# 4th Grade Week 3

## Monday

<table>
<thead>
<tr>
<th>Subject</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>English Language Arts: ELAGSE4RI3</strong></td>
<td>Print and begin <em>Understanding Historical Texts</em></td>
</tr>
<tr>
<td><strong>Math: MGSE4.G.1</strong></td>
<td>Print and complete <em>Introduction: Points, Lines, Rays and Angles</em></td>
</tr>
<tr>
<td><strong>Physical Education: PE4.1.b</strong></td>
<td>Locomotor Movement Assessment: Spend 10 minutes practicing the locomotion patterns of hopping, galloping, running, sliding, skipping, and jumping. Spend 10 min. having someone assess your locomotor movements with the <em>rubric</em>. What movements do you need to improve on? Spend an extra 3-5 min practicing the movement that is the most challenging to you.</td>
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## Tuesday

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<tr>
<td><strong>English Language Arts: ELAGSE4RI3</strong></td>
<td>Complete <em>Understanding Historical Texts</em> from Monday</td>
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<tr>
<td><strong>Math: MGSE4.G.1</strong></td>
<td>Print and complete <em>Points, Lines, Rays and Angles Practice</em></td>
</tr>
<tr>
<td><strong>Art: VA4.CR.1</strong></td>
<td>Select one from the following list:</td>
</tr>
<tr>
<td><strong>Superhero Design</strong></td>
<td>Create a superhero and design an outfit for them. Color in with crayons, markers, oil pastels, colored pencils, etc.</td>
</tr>
<tr>
<td><strong>Hand Texture</strong></td>
<td>Trace your hand with a pencil or pen and fill it in with at least 6 different patterns and or textures.</td>
</tr>
<tr>
<td><strong>Color Wheel</strong></td>
<td>Create a color wheel using scraps of paper. Tape or glue the paper to a separate sheet of paper. Label the colors and themes.</td>
</tr>
<tr>
<td><strong>Texture Rubbing</strong></td>
<td>Use a crayon or pencil to create 4 different texture rubbings of textures you find in your house. Place your paper on top of the texture and rub with the side of the crayon or pencil</td>
</tr>
<tr>
<td><strong>Favorite Food Self Portrait</strong></td>
<td>Draw a self-portrait, of you wearing a hat made out of your favorite food. If possible, add color.</td>
</tr>
<tr>
<td><strong>Self Portrait</strong></td>
<td>Draw a self-portrait, of you that emphasizes one or more of your unique qualities.</td>
</tr>
<tr>
<td><strong>Who’s Got Mail</strong></td>
<td>Create a postcard that brings art and the state of Georgia together. If possible, send the postcard to someone through the mail.</td>
</tr>
<tr>
<td><strong>Landscape</strong></td>
<td>Create a landscape focusing on the weather. Include a foreground, middle ground and background. Add something that would not be expected in the season you are representing.</td>
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**Wednesday**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Task</th>
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<tbody>
<tr>
<td><strong>English Language Arts:</strong></td>
<td>ELAGSE4RI5</td>
</tr>
<tr>
<td><strong>Math:</strong></td>
<td>MGSE4.G.2</td>
</tr>
<tr>
<td><strong>Physical Education:</strong></td>
<td>PE4</td>
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</tbody>
</table>

<table>
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<tbody>
<tr>
<td>Print and complete <a href="#">Text Structures Part 2: Chronology and Problem Solution</a></td>
</tr>
<tr>
<td>Print and complete <a href="#">Introduction: Classify Two-Dimensional Figures</a></td>
</tr>
<tr>
<td>One Minute Fitness Challenge: Complete the attached one-minute fitness challenge card. See if you can complete each challenge, document how many of each exercise you did or how long each challenge took.</td>
</tr>
</tbody>
</table>

**Thursday**

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<tbody>
<tr>
<td><strong>English Language Arts:</strong></td>
<td>ELAGSE4RI6</td>
</tr>
<tr>
<td><strong>Math:</strong></td>
<td>MGSE4.G.2</td>
</tr>
<tr>
<td><strong>Music:</strong></td>
<td>ESGM4.RE.1</td>
</tr>
</tbody>
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<table>
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<tr>
<td>Print and begin <a href="#">Comparing Accounts of the Same Topic</a></td>
</tr>
<tr>
<td>Print and complete <a href="#">Classify Two-Dimensional Figures Practice</a></td>
</tr>
<tr>
<td>Review <a href="#">Woodwind Family Information Sheet</a></td>
</tr>
<tr>
<td>Print and complete <a href="#">Woodwind Worksheet 1</a></td>
</tr>
<tr>
<td>Print and complete <a href="#">Woodwind Worksheet 2</a></td>
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</tbody>
</table>

**Friday**

<table>
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<tr>
<td><strong>English Language Arts:</strong></td>
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<td><strong>Math:</strong></td>
<td>MGSE4.G.1 and MGSE4.G.2</td>
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<td>PE4.1.b and PE4.3.g</td>
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<tr>
<td>Complete <a href="#">Comparing Accounts of the Same Topic</a> from Thursday</td>
</tr>
<tr>
<td>Print and complete <a href="#">Geometry Vocabulary Match</a></td>
</tr>
<tr>
<td>Print and complete <a href="#">Triangle Vocabulary Match</a></td>
</tr>
<tr>
<td>Print and complete <a href="#">Classifying Shapes</a></td>
</tr>
<tr>
<td>Alphabet Fitness: Using the <a href="#">Alphabet Fitness</a> sheet, create and perform a 20 min. fitness circuit using your name, to make the workout longer try doing your first and last name, or even adding your middle name. Example: M-U-S-C-L-E</td>
</tr>
</tbody>
</table>

**Example: M-U-S-C-L-E**

- M - 5 Burpees
- U - 15 Squats
- S - 15 Mountain Climbers
- C - 10 Squats
- L - 10 Walking Lunges
- E - 20 Mountain Climbers

Fulton County Schools greatly appreciates the partnership with Curriculum Associates and the permission to provide TeleSchool English Language Arts and Math lessons to students in Grades 3-5.
Lesson 2
Understanding Historical Texts

Learning Target

Explaining information in historical texts, including what happened and why, can help you understand the connections among various events and ideas in the text.

Read Writers of historical texts often organize information to answer the questions “What happened?” and “Why did it happen?” This is sometimes called cause and effect. Cause and effect is a relationship in which one thing brings about, or causes, something else to occur. Historical texts don’t just describe several events or ideas. The texts also explain why they happened and why they matter.

Look at the illustrations below. One shows an event that happened. The other shows why it happened. Think about which event is which.
Think  Consider what you’ve learned about causes and effects and why writers use them to organize their writing. Remember, understanding what happened and why helps you understand what happens around you every day.

In the chart below, describe what happened in the first illustration. Then explain why the event happened.

<table>
<thead>
<tr>
<th>What Happened?</th>
<th>Why?</th>
</tr>
</thead>
</table>

Talk  Share your chart with a partner.

- Based on the events in the illustrations, what do you think the boy will do next?
- Explain why the boy will do that next.

Academic Talk  Use these words and phrases to talk about the text.

- cause and effect  
- information  
- historical text
When the first cars were produced, only wealthy people could afford them. Henry Ford wanted to build a car that the average working person could afford. In 1908, the Ford Motor Company introduced a new, low-cost car. It was called the Model T and sold for $825. Although the car was reasonably priced, Ford kept thinking of ways to make it even cheaper. He knew that the lower the price, the more customers he would gain and the more money he would make.

Ford’s early cars were all handcrafted. This meant that each automobile was slightly different from the next. It also meant that each took a long time to make. Ford decided his cars would no longer be handcrafted. They would be put together in exactly the same way, saving time and money. In 1913, Ford began producing cars with the help of a moving assembly line.

The moving assembly line achieved Ford’s goal of turning out a car faster and for increasingly lower prices. In time, Ford’s factory was turning out one automobile every 90 minutes. By 1915, the Ford Motor Company was earning record profits. And by 1918, half of all cars in the United States were Model Ts. Almost overnight, the United States became a nation on wheels.

Close Reader Habits

Underline words and phrases that help you figure out why more people began owning cars.
Explore  
How did the production of Henry Ford’s Model T lead to more people owning cars?

Think

1. What did the Ford Motor Company do in 1908 and 1913? Why did these events occur? Write the details in the chart.

<table>
<thead>
<tr>
<th>What Happened?</th>
<th>Why?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1908</td>
<td></td>
</tr>
<tr>
<td>1913</td>
<td></td>
</tr>
</tbody>
</table>

Talk

2. In 1913, Henry Ford decided his cars would no longer be handcrafted. Discuss how this decision led to a new way of making cars. Write down an idea you talked about with your partner.

Write

3. **Short Response** Explain why half of all cars in the United States were Model T’s by 1918. Include text details telling what happened and why. Use the space provided on page 30 to write your response.
Two centuries ago, bicycles did not look like the bikes you know today. Invented by a Frenchman around 1790, the first bicycle had two wheels and a wooden frame. It worked like a scooter. Then, in 1816, a German improved on this design. He connected a bar to the front wheel. This allowed the rider to steer the bicycle. Later, in 1839, a Scottish blacksmith made yet another improvement. He added foot pedals, which let riders put force on the wheels. Now bicycles could move faster.

In the 1870s, the “high-wheel” bicycle appeared. It was called this because the front wheel was far larger than the rear wheel. The pedals turned the front wheel only, but the size of that wheel meant that each turn of the pedals took the rider a greater distance than before. On the high-wheel bicycle, the rider sat up high, over the front wheel. Consequently, when the large front wheel struck a rut or rock in the road, the rider could be pitched head-first over the front of the bicycle! The high-wheel bicycle wasn’t very safe.

In 1885, an Englishman made the first “safety” bicycle. The bicycle was now beginning to look more like the modern one you see every day. Its front and rear wheels were the same size, and sprockets and chains linked the pedals and the rear wheel. In the 1890s, inventors added air-filled rubber tires. Then came a coaster brake and adjustable handlebars. The first hundred years of the bicycle—from 1790 to the 1890s—brought many changes, and the next century would bring even more improvements.
Think  Use what you learned from reading the article to respond to the following questions.

1  Reread paragraph 1. Choose the two statements that best tell why the bicycle was a better machine by 1839.
   A  A bar allowed the rider to steer.
   B  A wooden frame meant that the bicycle was lighter.
   C  Foot pedals meant that bicycles could move faster.
   D  The first bicycles could move like a scooter.
   E  The front wheel was larger than the rear wheel.

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

   Part A
   What conclusion can you draw about what happened to many riders of the bicycles described in paragraph 2?
   A  They would be able to see over other bicycle riders.
   B  They were likely to get hurt if they hit a rock.
   C  They could not go as fast using the larger wheels.
   D  They found ways to link the large and small wheels together.

