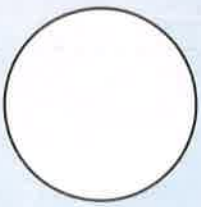
Math on the Spot

16. THINK SMARTER Two posters are the same size. A third of one poster is red, and a fourth of the other poster is blue.

Is the red part or the blue part larger? Draw and write to explain.



17. THINK SMARTER Draw to show halves, thirds, and fourths. Color a half of, a third of, or a fourth of the shape.



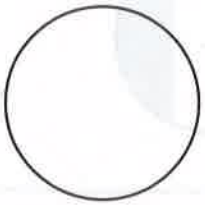
TAKE HOME ACTIVITY • Draw a square. Have your child draw to show thirds and color a third of the square.

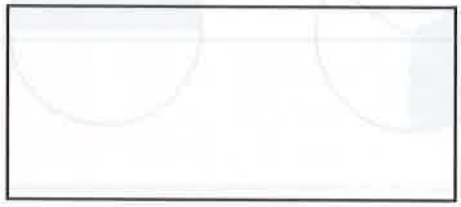
Name _____

Describe Equal Parts

Common Core **COMMON CORE STANDARD—2.G.A.3**
Reason with shapes and their attributes.

Draw to show halves.
Color a half of the shape.

1. 

2. 

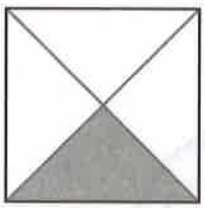
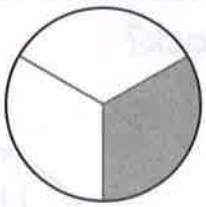
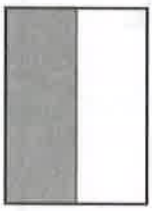
Draw to show thirds.
Color a third of the shape.

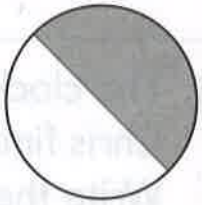
3. 

4. 

Problem Solving Real World

5. Circle all the shapes that have a third of the shape shaded.

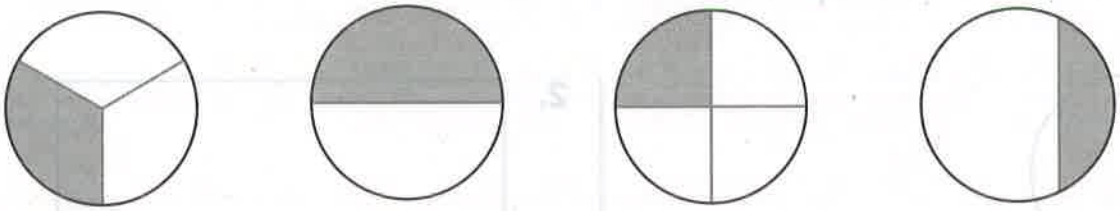






6. WRITE Math Draw pictures to show a third of a whole and a fourth of a whole. Label each picture.

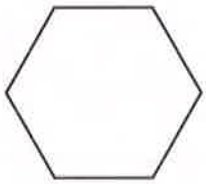
Lesson Check (2.G.A.3)

1. Circle the shape that has a half of the shape shaded.



Spiral Review (2.MD.A.1, 2.MD.C.7, 2.G.A.1)

2. What is the name of this shape?



_____

3. Use a centimeter ruler. What is the length of the string to the nearest centimeter?

____ centimeters

4. The clock shows the time Chris finished his homework. Write the time. Then circle a.m. or p.m.

____ : ____ a.m. p.m.

5. What time is shown on this clock?

____ : ____