# Monday

**English Language Arts: ELAGSE3RI5**
Print and begin [Text Features](#).

**Math: MGSE3MD3**
Print and complete [Introduction: Solving Problems Using Scaled Graphs](#).

**Physical Education: PE31a**
Locomotor Movements: Spend 20 min practicing the locomotion patterns of hopping, galloping, running, sliding, skipping, and jumping. Try 3-5 min of one movement, then switch. Look at the criteria for each [locomotor movement on the chart](#). What movements do you need to improve on? Spend an extra 3-5 min practicing the movement that is the most challenging to you.

# Tuesday

**English Language Arts: ELAGSE3RI5**
Complete [Text Features](#) from Monday.

**Math: MGSE3MD3**
Print and complete [Solving Problems Using Scaled Graphs Practice](#).

**Art: VA3CR2**
(Students may use pencils, coloring pencils, crayons and/or markers in a sketchbook or on a piece of paper.) Following last week's theme of an animal playing an instrument, imagine that an animal has been hired to play a musical instrument at a dance party. Create a drawing of a party with an animal playing an instrument. Include at least three other animals dancing. Write a list of words that describe the party and type of music the animals are dancing to.

# Wednesday

**English Language Arts: ELAGSE3RI7**
Print and complete [Connecting Words and Pictures in Informational Text](#).

**Math: MGSE3MD3**
Print and complete [Introduction: Draw Scaled Graphs](#).

**Physical Education: PE31a and PE32a**
Tabata Fitness 2.0: Like last week but check out the new moves! Perform each move below, alternating 20 seconds of all-out effort with 10 seconds of rest. Repeat the same move for 8 rounds, for a total of 4 minutes. Then perform the next move on the list, following the same directions. You should complete the entire list of moves in 24 minutes. List of moves: Curl Ups, Invisible Jump Rope, Planks, Jog in Place, Push Ups, Mountain Climbers (From a plank position, you'll alternate bringing one knee to your chest, then back out again, speeding up each time until you're "running" against the floor).
### Thursday

<table>
<thead>
<tr>
<th>Subject</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Language Arts:</td>
<td><strong>ELAGSE3RI9</strong> Print and begin <em>Comparing and Contrasting Two Texts</em></td>
</tr>
<tr>
<td>Math: MGSE3MD3</td>
<td><strong>Draw Scaled Graphs Practice</strong></td>
</tr>
<tr>
<td>Music: ESGM3.RE.1</td>
<td><strong>Dynamics and Tempo</strong> Print and complete <strong>Dynamics</strong></td>
</tr>
</tbody>
</table>

### Friday

<table>
<thead>
<tr>
<th>Subject</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Language Arts:</td>
<td><strong>ELAGSE3RI9</strong> Complete <em>Comparing and Contrasting Two Texts</em> from Thursday</td>
</tr>
<tr>
<td>Math: MGSE3MD3</td>
<td><strong>Use Data Vocabulary</strong> Print and complete <strong>Make a Bar Graph</strong></td>
</tr>
<tr>
<td>Physical Education: PE32a and PE34a</td>
<td>You’ve made it through week 2 of your remote learning! It’s time for a dance party!!! You’re going to make this party ROCK by creating your very own dance. You’ll create a dance for 8 counts (beats) using the <strong>Dance Card</strong> to give you movement ideas. Now it’s time to practice! Start the music and let everyone perform their dance moves at the same time! Then, let’s put our moves together. First, your family member or friend will perform her/his dance for 8 counts. Next, you’ll take a turn and perform yours. Continue through all your family or friends’ moves. Next, teach each other your dance moves, put them in a sequence and then complete the entire dance all together! Keep the music pumping and dance! <strong>Tips:</strong> Practice counting 8 beats by clapping and counting to aloud to the music. Next, jump up and down while counting aloud to the music. Finally, jump up and down for 8 counts, clap for 8 counts, and then repeat until everyone understands how to count 8 beats of music.</td>
</tr>
</tbody>
</table>

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.
If you had to be a fish, you might want to be a lungfish. Why? Because the lungfish can do some amazing things that most other fish cannot.