   Part B
   Which two sentences in paragraph 2 best support the answer to Part A? Circle them in the passage.

Talk

3  Based on information in the text, what changes to bicycle designs came about in the 1800s? What can you conclude about why the designs kept changing?

Write

4  Short Response  Explain how the design of the bicycle was improved in the 1800s and why the changes were necessary. Use details from the text to support your answer. Use the space provided on page 31 to write your answer.

HINT  Be sure to use words that show why the changes were made, such as because and since.


3 Short Response  Explain why half of all cars in the United States were Model T’s by 1918. Include text details telling what happened and why.


Don’t forget to check your writing.
Write

Use the space below to write your answer to the question on page 29.

The Bicycles’ First Century

4 Short Response Explain how the design of the bicycle was improved in the 1800s and why the changes were necessary. Use details from the text to support your answer.

HINT

Be sure to use words that show why the changes were made, such as because and since.

Check Your Writing

☐ Did you read the prompt carefully?
☐ Can you put the prompt in your own words?
☐ Did you use the best evidence from the text to support your ideas?
☐ Are your ideas clearly organized?
☐ Did you write in clear and complete sentences?
☐ Did you check your spelling and punctuation?
Read

1. “Fulton’s Folly,” people jeered as they passed Browne’s Shipyard in New York City. It was 1807. Browne’s was the site where inventor Robert Fulton and his partner, Robert R. Livingston, Jr., were building a very strange boat. The two men knew that putting a steam engine onboard a vessel was still new and dangerous. But they ignored the taunts. They were convinced that Fulton’s steamboat ideas, combined with Livingston’s financial backing, would revolutionize transportation in America. And they were right.

2. On August 17, after devoting about five months to its construction, Fulton launched a vessel that measured 150 feet long, 13 feet wide, and 9 feet deep.
3  Fulton and a group of invited guests prepared to steam up the Hudson River from New York City to Albany. Albany is the state capital. The guests had to put up with primitive conditions. There were no cabins, no beds, and a roaring, uncovered steam engine mounted in the center of the boat. There was also the fear of the engine’s exploding!

4  They cast off at 1 p.m. The vessel puffed away from the dock and stalled. The passengers’ whispering turned into loud mumbles, which eventually gave way to shouts of dismay. Sensing their fear, Fulton promised to return to the dock if he could not fix the problem.

5  After a short time, there was a huge blast of smoke. Once again, the boat churned upriver. It was described as looking like a giant teakettle. The vessel’s engine let off steam and rained down sparks that sizzled in the water. The noise was deafening, but the boat was moving. The passengers cheered. The boat chugged upstream against the tide at a fast four to five miles per hour. It easily passed sailing ships and fishing craft.
In its wake, the boat’s two side paddlewheels left waves of foamy water and lots of terrified onlookers. Nothing like it ever had been seen before. Darkness fell, but the boat continued its journey. With a full moon and warm breezes, the passengers stayed up all night singing songs by candlelight. They had mostly forgotten their fears.

The next day, the boat docked at Livingston’s estate, called Clermont. After spending the night, it continued steaming to Albany the following morning. It pulled into that city at 5 p.m. on August 19. The boat had made the 150-mile trip in 32 hours of travel time. Crowds cheered its arrival. No longer a joke, “Fulton’s Folly” had become the first successful steamboat in America.
Think

Use what you learned from reading the history article to respond to the following questions.

1 Which sentence from the article tells why Fulton and Livingston kept working on their boat even though others thought they were being foolish?
   
   A “The two men knew that putting a steam engine onboard a vessel was still new and dangerous.”
   B “They were convinced that Fulton’s steamboat ideas . . . would revolutionize transportation in America.”
   C “Fulton and a group of invited guests prepared to steam up the Hudson River from New York City to Albany.”
   D “The boat had made the 150-mile trip in 32 hours of travel time.”

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

Part A
Read the sentence from paragraph 3 of “Fulton’s Success.”

The guests had to put up with primitive conditions.

What does the word primitive mean as it is used in the sentence?
   
   A original and unusual
   B restful and cozy
   C natural and ancient
   D rough and uncomfortable

Part B
Which detail from the article best supports your answer to Part A?
   
   A “The vessel puffed away from the dock and stalled.”
   B “Fulton launched a vessel that measured 150 feet long, 13 feet wide, and 9 feet deep.”
   C “. . . no cabins, no beds, and a roaring, uncovered steam engine . . .”
   D “. . . also the fear of the engine’s exploding!”
This question has two parts. First, answer Part A. Then answer Part B.

**Part A**
Which statement best explains why some people who saw Fulton’s boat steaming up the Hudson River were terrified?

- A They were excited about Fulton’s strange new invention.
- B The new steamboat looked and sounded dangerous.
- C The people were upset that they were not allowed to ride on the steamboat.
- D The steamboat was oddly shaped and easily passed the other boats on the river.

**Part B**
Underline three sentences from paragraph 5 that best support your answer in Part A.

After a short time, there was a huge blast of smoke. Once again, the boat churned upriver. It was described as looking like a giant teakettle. The vessel’s engine let off steam and rained down sparks that sizzled in the water. The noise was deafening, but the boat was moving. The passengers cheered. The boat chugged upstream against the tide at a fast four to five miles per hour. It easily passed sailing ships and fishing craft.

**Write**
What conclusion can be drawn about why the steamboat was known as “Fulton’s Folly” and how it became “Fulton’s Success”? Reread the text. Underline details that show the reasons the steamboat was a success.

**Plan Your Response** First, identify why the steamboat was originally called “Fulton’s Folly.” Then identify what turned it into a success. Use a chart to help organize your thoughts by explaining “What happened?” and “Why?”

**Write an Extended Response** Use evidence from the text and the information in your chart to describe why the steamboat was called “Fulton’s Folly” and how it eventually became “Fulton’s Success.”
Learning Target

In this lesson, you learned different ways that historical texts may answer the questions “What happened?” and “Why?” Now explain how this understanding about causes and effects can help you as you read other historical texts.
In the past, you have learned about shapes like squares, rectangles, and triangles. Now you will learn more about the parts that make up these shapes. Take a look at this problem.

Traci tries to teach her younger sister how to draw a rectangle. Traci tells her, “Draw a shape with four straight sides.” Traci’s sister draws the shape at the right.

The shape includes 4 straight sides. Why is Traci’s sister’s drawing not a rectangle?

a. What is the total number of sides in a rectangle? __________

b. Are the sides of a rectangle straight, curved, or some of each? ________________

c. How many corners does a rectangle have? _______

d. Are the corners of a rectangle like the corner of a sheet of paper, or are they narrower or wider? ____________________________

e. Do some or all of the sides of a rectangle go on forever or do they all stop at a certain point? __________________________

f. Are all the sides of a rectangle the same length or can some be different lengths?

______________________________________________________________

______________________________________________________________

g. Explain how Traci could make her directions more clear. ____________________________
Traci’s directions are not clear and complete. In geometry, certain words are used to describe shapes in detail. Below are some of these words.

**Point**—A point is a single location in space. You can draw a dot to show a point. Name points with a capital letter: point \(A\).

**Line Segment**—A line segment is a straight row of points that starts at one point and ends at another point. You can write “line segment \(AB\)” as \(\overline{AB}\).

**Line**—A line is a straight row of points that goes on forever in both directions. You can write “line \(AB\)” as \(\overrightarrow{AB}\). The arrows show that the line goes on forever in both directions.

**Ray**—A ray is a straight row of points that starts at one point and goes on forever in one direction. You can write “ray \(AB\)” as \(\overrightarrow{AB}\). When you name a ray, you always start with the endpoint.

**Angle**—If rays, lines, or line segments meet at a common point, they form an angle. You can write “angle \(A\)” as \(\angle A\). Notice that \(\angle A\) is made up of \(\overrightarrow{AB}\) and \(\overrightarrow{AC}\) meeting at point \(A\). You can also name this angle using three points: \(\angle CAB\) or \(\angle BAC\). The vertex is always the middle letter.

**Reflect**

1. Use geometry words and symbols to describe the rectangle below.

\[A \quad B\]
\[D \quad C\]
Points, Lines, Line Segments, and Rays

Read the problem below. Then explore different ways to understand points, lines, line segments, and rays.

Kent draws a shape with three sides. Use geometry words to describe each side of the shape.

[Diagram of a triangle with labels A, B, and C]

**Picture It** You can make some drawings to help describe the sides of the shape.

Each side is straight. Draw the different kinds of straight rows of points that you know.

- line segment
- ray
- line

**Model It** You can also use words to help describe the sides of the shape.

Label the line segment, ray, and line that are drawn as the sides of Kent’s shape. Look for endpoints and arrowheads.

[Diagram with labeled line segment, ray, and line]
Connect It  Now you will explore real-world examples of geometry words and solve a problem similar to the one on the previous page.

2 Name a real-world example of a line segment. _____________________________

3 When two line segments, lines, or rays meet at a point, they form an angle. Name a real-world example of an angle. _____________________________

4 Name a real-world example of a ray. _____________________________

5 Explain how the drawing below represents one line, three line segments, four rays, and one angle.

```
A __________ B __________ C
```

6 How many lines are in this shape? ______  How many rays? ________

```
B __________ C
A __________ D __________ E
```

7 How many line segments are in this shape? ________

```
[Diagram of a W shape]
```
Read the problem below. Then explore different ways to understand angles.

The angle shown at the right is a **right angle**. A right angle looks like a square corner and measures 90°.

Look at the figure below. Name the rays that make up each of the angles listed.

1. A right angle
2. An angle that has a smaller opening than a right angle
3. An angle that has a wider opening than a right angle, but does not open as wide as a straight line

![Diagram of angles](image)

**Picture It** You can make a drawing to help identify different types of angles.

Use shading to find the rays that make each angle.

A right angle is shaded. Look at the rays along the edges of the shaded area.

**Model It** You can also use a model to help identify different types of angles.

Compare the opening of an angle to a right angle by holding the corner of a sheet of paper next to the angle. The angle below opens as wide as a right angle.
Connect It  Now you will extend your understanding of angles to identify them in the figure on the previous page.

8 Model It shows a right angle. Draw a right angle. Then use 3 points to name a right angle in the figure on the previous page. ________________

9 An angle that has a smaller opening than a right angle is called an acute angle. Name an acute angle in the figure on the previous page. ________________ Draw an acute angle.

10 An angle that has a wider opening than a right angle, but does not open as wide as a straight line, is called an obtuse angle. Name an obtuse angle in the figure on the previous page. __________ Draw an obtuse angle.

11 Explain how you could decide whether any angle is acute, right, or obtuse.

________________________________________

Try It  Use what you just learned to solve these problems.

12 How many acute angles are in the shape below? __________ 13 How many obtuse angles are in the shape below? __________
Read the problem below. Then explore different ways to understand parallel and perpendicular lines and line segments.

Jordan looks at the street map below.

Describe the relationship between Oak Street and First Street. Then describe the relationship between Oak Street and Ash Street. How are they different?

**Picture It**  You can use a sketch to help understand the problem.

Sketch a picture of Oak Street and First Street. Shade the streets.

Notice that the streets do not cross.

**Model It**  You can also use a model to help understand the problem.

Look at Oak Street and Ash Street. Think of each street as a line. When the two lines cross, they form four angles.
Connect It  Now you will use understanding of parallel and perpendicular lines to identify them in the map from the previous page.

14 Lines that are always the same distance apart and never cross are called parallel lines. Name a real-world example of parallel lines.

15 Suppose each street keeps going in a straight line. If Jordan travels on Oak Street and makes no turns, can he ever get to First Street? Explain.

16 Describe the angles that Oak Street and Ash Street make when they cross.

17 Lines that cross and form a right angle are called perpendicular lines. Name a real-world example of perpendicular lines.

18 Explain why 3 separate lines can all be parallel to each other, but 3 separate lines cannot all be perpendicular to each other. Use a drawing to show your answer.

Try It  Use what you just learned to solve these problems.

19 How many pairs of parallel sides does the shape below appear to have? 

20 A rectangle is a parallelogram with _________ pairs of parallel sides.
Study the example below. Then solve problems 21–23.

**Example**

In the shape below, list each pair of parallel sides and circle the letter marking each obtuse angle.

![Diagram of a parallelogram with labeled sides A, B, C, and D.]

**Look at how you could show your work.**

- **Solution** \( AB \) and \( CD \) are parallel. \( AC \) and \( BD \) are parallel.
- \( \angle A \) and \( \angle D \) open wider than a right angle, so they are obtuse.

**Pair/Share**

Even if the sides of the shape went on forever, the opposite sides would never cross each other.

What kind of angles are \( \angle B \) and \( \angle C \)? How do you know?

21 Put an X where each pair of perpendicular line segments meet in the shape below.

![Diagram of a shape with labeled points A, B, C, and D.]

**Pair/Share**

Perpendicular line segments meet to form right angles.

Describe the angles that are NOT marked with an X.
A crosswalk is marked with a pair of parallel line segments. The distance straight across from point $A$ to point $B$ is 6 feet. What is the distance straight across from point $C$ to point $D$?

**Solution**

Toshi cuts one fourth of a circle out of paper. How many angles does this shape have? Circle the letter of the correct answer.

- A 0
- B 1
- C 2
- D 3

Esme chose D as the correct answer. How did she get that answer?
Solve the problems.

1. Think about a real-world example of where a wall meets the floor and where the same wall meets the ceiling. Which term describes the edge of the floor and the edge of the ceiling?
   - A  parallel line segments
   - B  perpendicular line segments
   - C  right angle
   - D  acute angle

2. Which drawing shows 3 lines?
   - A
   - B
   - C
   - D

3. Choose either Yes or No to tell whether there is an example of the given term in the diagram below.
   - a. parallel line segments
   - b. perpendicular line segments
   - c. right angle
   - d. acute angle
   - e. obtuse angle
4 Tell whether each sentence is True or False.

a. A ray goes on forever in two directions. □ True □ False
b. A line segment has exactly two endpoints. □ True □ False
c. An obtuse angle has a wider opening than a right angle. □ True □ False
d. Parallel lines meet to form an acute angle. □ True □ False

5 A triangle can have one pair of perpendicular sides. Can a triangle have one pair of parallel sides? Use drawings and words to explain your answer.

Show your work.

6 Liz draws two shapes. Use words you have learned in this lesson to describe what the shapes have in common. How are they different?

Go back and see what you can check off on the Self Check on page 335.
<table>
<thead>
<tr>
<th>Criteria</th>
<th>4 pts</th>
<th>3 pts</th>
<th>2 pts</th>
<th>1 pt</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOPPING</td>
<td>Hops all of the time using one foot with bent knee and lands on the ball of the foot</td>
<td>Hops most of the time using one foot with bent knee and lands on the ball of the foot</td>
<td>Hops some of the time on one foot with bent knee</td>
<td>Unable to demonstrate a hop on one foot</td>
</tr>
<tr>
<td>• Uses one foot</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Bends knee</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Lands on ball of foot</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GALLOPING</td>
<td>Gallops all of the time with one foot leading while the other foot chases the lead foot and has bent knees</td>
<td>Gallops most of the time with one foot leading while the other foot chases the lead foot</td>
<td>Gallops some of the time on one foot leading</td>
<td>Unable to demonstrate a gallop with one foot leading</td>
</tr>
<tr>
<td>• Bend knees</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• One foot chasing other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Lead foot stays the same</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RUNNING</td>
<td>Runs all of the time on the balls of the feet moving arms in opposition to legs and both feet come off the ground</td>
<td>Runs most of the time on balls of the feet moving arms in opposition to legs</td>
<td>Runs some of the time on balls of feet moving arms</td>
<td>Unable to demonstrate a run on the balls of the feet</td>
</tr>
<tr>
<td>• Balls of feet touch ground first</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Arms move in opposition to legs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Both feet come off the ground</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SLIDING</td>
<td>Slides all of the time in a sideways movement while one foot chases the other with the same lead foot</td>
<td>Slides most of the time in a sideways movement while one foot chases the other</td>
<td>Slides some of the time in a sideways movement while one foot chases the other</td>
<td>Unable to demonstrate a slide in a sideways movement</td>
</tr>
<tr>
<td>• Sideways movement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• One foot chases other</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Lead foot stays the same</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SKIPPING</td>
<td>Skips all of the time in a step-hop motion alternating feet while arms swing upward with legs</td>
<td>Skips most of the time in a step-hop motion alternating feet</td>
<td>Skips some of the time in a step-hop motion alternating feet</td>
<td>Unable to demonstrate a skip in a step-hop motion</td>
</tr>
<tr>
<td>• Step-hop</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Alternates feet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Arms swing upward with legs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JUMPING</td>
<td>Jumps all of the time with bent knees using two feet and landing on balls of the feet</td>
<td>Jumps most of the time with bent knees using two feet</td>
<td>Jumps some of the time on two feet with bent knees</td>
<td>Unable to demonstrate a jump with two feet</td>
</tr>
<tr>
<td>• Bend knees</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Uses two feet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Lands on balls of feet</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Study the example showing how to describe the sides and angles in shapes. Then solve problems 1–6.

**Example**

Compare the triangles below. What is the same and different about the shapes?

![Triangle A](image)

![Triangle B](image)

**Same**
- Both triangles have 3 sides.
- Both triangles have 3 angles.

**Different**
- Triangle A has 1 square corner and Triangle B has no square corners.
- Triangle A has 0 sides the same length and Triangle B has 2 sides the same length.

1. Look at the shapes below. Read the descriptions in the table. Draw each shape in the column that describes it.

<table>
<thead>
<tr>
<th>All square corners and all sides the same length</th>
<th>Square corners and some sides the same length</th>
<th>No square corners and no sides the same length</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Shape" /></td>
<td><img src="image" alt="Shape" /></td>
<td><img src="image" alt="Shape" /></td>
</tr>
</tbody>
</table>

2. Describe the sides and angles of the pentagon at the right.

![Pentagon](image)
Solve.

3 Describe how the two shapes shown are alike.

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

For problems 4–6, use the shapes at the right.

4 Fill in the table. Write each shape in the column that describes the number of sides and angles it has.

<table>
<thead>
<tr>
<th>Fewer than 4 sides and 4 angles</th>
<th>4 sides and 4 angles</th>
<th>More than 4 sides and 4 angles</th>
</tr>
</thead>
<tbody>
<tr>
<td>triangle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>rectangle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>square</td>
<td></td>
<td></td>
</tr>
<tr>
<td>rhombus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>parallelogram</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pentagon</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5 Fill in the table. Write each shape in the column that describes the length of its sides.

<table>
<thead>
<tr>
<th>All sides the same length</th>
<th>Some sides the same length</th>
<th>No sides the same length</th>
</tr>
</thead>
<tbody>
<tr>
<td>triangle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>rectangle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>square</td>
<td></td>
<td></td>
</tr>
<tr>
<td>rhombus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>parallelogram</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pentagon</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6 Fill in the table below. Write each shape in the column that describes whether it has square corners or has no square corners.

<table>
<thead>
<tr>
<th>Has a square corner</th>
<th>Has no square corners</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Identify Points, Lines, Line Segments, and Rays

Study the example that shows a drawing with points, lines, line segments, and rays. Then solve problems 1–9.

Example

Amy made a drawing of a letter “A” in her math notebook. Use geometry words to describe the drawing.

There are 4 points on the drawing: point A, point B, point C, and point D.

There is a line segment from point B to point D. \(\overline{BD}\)

There is a line through points A and C. \(\overline{AC}\)

There is a ray from point B through point A. \(\overrightarrow{BA}\)

Use the drawing below to answer questions 1–4.

1. How many lines are in the drawing? ______
2. How many rays are in the drawing? ______
3. Write the name of the line in the drawing.

______________________________________________________________

4. Write the names of the rays in the drawing.

______________________________________________________________

5. Look at the shape at the right. How many line segments are in the shape? ______
Solve.

6 Label each sign below. Write line, line segment, or ray.

7 Look at the drawing below. Choose Yes or No to tell whether each line, line segment, ray, or angle is shown in the drawing.

   a. \(\overrightarrow{XY}\) \[ \square \text{Yes} \square \text{No} \]
   b. \(\overrightarrow{XZ}\) \[ \square \text{Yes} \square \text{No} \]
   c. \(\overrightarrow{WX}\) \[ \square \text{Yes} \square \text{No} \]
   d. \(\overrightarrow{YX}\) \[ \square \text{Yes} \square \text{No} \]
   e. \(\overrightarrow{ZY}\) \[ \square \text{Yes} \square \text{No} \]
   f. \(\angle XYZ\) \[ \square \text{Yes} \square \text{No} \]

8 Use geometry words and symbols to describe the rhombus shown.

   9 Read the description of a shape below. Then draw the shape at the right.

   It has 3 line segments, \(\overline{RS}, \overline{ST}, \overline{TR}\).
   Line segments \(\overline{RS}\) and \(\overline{TR}\) are the same length.
   It has 1 square corner, \(\angle R\).
Identify Angles

Study the example identifying angles in a shape. Then solve problems 1–10.

Example

Name and describe the angles in the shape below.

\( \angle A \) is a right angle. It has a shape like a square corner.

\( \angle B \) is also a right angle.

\( \angle C \) is an obtuse angle. It has a wider opening than a right angle.

\( \angle D \) is an acute angle. It has a smaller opening than a right angle.

The shape has 2 right angles, 1 acute angle, and 1 obtuse angle.

Use the shape at the right to answer questions 1–5.

1. How many right angles are in this shape? ______
2. How many acute angles are in this shape? ______
3. How many obtuse angles are in this shape? ______
4. Name the acute angles in the shape.
   __________________________________________
5. Name the obtuse angles in the shape.
   __________________________________________
6. Look at the shape at the right. Describe the number and kind of angles it has.
   __________________________________________
   __________________________________________
Solve.

Jasmine drew this pentagon. She says that all pentagons have 5 sides of equal length and 5 obtuse angles.

7 Draw a pentagon that is different from the one Jasmine drew. Describe the lines and angles of your pentagon.

8 In what way is Jasmine’s thinking correct?

9 In what way is Jasmine’s thinking incorrect?

10 Which of the following statements describes the shape at the right? Circle all that apply.
   A  The shape has acute angles.
   B  The shape has right angles.
   C  The shapes has obtuse angles.
   D  The shape has 6 angles.
Identify Parallel and Perpendicular Lines

Study the example identifying parallel and perpendicular lines and segments. Then solve problems 1–6.

Example

Colby drew parallel and perpendicular lines to place the bases and pitcher’s mound on a drawing of a baseball field.

$SF$ and $TH$ are parallel lines.
$ST$ and $FH$ are parallel lines.

The pitcher’s mound is one place where perpendicular lines cross. At what point do perpendicular lines cross at the pitcher’s mound?

They cross at point $P$, where $TF$ crosses $SH$.

For problems 1 and 2, use the shape below.

1. How many pairs of parallel sides does the square appear to have? ______

2. Put Xs on the square where each pair of perpendicular line segments meet.

3. Look at the drawing of a window below. Circle 3 parallel line segments in the drawing.

Vocabulary

parallel lines  two lines that are always the same distance apart and will never cross.

perpendicular lines  two lines that cross at a 90° angle.
Solve.

4 Look at the line segments in the letters on the tiles to the right. Fill in the table with each letter to identify parallel lines. The first one is done for you.

<table>
<thead>
<tr>
<th>No parallel lines</th>
<th>1 pair of parallel lines</th>
<th>More than 1 pair of parallel lines</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5 Look at the line segments in the letters on the tiles again. Fill in the table to identify perpendicular lines.

<table>
<thead>
<tr>
<th>1 pair of perpendicular lines</th>
<th>2 pairs of perpendicular lines</th>
<th>3 pairs of perpendicular lines</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6 Choose True or False to tell if each statement correctly describes the streets shown on the map.

- a. 1st and 3rd Street are perpendicular. □ True □ False
- b. Main and High Street are parallel. □ True □ False
- c. 2nd street is perpendicular to Main St. □ True □ False
- d. 1st street is perpendicular to High St. □ True □ False
Points, Lines, Rays, and Angles

Solve the problems.

1. Which of the following describes the drawing below? Circle the letter for all that apply.

   \[ \text{A} \quad \overline{AB} \text{ is parallel to } \overline{CD}. \]
   \[ \text{B} \quad \overline{AB} \text{ is perpendicular to } \overline{CD}. \]
   \[ \text{C} \quad \overline{BA} \text{ is shown.} \]
   \[ \text{D} \quad \overline{CD} \text{ is shown.} \]
   \[ \text{E} \quad \overline{AC} \text{ is shown.} \]

2. Look at the heart shape below. How many angles does the heart shape have?

   \[ \text{A} \quad 0 \]
   \[ \text{B} \quad 1 \]
   \[ \text{C} \quad 2 \]
   \[ \text{D} \quad 3 \]

Mina chose **C** as the correct answer. How did she get that answer?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
3. Name and describe all the angles in the drawing below.

How is an acute angle different than a right angle? How is an obtuse angle different than a right angle?

4. Does the shape below have more pairs of parallel line segments or more pairs of perpendicular line segments? Explain.

Put an X where the perpendicular lines meet. Name the parallel lines.
Read Writers use text structures to organize their ideas.

- **Chronology** is a text structure that describes events in the order they occur. Words such as *first, next, during,* and *finally* signal this text structure, as do dates that tell when the events happened.

- A **problem–solution** text structure describes a problem first and then its solution. Words such as *problem, solution, challenge, fixed, issue,* and *resolved* signal a problem–solution structure.

Read the passages below. Circle signal words that indicate the text structure of each passage.

---

I’ll never forget the storm last October. Before the storm started, I found some blankets and flashlights. During the storm, I played games with my family. Finally, I turned on the radio and listened to the local weather report. Crack!

---

The ground shook as a tree in our front yard toppled over, falling across power lines and cutting off our electricity. We faced the challenge of getting through the night without lights or heat. We resolved that first issue with flashlights and candles. Dad fixed the second problem by making a fire in the fireplace.
**Think** What have you learned about chronological and problem–solution text structures? Match each chart to the passage featuring that text structure. Then complete the charts using details from each passage.

### Problem–Solution Text Structure

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Chronological Text Structure

<table>
<thead>
<tr>
<th>Order</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**Talk** Share your charts with a partner. Did you choose the same chart for the passages? Did you list the events in the same order in the Chronology Chart? Did you write a similar problem and solution in the Problem–Solution Chart? What signal words from each passage helped you?

**Academic Talk**

Use these words to talk about the text.

- text structures
- chronology
- problem–solution
I first spotted the red fox on a June morning. It was beside the tool shed, trembling. I approached the animal cautiously and saw its left hind leg was injured. I went inside my cabin and got my medical bag. Then, with caution, I returned to the fox. Next, I gently lifted its injured leg and decided to attach a splint. The fox settled back and let me proceed with my work. On my porch, I set up a wooden box padded with pillows so the fox could heal. Beside the box I placed bowls of food and water that I refilled daily.

One morning in July, I stepped out to the porch and saw that the red fox was gone. I checked the porch each day after, but the fox was nowhere to be found.

Late one August afternoon, I spied the red fox coming up the path to my cabin. A short distance behind, a silver fox was limping along. I watched as the animals approached the tool shed. The silver fox was fearful, but the red fox apparently resolved the issue by assuring it the area was safe. The silver fox settled down beside the tool shed. The red fox observed its friend for a few moments, and then returned to the dense woods. As I had done once before, I entered the cabin, located my medical bag, and returned outside to treat the silver fox.
Why did the author choose a particular text structure when he wrote “Treating the Red Fox”?

**Think**

1. Complete the chart below by listing the events from the memoir in the order in which they occur.

<table>
<thead>
<tr>
<th>Order</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

**Talk**

2. How does the text structure chosen by the author help you understand events in the memoir? How do the signal words help?

**Write**

3. **Short Response** Explain how the author’s choice of text structure is important to understanding “Treating the Red Fox.” Include details from the text to support your response. Use the space provided on page 236 to write your response.
In July 1969, three astronauts blasted off for the Moon. Their goal was not only to land on the Moon but also to walk on its surface. The journey from Earth to Moon was quiet, and the astronauts were patient and calm during the trip. The landing, however, would be quite exciting.

After getting near the Moon, the landing ship, named Eagle, separated from the command ship. The command ship then remained in orbit around the Moon. During the landing ship’s descent to the Moon, the astronaut flying the ship made an announcement. Astronaut Neil Armstrong said, “The Eagle has wings.” He meant that the landing ship was flying well and doing its job.

As the Eagle began its final approach, alarms sounded. By now, fuel was running low. Looking out the window, Armstrong realized the terrain was not good for landing. The problem was that it was rocky and dangerous. The landing site was supposed to be smooth.

There was less than a minute of fuel left for a landing. If they ran out, the Eagle would be forced to cancel its flight and go back to the command ship. Armstrong had to decide how to meet this challenge. Should he call off the landing? Or should he look for another landing spot? He quickly chose to fly the ship to another area. Just seconds later, the ship landed in an area of the Moon called the Sea of Tranquility. There were only about 30 seconds of fuel left. Armstrong announced, “The Eagle has landed.”
Think  Use what you learned from reading the history article to respond to the following questions.

The question has two parts. Answer Part A. Then answer Part B.

Part A
In paragraphs 1 and 2, the author describes events in time order. What structure does the author use to present information in paragraphs 3 and 4?

A  The author tells the order in which the events happened during the Eagle’s attempt to land.
B  The author explains a challenge Armstrong faced and how he solved it.
C  The author tells what caused the Eagle to land and what happened as a result.
D  The author compares and contrasts the events that happened before and after the Eagle landed.

Part B
Which two sentences from the text best support the answer in Part A?

A  “As the Eagle began its final approach, alarms sounded.”
B  “The problem was that it was rocky and dangerous.”
C  “The landing site was supposed to be smooth.”
D  “There was less than a minute of fuel left for a landing.”
E  “He quickly chose to fly the ship to another area.”
F  “Armstrong announced, ‘The Eagle has landed.’”

Talk

What did Armstrong do to land the Eagle on the Moon? Use the chart on page 237 to help organize your ideas about the text structure the author used to present this information.

Write

Short Response  Explain how the author presents the events that Neil Armstrong faced as he landed the Eagle on the Moon. Include at least two details from the text to support your response. Use the space provided on page 237 to write your response.

HINT  In your response, be sure to tell where in the passage you found your text evidence.
3 Short Response  Explain how the author’s choice of text structure is important to understanding “Treating the Red Fox.” Include details from the text to support your response.

---

Check Your Writing

☐ Did you read the prompt carefully?
☐ Did you put the prompt in your own words?
☐ Did you use the best evidence from the text to support your ideas?
☐ Are your ideas clearly organized?
☐ Did you write in clear and complete sentences?
☐ Did you check your spelling and punctuation?
Guided Practice

Check Your Writing

- Did you read the prompt carefully?
- Did you put the prompt in your own words?
- Did you use the best evidence from the text to support your ideas?
- Are your ideas clearly organized?
- Did you write in clear and complete sentences?
- Did you check your spelling and punctuation?

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Lesson 15

Text Structures, Part 2: Chronology and Problem–Solution

---

2 **Use the chart below to organize your ideas.**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

3 **Write** Use the space below to write your answer to the question on page 235.

**Short Response** Explain how the author presents the events that Neil Armstrong faced as he landed the *Eagle* on the Moon. Include at least two details from the text to support your response.

---

**HINT** In your response, be sure to tell *where* in the passage you found your text evidence.

---

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On May 29th, 1953, Tenzing Norgay, along with Sir Edmund Hillary, was one of the first two people to reach the summit of Mount Everest, the highest mountain on Earth. The following passage is taken from his autobiography.

1. On top of the rock cliff we rested again. Certainly, after the climb up the gap we were both a bit breathless, but after some slow pulls at the oxygen I am feeling fine. I look up; the top is very close now; and my heart thumps with excitement and joy. Then we are on our way again. Climbing again . . . .
Then the rocks, too, are beneath us. We are back among the snowy humps. They are curving off to the right, and each time we pass one I wonder, “Is the next the last one? Is the next the last?” Finally we reach a place where we can see past the humps, and beyond them is the great open sky and brown plains. We are looking down the far side of the mountain upon Tibet. Ahead of us now is only one more hump—the last hump. It is not a pinnacle. The way to it is an easy snow slope, wide enough for two men to go side by side. About thirty feet away we stop for a minute and look up. Then we go on . . . .

A little below the summit Hillary and I stopped. We looked up. Then we went on. The rope that joined us was thirty feet long, but I held most of it in loops in my hand, so that there was only about six feet between us . . . .
4 We stepped up. We were there. The dream had come true . . .

5 What we did first was what all climbers do when they reach the top of their mountain. We shook hands. But this was not enough for Everest. I waved my arms in the air and then threw them around Hillary, and we thumped each other on the back until, even with the oxygen, we were almost breathless. Then we looked around. It was eleven-thirty in the morning, the sun was shining, and the sky was the deepest blue I have ever seen. Only a gentle breeze was blowing, coming from the direction of Tibet, and the plume of snow that always blows from Everest’s summit was very small . . .

6 It was such a sight as I had never seen before and would never see again: wild, wonderful, and terrible. But terror was not what I felt. I loved the mountains too well for that. I loved Everest too well. At that great moment for which I had waited all my life my mountain did not seem to me a lifeless thing of rock and ice, but warm and friendly and living. She was a mother hen, and the other mountains were chicks under her wings. I too, I felt, had only to spread my own wings to cover and shelter the brood that I loved.
Think  Use what you learned from reading the autobiography to respond to the following questions.

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

Part A
How is the first paragraph different from the ones that come after it?

A It describes events that led Norgay and Hillary to climb Mount Everest. The other paragraphs tell about problems they overcame on their climb.

B It shows what a mountain climber has to do to stay alive on a dangerous climb. Later paragraphs tell what happened as they reached the top and why it happened.

C It helps readers understand a problem the climbers faced and how they solved it. Later paragraphs tell the order of the events as the men climbed to the top of the mountain.

D It compares what Tenzing Norgay felt as he reached the top of the mountain to what Hillary felt. Other paragraphs help readers understand why they made the climb.

Part B
Underline a detail in paragraph 1 that best supports the answer to Part A.

On top of the rock cliff we rested again. Certainly, after the climb up the gap we were both a bit breathless, but after some slow pulls at the oxygen I am feeling fine. I look up; the top is very close now; and my heart thumps with excitement and joy. Then we are on our way again. Climbing again . . . .

2 What does the word plains mean as it is used in paragraph 2?

A grassy fields

B aircraft

C bodies of water

D Tenzing’s homeland
This question has two parts. First, answer Part A. Then answer Part B.

Part A
How does the author mainly organize the details in *Tiger of the Snows*?

A by stating the problems he faced and how he solved them
B by stating his point of view and comparing it to Hillary’s
C by explaining the events in the order they occurred
D by explaining what happened and why it happened

Part B
Which two details from the text best support the answer to Part A?

A “I look up; the top is very close now; and my heart thumps with excitement and joy.” (paragraph 1)
B “Finally we reach a place where we can see past the humps, and beyond them is the great open sky . . .” (paragraph 2)
C “The way to it is an easy snow slope, wide enough for two men to go side by side.” (paragraph 2)
D “We looked up. Then we went on.” (paragraph 3)
E “The dream had come true . . .” (paragraph 4)
F “But this was not enough for Everest.” (paragraph 5)

Put events from the autobiography in the order they happen by writing the numbers 1 to 4 on the lines before each sentence.

1 Tenzing and Hillary shake hands at the top of the mountain.
2 As Tenzing and Hillary climb above the rocks, Tenzing wonders if the next snowy hump will be the last one.
3 Tenzing compares the mountain to a mother hen with chicks under her wings.
4 After climbing up a gap, Tenzing and Hillary rest on a rock cliff and breathe in extra oxygen.
Learning Target

In this lesson, you learned how authors use chronological and problem–solution text structures to organize information and ideas. Explain how this helped you better understand the texts.

Write

Short Response Why do you think the author used a chronological text structure in this autobiography?
In Lesson 31, you learned about parallel and perpendicular lines. Now you will use this understanding to classify two-dimensional shapes. Take a look at this problem.

Look at the shapes below. Put a check mark on all the shapes that appear to have at least one pair of parallel sides. Put a star on all the shapes that appear to have at least one pair of perpendicular sides.

a. Which shapes have a pair of sides that are always the same distance apart? ________________

b. Lines, line segments, and rays that are always the same distance apart and never cross are called ________________________________.

c. Which shapes have a pair of sides that form a right angle? ________________

d. Lines, line segments, and rays that form a right angle when they meet are called ________________________________.

e. Explain how you could test your choices. ____________________________________
   ____________________________________
   ____________________________________
   ____________________________________
   ____________________________________
You know that there are many different kinds of shapes with straight sides, such as triangles and quadrilaterals. These shapes are types of **polygons**. There are many ways you can sort these shapes, such as by the number of sides the shape has. You can also sort them by the relationships between the sides.

Take another look at the shapes from the previous page. You can sort them by looking for pairs of parallel and perpendicular sides.

- Shapes with pairs of parallel sides *and* pairs of perpendicular sides: A and C

You can also sort the shapes by the kinds of angles they have. Here are some ways to sort the shapes by angles.

- Shapes with at least one right angle: A, C, and D
- Shapes with all right angles: A and C
- Shapes with at least one acute angle: D and E
- Shapes with at least one obtuse angle: B and E
- Shapes with all obtuse angles: B

**Reflect**

1. Describe the sides and the angles of shape C. ________________________________________________________________________________
   ________________________________________________________________________________
   ________________________________________________________________________________
   ________________________________________________________________________________
   ________________________________________________________________________________
   ________________________________________________________________________________
Read the problem below. Then explore different ways to understand sorting shapes into groups based on parallel and perpendicular sides.

Evan plays a board game. The board is divided into 3 sections.

These are Evan’s cards. In which sections of the board do the cards belong?

- hexagon
- rhombus
- parallelogram
- trapezoid

### Picture It
You can use drawings to help sort shapes.

Draw a pair of parallel lines and a pair of perpendicular lines.

Draw lines along opposite sides of each shape. Compare these lines to the parallel lines you drew.

Draw lines along sides of each shape that form angles. Compare these lines to the perpendicular lines you drew.

### Model It
You can use a model to help sort shapes.

Make a Venn diagram. Put each card’s shape where it belongs in the diagram.

Evan’s cards belong in the “parallel sides” section of the board.
**Connect It**  Now you will solve a problem similar to the one from the previous page. Evan gets different cards with a square and a quadrilateral. In which sections of the board do these shapes belong?

2 Look at the sides of the square. In which category does it belong?


3 Does the quadrilateral belong to any of the three categories? If not, name a category that can be used to describe this shape.


4 Explain how to sort shapes based on parallel and perpendicular sides.


**Try It**  Answer the following questions using the shapes shown.

5 Describe the group these shapes belong in, based on the kinds of sides they have.


6 Circle the shape that belongs in the group “no parallel sides.”


Read the problem below. Then explore different ways to understand sorting shapes into categories based on angles.

A classroom computer game shows the player a set of categories and a set of shapes. The player puts each shape in the correct category. Draw an arrow from each shape to the category it belongs to.

**Picture It** You can use a model to help sort shapes based on angles.

Use the corner of a sheet of paper as a model of a right angle. Compare each angle to the paper corner.

For example, hold up the paper corner to the trapezoid.

This angle opens wider than a right angle. The angle is **obtuse**.

Then you can compare the corner to each of the other 3 angles in the trapezoid.

**Model It** You can label a picture to help sort shapes based on angles.

Look at each shape. Mark each angle “a” for acute, “r” for right, or “o” for obtuse.

For example, mark the trapezoid like this:

The trapezoid has 2 acute angles and 2 obtuse angles. It belongs in the group “acute and obtuse.”

Remember to look at all of the angles in a shape before you put it in a group.
Connect It  Now you will sort shapes based on angles to solve the problem from the previous page.

7 Look at parallelograms A and B. Do they belong to the same group? Explain. Draw arrows to the correct group(s).

8 Look at the two triangles. Describe the angles in each one. Draw arrows to match the triangles with their group(s).

9 Look at the trapezoid and rectangle. Which has right angles only? Look at Picture It. To which group does the trapezoid belong? Draw arrows to the group(s).

10 Explain how to sort shapes based on whether they have acute, right, or obtuse angles.

Try It  Use what you just learned to solve these problems.

11 Where does the rhombus at the right belong in the Venn diagram below? Mark the place with an X.

12 Circle the shape that has an acute angle, a right angle, and an obtuse angle.
Read the problem below. Then explore different ways to understand sorting triangles into groups based on kinds of angles and lengths of sides.

A website sells 7 kinds of triangular flags based on sides and angles.

<table>
<thead>
<tr>
<th>Flag</th>
<th>Equal Sides</th>
<th>Angles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>3 acute</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>2 acute, 1 right</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>2 acute, 1 obtuse</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>3 acute</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>2 acute, 1 right</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>2 acute, 1 obtuse</td>
</tr>
<tr>
<td>7</td>
<td>0</td>
<td>3 acute</td>
</tr>
</tbody>
</table>

The triangle at the right is a model for which flag number? What is the name of this triangle?

**Picture It** You can use a picture to help describe the sides and angles of triangles.

Compare the angles of the triangle to a right angle. The triangle has 3 acute angles.

The triangle has 2 sides of equal length (10 in.). Flag 4 has 2 sides of equal length and 3 acute angles. The triangle is a model for flag 4.

The tables below show triangle names based on the number of sides of equal length and kinds of angles.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description of Sides</th>
</tr>
</thead>
<tbody>
<tr>
<td>equilateral</td>
<td>3 equal sides</td>
</tr>
<tr>
<td><strong>isosceles</strong></td>
<td>2 equal sides</td>
</tr>
<tr>
<td>scalene</td>
<td>0 equal sides</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Description of Angles</th>
</tr>
</thead>
<tbody>
<tr>
<td>acute</td>
<td>3 acute angles</td>
</tr>
<tr>
<td>right</td>
<td>1 right angle</td>
</tr>
<tr>
<td>obtuse</td>
<td>1 obtuse angle</td>
</tr>
</tbody>
</table>

The triangle has 2 equal sides, so it’s an isosceles triangle. Since it has 3 acute angles, it is an acute triangle. The triangle is an acute isosceles triangle.
Connect It Now you will explore naming triangles further.

[Diagram of triangles A, B, and C with side lengths labeled.]

13 Look at triangle A. How many sides are the same length? _________
What kinds of angles does it have? ________________________________
What are two names for this triangle? ____________________________

14 What are two names for triangle B? ______________________________
Can this triangle also be called an acute triangle? Why or why not?

15 What are two names for triangle C? Explain.

16 Explain how to give a complete description of a triangle. ____________________________

Try It Use what you just learned to solve these problems.

17 Give a complete description of the triangle below.

18 What do the triangles below have in common? ________________
How are they different? ____________________________
Study the example below. Then solve problems 19–21.

**Example**

Do any of the shapes below have at least one pair of parallel sides and at least one right angle? If yes, list the shapes. If no, explain.

![Shapes A, B, C, D](image)

<table>
<thead>
<tr>
<th>Shape</th>
<th>Parallel Sides</th>
<th>Right Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>B</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>C</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Look at how you could show your work using a table.

**Solution** Yes; A and D

19 Nate and Alicia play Draw My Shape. Nate says, “My shape has 2 pairs of parallel sides, 2 acute angles, and 2 obtuse angles.” Alicia draws the rectangle below. Explain why Alicia’s answer is incorrect.

**Solution**

I can test the angles to see if they are acute, right, or obtuse.

**Pair/Share** How could you test for parallel lines?

**Pair/Share** Can you have a 4-sided shape with 4 right angles and only 1 pair of parallel sides?
20 Compare and contrast the sides and angles of the shapes below.

\[ \text{square} \quad \text{rhombus} \]

\[ \text{Solution} \]

21 Julio is missing one piece from the middle of the puzzle below. Circle the letter of the correct answer.

Which name best describes the missing piece?

A  acute isosceles triangle  
B  acute scalene triangle  
C  right isosceles triangle  
D  right scalene triangle

Ricky chose B as the correct answer. How did he get that answer?
Lesson 32  Classify Two-Dimensional Figures

Solve the problems.

1. Which is the best name for the group of shapes below?

A shapes with acute angles
B shapes with right angles
C shapes with parallel sides
D shapes with perpendicular sides

2. Sort these four shapes. Use the characteristics labeled in the boxes below. Draw each shape in each of the boxes where it belongs. Some shapes may belong in more than one box.

<table>
<thead>
<tr>
<th>equilateral triangle</th>
<th>parallelogram</th>
<th>square</th>
<th>right trapezoid</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Shapes with at Least One Acute Angle</th>
<th>Shapes with at Least One Pair of Perpendicular Sides</th>
<th>Shapes with at Least One Pair of Parallel Sides</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3 Tell whether each sentence is True or False.

a. A right scalene triangle can have 3 different kinds of angles.  
   □ True □ False

b. A right isosceles triangle has 2 right angles.  
   □ True □ False

c. An equilateral triangle is also an acute triangle.  
   □ True □ False

d. A triangle cannot have two perpendicular sides.  
   □ True □ False

4 Divide the shapes below into 2 groups. Give each group a title that tells what all the shapes in that group have in common. Then draw another shape that belongs to each group.

- quadrilateral
- square
- hexagon
- parallelogram
- trapezoid
- triangle

Show your work.

---

Self Check  Go back and see what you can check off on the Self Check on page 335.
## 1 Minute Fitness Challenge

### Station 

<table>
<thead>
<tr>
<th>Station #</th>
<th>Exercise</th>
<th>Challenge</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Push-Ups</td>
<td>How many push-ups can you do?</td>
</tr>
<tr>
<td>2</td>
<td>Stretch</td>
<td>How many muscles can you safely stretch? Hold stretches for 10 seconds each.</td>
</tr>
<tr>
<td>3</td>
<td>Sit-Ups</td>
<td>How many sit-ups can you do?</td>
</tr>
<tr>
<td>4</td>
<td>Pass and Catch</td>
<td>How many times can you pass and catch a ball with a partner?</td>
</tr>
<tr>
<td>5</td>
<td>Water</td>
<td>Remember to stay hydrated. Get 1 quick and quiet drink.</td>
</tr>
<tr>
<td>6</td>
<td>Jump and Think</td>
<td>How many fruits can you name while jumping an invisible jump rope?</td>
</tr>
<tr>
<td>7</td>
<td>Bicep Curls</td>
<td>How many bicep curls can you do with a household item (milk jug, tv remotes, bottle of water, etc.)?</td>
</tr>
<tr>
<td>8</td>
<td>Plank</td>
<td>How long can you hold a plank?</td>
</tr>
<tr>
<td>9</td>
<td>Balance and Think</td>
<td>Balance on one foot. How many vegetables can you name?</td>
</tr>
<tr>
<td>10</td>
<td>Heart Rate</td>
<td>Take your pulse for the full minute. How many beats did you count?</td>
</tr>
</tbody>
</table>
Lesson 16
Comparing Accounts of the Same Topic

Comparing and contrasting firsthand and secondhand accounts of the same event or topic will help you develop a deeper understanding of what happened.

**Read** When you compare accounts of the same topic, you are studying the writer’s viewpoint. A **firsthand account** is written by someone who witnessed or took part in an event as it happened. Someone who heard or read about an event writes a **secondhand account**. You can compare the **information** or facts each writer chooses to emphasize.

In 1900, a powerful hurricane wrecked the city of Galveston, Texas. It destroyed many homes. This boy watched the hurricane as it was happening. His description of the event would be a firsthand account that includes his thoughts and feelings. He wants to retell what he experienced.

The girl was not in Galveston in 1900. She knows about the hurricane from reading a book written about it many years later. The book would be a secondhand account with a broader **focus**. It would include background information and other details from research.
Think Consider everything you’ve learned so far about firsthand and secondhand accounts. How are they the same? How is the focus of each account different? Use the Venn diagram below to compare and contrast each type of account and organize your thinking.

Talk Imagine that the boy and the girl write down their thoughts about the Galveston Hurricane of 1900. Based on the details in the cartoons, how would the two accounts be the same, and how would they be different?

Academic Talk Use these words and phrases to talk about the text.

- firsthand account
- secondhand account
- focus
- information
- compare
- contrast
The Unsinkable Titanic

by Julian Green

1. For more than a hundred years, the story of the Titanic has fascinated people. It was the largest passenger steamship ever built, already world-famous when it was launched. One magazine proudly called it “unsinkable.” But that pride would crumble on Titanic’s first voyage across the Atlantic Ocean.

2. There were 2,240 passengers and crew on that voyage. The ship left Southampton, England, on April 10, 1912. It was scheduled to reach New York City ten days later. But at 11:30 on the night of April 14, the Titanic hit an iceberg that tore open the ship’s massive hull. As the vessel took on water, it began to sink.

3. The ship’s captain told his radio operator to call for help. Then he ordered the crew to lower the lifeboats. In the panic, fleeing passengers launched most of the boats with several empty seats. By 2:20 the next morning, three hours after striking the iceberg, the Titanic had sunk. Another ship, the Carpathia, was 58 miles away when it received the distress call. The Carpathia rushed to rescue the survivors. Only 705 people were saved.

4. Newspaper headlines around the world announced the loss of the unsinkable ship. It quickly became the subject of countless books and films. In fact, the first Titanic movie appeared just a month later, starring one of the survivors. British and American officials tried to discover the causes of the disaster. They looked at everything, from the way the ship was built to the actions of the crew. In the end, the main lesson of the Titanic was that no ship is truly unsinkable.

Close Reader Habits

As you read, underline clues that tell you whether this is a firsthand or secondhand account.
How would a firsthand account and a secondhand account of the sinking of the Titanic differ?

**Think**

1. Who would write a firsthand account about the sinking of the Titanic?

2. Reread the magazine article. Do you think this is a firsthand or secondhand account? Find evidence in the selection to support what you think.

**Talk**

3. Imagine that a passenger on the Titanic writes about that experience. What kind of account would that be? Discuss how that person’s account would be similar to and different from the article you just read.

**Write**

4. **Short Response** How would the facts in paragraphs 2 and 3 of the passage differ if a passenger on the Titanic described the disaster? Use the space provided on page 250 to write your answer.
How are the two accounts of the sinking different? Reread the article and the memoir. **Underline** details in the memoir that give facts not told in the article.
Think

Use what you learned from reading the memoir and the article to answer the following questions.

1. The facts in the magazine article on page 246 came from earlier news reports and articles about the event. In the memoir on page 248, where did James McGough get his facts?
   - A. He read about the events in the magazine article.
   - B. He heard about the events from friends on the ship.
   - C. He imagined the events and wrote a story about them.
   - D. He experienced the events as they happened.

2. Which information did McGough give that was not in the article?
   - A. The Carpathia traveled to the Titanic’s location.
   - B. Passengers were put into lifeboats.
   - C. The lights on the Titanic went out deck by deck.
   - D. The Titanic sank into the ocean.

3. Which words and phrases are clues to McGough’s feelings on the night that the Titanic sank? Write two clues in the box below.

   

Talk

4. How are the two accounts of the Titanic the same? How are they different? Use the Venn diagram on page 251 to organize your thoughts.

Write

5. **Short Response** Use the information in your Venn diagram to describe how the firsthand and secondhand accounts of the disaster are the same and different. Use the space provided on page 251 to write your answer.

HINT Choose a writing structure that shows similarities and differences.
The Unsinkable Titanic

4 Short Response How would the facts in paragraphs 2 and 3 of the passage differ if a passenger on the Titanic described the disaster?

HINT What would stand out in a passenger’s mind about that night?

Check Your Writing

☐ Did you read the prompt carefully?
☐ Did you put the prompt in your own words?
☐ Did you use the best evidence from the text to support your ideas?
☐ Are your ideas clearly organized?
☐ Did you write in clear and complete sentences?
☐ Did you check your spelling and punctuation?
Use the Venn diagram below to organize your ideas.

**Firsthand Account**

**Secondhand Account**

**Both**

**Write** Use the space below to write your answer to the question on page 249.

**Short Response** Use the information in your Venn diagram to describe how the firsthand and secondhand accounts of the disaster are the same and different.

HINT Choose a writing structure that shows similarities and differences.
Launch minus 10 seconds . . . 9 . . . 8 . . . 7 . . . The three launch engines light. The shuttle shakes and strains at the bolts holding it to the launch pad. The computers check the engines. It isn’t up to us anymore—the computers will decide whether we launch.

3 . . . 2 . . . 1 . . . The rockets light! The shuttle leaps off the launch pad in a cloud of steam and a trail of fire. Inside, the ride is rough and loud. Our heads are rattling around inside our helmets. We can barely hear the voices from Mission Control in our headsets above the thunder of the rockets and engines. For an instant I wonder if everything is working right. But there’s no time to wonder, and no time to be scared.

In only a few seconds we zoom past the clouds. Two minutes later the rockets burn out, and with a brilliant whitish-orange flash, they fall away from the shuttle as it streaks on toward space. Suddenly the ride becomes very, very smooth and quiet. The shuttle is still attached to the big tank, and the launch engines are pushing us out of Earth’s atmosphere. The sky is black. All we can see of the trail of fire behind us is a faint, pulsating glow through the top window.
Launch plus six minutes. The force pushing us against the backs of our seats steadily increases. We can barely move because we’re being held in place by a force of 3 g’s—three times the force of gravity we feel on Earth. At first we don’t mind it—we’ve all felt much more than that when we’ve done acrobatics in our jet training airplanes. But that lasted only a few seconds, and this seems to go on forever. After a couple of minutes of 3 g’s, we’re uncomfortable, straining to hold our books on our laps and craning our necks against the force to read the instruments. I find myself wishing we’d hurry up and get into orbit.

Launch plus eight and one-half minutes. The launch engines cut off. Suddenly, the force is gone, and we lurch forward in our seats. During the next few minutes the empty fuel tank drops away and falls to Earth, and we are very busy getting the shuttle ready to enter orbit. But we’re not too busy to notice that our books and pencils are floating in midair. We’re in space!
1. A crowd of about 250,000 gathered early that bright June morning at Cape Canaveral, Florida, many wearing “Ride, Sally Ride” T-shirts. Across the nation, many others also watched and waited. Suddenly, the engines ignited, and smoke and steam billowed across the site. Then booster rockets lifted the huge space shuttle slowly into the air. Gathering speed, the Challenger blasted off into orbit for its second mission.

2. At the same moment, one crew member, mission specialist Sally K. Ride, was rocketing into history. Ride was America’s first woman to travel into space. Sally Ride had earned the right to be aboard the space shuttle. A physicist, she had been in astronaut training for six years. She had also worked at Mission Control, relaying messages to shuttle crews during earlier shuttle flights. Ride had even helped develop a robotic arm to use in space. This knowledge and experience had led Captain Bob Crippen to choose her as a crew member. And Ride was ready for the challenge.

3. In just over eight minutes, launch engines were lifting Challenger to its 184-mile high orbit. During the ascent, Ride acted as flight engineer, calling out checklists to the pilots. She also joked with Mission Control about the exciting ride.

4. Once in orbit, the five astronauts wasted little time. In the busy days ahead, the crew completed a number of experiments. This included using radar and a high-resolution camera to study the earth’s atmosphere. Ride helped launch two communications satellites. She also became the first woman to operate the shuttle’s robotic arm by releasing a satellite into orbit.
Think

Use what you learned from reading the memoir and the magazine article to respond to the following questions.

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

   Part A
   Which statement best describes the differences between the two accounts from *To Space and Back* and “Memorable Milestones: Space Shuttle Missions”?
   
   A. One is a news article. The other is from an eyewitness who watched the launch.
   
   B. Both are written by people who were at Cape Canaveral on June 18, 1983.
   
   C. One was written at the time of the launch. The other was written several years later.
   
   D. One is based only on facts. The other is based on facts and personal experience.

   Part B
   Write a sentence from each passage that supports your answer to Part A.

   *To Space and Back* ____________________________

   “Memorable Milestones” ____________________________

2. Which phrase from “Memorable Milestones: Space Shuttle Missions” helps the reader understand the meaning of the word *ascent* in paragraph 3?

   A. “ready for the challenge”
   
   B. “lifting Challenger”
   
   C. “acted as flight engineer”
   
   D. “Once in orbit”
Complete the chart to compare the different accounts of the same event. Write an X in the box next to a detail that describes *To Space and Back* or “Memorable Milestones: Space Shuttle Missions.” Some details may describe both accounts.

<table>
<thead>
<tr>
<th>Statement</th>
<th><em>To Space and Back</em></th>
<th>“Memorable Milestones”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describes the launch of a space shuttle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explains how the launch affects the author’s body</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tells why the mission was unlike other missions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presents all events as taking place in the past</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presents events as if they are taking place now</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Write**

Describe the difference in focus between Sally Ride’s memoir and the account of the launch in “Mission Milestones.” Reread the two texts. Underline details that show the difference in the focus of each account.

**Plan Your Response** How is the focus of Sally Ride’s memoir different from the focus of the magazine article? Use a Venn diagram to organize your thoughts before you write.

**Write an Extended Response** Using evidence from the texts and information from your Venn diagram, describe how the focus of the firsthand and secondhand account is different.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
Learning Target

Now that you’ve compared and contrasted different accounts about the same events, write about how you developed a deeper understanding of what happened.
Prerequisite: Classify Quadrilaterals

Study the example showing how to classify and compare quadrilaterals. Then solve problems 1–7.

Example

Is every square also a rectangle and a rhombus? Use a table to compare quadrilaterals.

<table>
<thead>
<tr>
<th>Quadrilateral</th>
<th>4 sides</th>
<th>4 angles</th>
<th>4 square corners</th>
<th>2 pairs of parallel sides</th>
<th>2 pairs of sides that are the same length</th>
<th>4 sides that are the same length</th>
</tr>
</thead>
<tbody>
<tr>
<td>square</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>rectangle</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>rhombus</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Yes. Every square can be named as a rectangle and a rhombus.

1. A parallelogram is a quadrilateral with 2 pairs of parallel sides and 2 pairs of sides that are the same length. Circle the quadrilaterals below that are parallelograms.

   A   B   C   D   E


   [Blank line]

3. A rectangle is a quadrilateral. Describe a rectangle by telling about its sides and its corners.

   [Blank line]
Solve.

4 Use the words in the box. Name each shape below. Use as many words from the box as apply. Describe the sides and corners of each shape.

\[
\begin{array}{cc}
\text{a.} & \text{b.} \\
\end{array}
\]

\begin{itemize}
\item \textbf{a.} Names: \\
\text{Description:} \\
\end{itemize}

\begin{itemize}
\item \textbf{b.} Names: \\
\text{Description:} \\
\end{itemize}

5 Draw a quadrilateral that has at least 1 pair of parallel sides, but no square corners.

6 Draw a quadrilateral that has at least 1 square corner, but is not a rectangle.

7 Draw a quadrilateral that does not have pairs of parallel sides or sides of the same length.
Sort Shapes Based on Sides

Study the example showing how to sort shapes into groups based on parallel and perpendicular sides. Then solve problems 1–4.

Example

Sort the shapes in the box based on parallel and perpendicular sides. Put the shapes in the Venn diagram below.

triangle rectanglesquarerhombushexagonrectangle

parallel sides perpendicular sides parallel and perpendicular sides

1 Look at the Venn diagram in the example above. Then look at the shape at the right. Which group in the Venn diagram does the shape belong in?

2 Suppose there is another group for shapes with “no parallel or perpendicular sides.” Circle the shapes below that belong in this group.
Solve.

Look at each shape below. Choose Yes or No to tell whether the shape has parallel sides. Then choose Yes or No to tell whether it has perpendicular sides.

<table>
<thead>
<tr>
<th></th>
<th>Parallel Sides</th>
<th>Perpendicular Sides</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>b.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>c.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>d.</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Look at the shapes of the road signs below. Write the name of each sign in the Venn diagram to sort the shapes based on parallel or perpendicular sides.

- Crosswalk sign
- Stop sign
- Speed limit sign
**Sort Shapes Based on Angles**

Study the example showing how to sort shapes into groups based on angles. Then solve problems 1–5.

**Example**

Label each angle in the shapes below with “a” for acute, “r” for right, and “o” for obtuse. Then draw an arrow from each shape to the group it belongs to.

1. Write the number of acute, right, and obtuse angles for each pentagon shown in the table below.

<table>
<thead>
<tr>
<th></th>
<th>Acute</th>
<th>Right</th>
<th>Obtuse</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Shape X" /></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><img src="image" alt="Shape Y" /></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Explain how these pentagons are different based on their angles.
Solve.

3 Choose Yes or No to tell whether each shape belongs in the group described.

a.  
   
   all right angles
   
   □ Yes  □ No

b.  
   
   right and acute angles
   
   □ Yes  □ No

c.  
   
   obtuse and acute angles
   
   □ Yes  □ No

d.  
   
   right and obtuse angles only
   
   □ Yes  □ No

e.  
   
   all obtuse angles
   
   □ Yes  □ No

4 Describe a group that the two shapes below belong in, based on the kind of angles the shapes have.

5 Look at the shapes in problem 4. Where do they belong in the Venn diagram below? Mark the place with an X.
Study the example showing how to sort triangles into groups based on kinds of angles and lengths of sides. Then solve problems 1–4.

Example

What is the same about the two triangles shown at the right? What is different?

You can sort triangles into groups based on the kinds of angles they have: acute, right, or obtuse.

You can also sort triangles based on the lengths of their sides.

- equilateral: 3 equal sides
- isosceles: 2 equal sides
- scalene: 0 equal sides

Triangles $B$ and $H$ are the same because they are both obtuse triangles. They each have 1 obtuse angle.

Triangles $B$ and $H$ are different because triangle $B$ is a scalene triangle and triangle $H$ is an isosceles triangle.

1. Look at the table. Name each triangle below based on the kinds of angles it has and the lengths of its sides.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description of Angles</th>
<th>Name</th>
<th>Description of Sides</th>
</tr>
</thead>
<tbody>
<tr>
<td>acute</td>
<td>3 acute angles</td>
<td>equilateral</td>
<td>3 equal sides</td>
</tr>
<tr>
<td>right</td>
<td>1 right angle</td>
<td>isosceles</td>
<td>2 equal sides</td>
</tr>
<tr>
<td>obtuse</td>
<td>1 obtuse angle</td>
<td>scalene</td>
<td>0 equal sides</td>
</tr>
</tbody>
</table>

---

---
Solve.

2 Look at the name of each triangle below. Then use the numbers in the boxes to write the missing length for one side of each triangle.

![Triangle Diagram]

3 Norma drew the lines shown below on a piece of paper. Write labels inside each triangle formed by the lines: “a” for acute, “r” for right, “o” for obtuse, “e” for equilateral, “i” for isosceles, “s” for scalene.

![Triangle Diagram]

4 Circle the letter of each true statement below.

   a.  An obtuse triangle does not have acute angles.
   b.  A scalene triangle can be isosceles.
   c.  Equilateral triangles are always acute.
   d.  Isosceles triangles may also be equilateral.
   e.  Right triangles are scalene or isosceles.
Classify Two-Dimensional Figures

Solve the problems.

1. Which is the best name for the group of triangles below?

- A acute, scalene
- B acute, isosceles
- C obtuse, scalene
- D obtuse, isosceles

2. Which choice best describes the group this shape belongs in, based on the kinds of sides and angles it has?

- A parallel sides, acute angles
- B perpendicular sides, acute angles
- C parallel sides, obtuse angles
- D perpendicular sides, obtuse angles

Angela chose A as the correct answer. How did she get that answer?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Solve.

3 Does a shape with a right angle always have perpendicular sides? Explain.

Draw some shapes with right angles. What kind of sides do they have?

______________________________________________________________

______________________________________________________________

______________________________________________________________

4 Sort the shapes below into two different groups. Use a table or a Venn diagram. Label the group name and draw each shape in the group that it belongs in.

One way to sort shapes is by the number and kinds of angles they have.

Show your work.

5 Look at problem 4. Sort the shapes a different way. Label the group name and draw each shape in the group that it belongs in.

Another way to sort shapes is by the number and kinds of sides they have.

Show your work.
The Woodwind Family

The instruments in this family all used to be made of wood, which gives them their name. Today, they are made of wood, metal, plastic or some combination. They are all basically narrow cylinders or pipes, with holes, an opening at the bottom end and a mouthpiece at the top. You play them by blowing air through the mouthpiece (that's the "wind" in "woodwind") and opening or closing the holes with your fingers to change the pitch. Metal caps called keys cover the holes of most woodwind instruments.

The mouthpieces for some woodwinds, including the clarinet, oboe and bassoon, use a thin piece of wood called a reed, which vibrates when you blow across it. The clarinet uses a single reed made of one piece of wood, while the oboe and bassoon use a double reed made of two pieces joined together. The smaller woodwinds play higher pitches while the longer and larger instruments play the lower notes. The woodwind family of instruments includes, from the highest sounding instruments to the lowest, the piccolo, flute, oboe, English horn, clarinet, E-flat clarinet, bass clarinet, bassoon and contrabassoon.

The flute is the oldest of all instruments that produce pitched sounds (not just rhythms), and was originally made from wood, stone, clay or hollow reeds like bamboo. Modern flutes are made of silver, gold or platinum. A standard flute is a little over 2 feet long and is often featured playing the melody. You play the flute by holding it sideways with both hands and blowing across a hole in the mouthpiece, much like blowing across the top of a bottle. Your fingers open and close the keys, which changes the pitch.

A shorter version of the flute is called the piccolo, which means small in Italian. At half the size of a standard flute, piccolos play the highest notes of all the woodwinds; in the orchestra one of the flute players will also play piccolo if that instrument is required. The high piping sound of the piccolo is also heard in traditional drum corps and marching band music.
The **oboe** is a 2 foot long black cylinder with metal keys covering its holes, and its mouthpiece uses a double reed, which vibrates when you blow through it. This vibration of the reed makes the air inside the oboe move, and thus creates sound. To play it, hold the oboe upright, blow through the double reed in your mouth, and use both hands to press down on the keys to open and close the holes and change the pitch. In addition to playing in the orchestra, the first chair oboist is also responsible for tuning the orchestra before each concert.

The **English horn** is closely related to the oboe, also uses a double reed, and is played in the same manner. It's longer than an oboe and its tube is a bit wider. At the bottom end of the English horn it opens out into a rounded bell shape, which gives it a warmer, fuller sound. Because it's larger, the English horn also has a lower pitch range than an oboe. An oboe player will also play English horn if it is needed.

The **clarinet** could easily be mistaken for an oboe, except for the mouthpiece, which uses a single reed. Clarinets come in a number of different sizes, and the standard B-flat clarinet is just over 2 feet long. The clarinets play both melodies and harmonies, and they have a dark rich sound in their lower notes, while the upper part of the clarinet's range is bright and resonant. You play the clarinet as you do an oboe, by holding it upright, blowing through the reed, and using your hands to change the pitches by opening and closing the keys with your fingers.

The **bass clarinet** is so large that its top and bottom are bent to make it easier for musicians to hold and play. Its greater length allows it to play some of the lowest notes in the orchestra.
The **bassoon** is a long pipe, doubled in half, made of wood, with many keys. The bend in the pipe makes it possible for musicians to play it comfortably. If it were straight, the bassoon would be around 9 feet long! Like the oboe, the bassoon uses a double reed, which is fitted into a curved metal mouthpiece. The bassoons have a similar range to that of the cello. Bassoons usually play lower harmonies, but you will sometimes hear their hollow low notes featured in a melody. You play the bassoon by holding it upright and blowing through the double reed. The air travels down the tube and then makes a u-turn and goes up and out the top. Just like the oboe, you use both hands to press on the keys to open and close the holes and change the pitch.

Imagine a longer bassoon with a wider pipe. The **contrabassoon** is the grandfather of the wind section and is so much larger than a regular bassoon that its tube is doubled over twice to allow the player to hold it. It takes a lot of breath to make sound come out of such a long pipe! The lone contrabassoon plays the lowest notes in the entire orchestra.

The **saxophone** is a woodwind instrument usually made of brass and played with a single-reed mouthpiece. Although most saxophones are made from brass, they are categorized as woodwind instruments, because sound is produced by a single reed, rather than lips vibrating in a mouthpiece cup as with the brass instrument family. The pitch of the saxophone is changed by covering holes using the keys which control the air by changing the length of the tube. There are four different saxophones...the soprano, alto, tenor, and baritone. The soprano saxophone plays the highest notes while the baritone saxophone plays the lowest notes.
The Woodwind Family

Draw a line from the instrument to its name.

Recorder  Oboe  Clarinet  Piccolo  Bassoon  Flute

Does the saxophone belong to the woodwind family?  _____________________________

What is the difference between the blow hole of a flute’s mouthpiece and the reed on an oboe?
_____________________________________________________________________________________
_____________________________________________________________________________________

Which instrument plays the highest pitches?  _________________________________

Which instrument plays the lowest pitches?  _________________________________
Match the Parts of the Woodwind Instruments with their Names

Listed below are the names of the parts of the clarinet, flute and oboe.

On each blank, write the matching letter for the part.

What Am I?

I am the place you put your fingers...What Am I? __________________________

I am where the sound comes out of the clarinet...What Am I? __________________

I am where you blow the flute and the piccolo...What Am I? ______________________

I am the type of reed used on the oboe, bassoon, and English horn...What Am I? ________________

I am the type of reed used on the saxophone and the clarinet...What Am I? ______________
Geometry Vocabulary Match

What You Need

- Recording Sheet

What You Do

1. Pick a word on the Recording Sheet.
2. Say the word and describe an example.
3. Your partner tells a non-example for the word and explains why it is a non-example.
4. Draw a line to the definition.
5. Take turns until all the words have been used.

A line segment starts at one point and ends at another point.
Example:

A line is a non-example because it never ends.

Go Further!

Describe this shape using at least three vocabulary words from the Recording Sheet.
### Geometry Vocabulary Match

<table>
<thead>
<tr>
<th>Math Terms</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>point</td>
<td>lines that are always the same distance apart and never cross</td>
</tr>
<tr>
<td>line</td>
<td>a straight row of points that starts at one point and goes on forever in one direction</td>
</tr>
<tr>
<td>ray</td>
<td>a straight row of points that goes on forever in two directions</td>
</tr>
<tr>
<td>parallel lines</td>
<td>a single location in space</td>
</tr>
<tr>
<td>perpendicular lines</td>
<td>a geometric shape made by two rays, lines, or line segments that meet at a common endpoint</td>
</tr>
<tr>
<td>angle</td>
<td>a straight row of points that starts at one point and ends at another point</td>
</tr>
<tr>
<td>line segment</td>
<td>lines that cross and form a right angle</td>
</tr>
</tbody>
</table>
Triangle Vocabulary Match

What You Need
- Recording Sheet

What You Do
1. Pick a triangle name on the Recording Sheet.

2. Say the name and describe an example.

3. Your partner tells a non-example and explains why it is a non-example.

4. Draw a line to the definition.

5. Take turns until all the triangle names have been used.

Check Understanding
Use two triangle names from the Recording Sheet to describe a triangle with two sides the same length and three acute angles.

A right triangle has one right angle. Example:

This triangle is a non-example because it does not have a right angle.

Go Further!
Write a triangle name from the Recording Sheet that could describe this shape. Your partner writes a different name that could also describe the shape. Check each other’s answers. If there is still time, draw different examples of the triangle names on the Recording Sheet.
**Triangle Vocabulary Match**

**Triangle Names**
- scalene triangle
- right triangle
- equilateral triangle
- obtuse triangle
- isosceles triangle
- acute triangle

**Definitions**
- a triangle with all three sides the same length
- a triangle with two sides the same length
- a triangle with no sides the same length
- a triangle with three acute angles
- a triangle with one right angle
- a triangle with one obtuse angle
Classifying Shapes

What You Need

- Recording Sheet

What You Do

1. Take turns. Pick a letter.

2. Classify the shape by drawing it in one or more columns on the Recording Sheet.

3. Your partner checks the answer.

4. Continue until every letter has been used.

Check Understanding

Which shapes in the table have at least one obtuse angle and at least one pair of parallel sides? Name the shapes.

- A: Pentagon
- B: Right Triangle
- C: Parallelogram
- D: Trapezoid
- E: Isosceles Triangle
- F: Rectangle

Go Further!

Draw a shape that is not shown above. Your partner classifies the shape on the Recording Sheet.
Classifying Shapes

<table>
<thead>
<tr>
<th>Shapes with at Least One Pair of Parallel Sides</th>
<th>Shapes with at Least One Pair of Perpendicular Sides</th>
<th>Shapes with at Least One Acute Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

I know that some of the shapes belong in only one category. Other shapes belong in two or more categories.
<table>
<thead>
<tr>
<th>Alphabet Fitness</th>
<th>A - 20 Jumping Jacks</th>
<th>N - 20 Second Plank</th>
</tr>
</thead>
<tbody>
<tr>
<td>B - 20 Crunches</td>
<td></td>
<td>O - 20 Jumping Jacks</td>
</tr>
<tr>
<td>C - 10 Squats</td>
<td></td>
<td>P - 10 Arm Circles</td>
</tr>
<tr>
<td>D - 10 Pushups</td>
<td></td>
<td>Q - 15 Crunches</td>
</tr>
<tr>
<td>E - 20 Mountain Climbers</td>
<td></td>
<td>R - 5 Pushups</td>
</tr>
<tr>
<td>F - 10 Burpees</td>
<td></td>
<td>S - 15 Mountain Climbers</td>
</tr>
<tr>
<td>G - 10 Arm Circles</td>
<td></td>
<td>T - 20 High Knees</td>
</tr>
<tr>
<td>H - 15 Squats</td>
<td></td>
<td>U - 15 Squats</td>
</tr>
<tr>
<td>I - 5 Push-ups</td>
<td></td>
<td>V - 10 Burpees</td>
</tr>
<tr>
<td>J - 20 HighKnees</td>
<td></td>
<td>W - 30 JumpingJacks</td>
</tr>
<tr>
<td>K - 10 Push-ups</td>
<td></td>
<td>X - 15 Crunches</td>
</tr>
<tr>
<td>L - 10 WalkingLunges</td>
<td></td>
<td>Y - 20 Jumping Jacks</td>
</tr>
<tr>
<td>M - 5Burpees</td>
<td></td>
<td>Z - 20 Plank Shoulder Taps</td>
</tr>
</tbody>
</table>