**A Fish Out of Water**
The lungfish can breathe air. If its lake or river dries up, the lungfish drags itself over land until it finds water in which to live.

**A Fish Under Ground**
If the lungfish can’t find water to live in, it digs a hole in the ground and sleeps there until the water returns. This type of sleep is called **estivation**.

**Fun Facts**
- Lungfish live in South America, Australia, and Africa.
- Lungfish can live for more than 80 years.
- Lungfish have been around since before the dinosaurs.
**Think**  Look again at the article on lungfish. Then look at the features listed in the box below. Write each feature where it belongs in the first column of the chart.

<table>
<thead>
<tr>
<th>Feature</th>
<th>What It Does</th>
</tr>
</thead>
<tbody>
<tr>
<td>sidebar</td>
<td>tells what the whole passage is about</td>
</tr>
<tr>
<td>title</td>
<td>shows what part of the passage is about</td>
</tr>
<tr>
<td>key word</td>
<td>calls attention to an important word that you should pay attention to</td>
</tr>
<tr>
<td>heading</td>
<td>gives more information related to the main article</td>
</tr>
</tbody>
</table>

**Talk**  The “Academic Talk” box below lists several text features. Which features would you use to preview an article to get a feeling for what it was about? What would each feature tell you?

**Academic Talk**

Use these words and phrases to talk about the text.

- text features
- search tools
- key words
- sidebars
- headings
- hyperlinks
Baby, It’s Cold Outside!
The Arctic is a cold, snowy region around the North Pole. In winter, the temperature can drop as low as –40°F.
Explore

How can text features help you learn how polar bears survive in the winter?

Think

1. Finish the chart. Write an example from the article in the second column. Tell how it is used in the article in the third column. Be as specific as you can.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Example from the Article</th>
<th>What It Does in This Article</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>“Brrr … Polar Bears in the Arctic”</td>
<td>shows that the article will be about polar bears and where they live</td>
</tr>
<tr>
<td>Heading</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Key Word</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sidebar</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Talk

2. Imagine you’re doing a report on polar bears. You need some facts about what they do to survive the cold. Where would you look in this article, and why?

Write

3. Short Response  Explain how polar bears survive winter in the Arctic. Tell how you found the information in the article. Use the space provided on page 166 to write your answer.

HINT Remember to use all the text features to help you locate information.
1. A desert gets less than 10 inches of rain per year. It can get as hot as 100 degrees in the summer. Yet at night, it can be quite cold. It’s not easy to live in a desert, but some plants do.

**Plants That Store Water**

2. Many cactuses have a waxy coating. The wax helps stop water from evaporating, or escaping through tiny holes in the plant. Cactuses are good at storing water. When it rains, a cactus stores water to live on during dry periods. For more information on cactus plants, research the topic.

**Plants with Long Roots**

3. A second type of desert plant grows very long roots. One example is the mesquite (meh SKEET) tree. The roots of the mesquite find water deep in the ground. Some mesquites have roots that are 80 feet long!

**Plants with Hardy Seeds**

4. A third type of plant grows only in the spring, following winter rains. It grows quickly. Soon it drops seeds. These seeds can live for a long time. If the following spring is wet, the seeds will grow. If not, the seeds may wait two or three springs to grow.
Think

1. Which text feature would help you find more facts about how seeds help plants survive in the desert?
   - A the picture of the mesquite tree
   - B the sidebar “Deserts Around the Globe”
   - C the key word evaporating in paragraph 2
   - D the heading “Plants with Hardy Seeds”

2. Why do authors include key words in a text?
   - A to show which words are hard to say
   - B to use as headings within the article
   - C to help readers spot important words
   - D to call attention to the sidebar

Talk

3. In what places around the world might you find some of the plants you read about? Which text feature gave you this information?

Write

4. **Short Response**  Plants have three main ways of surviving in the desert. Tell what they are, and how the author uses text features to call attention to them. Use the space provided on page 167 to write your answer.

**HINT** Think about the three ways plants survive. Where do you see those ways listed in the article?
3 Short Response Explain how polar bears survive winter in the Arctic. Tell how you found the information in the article.

Don’t forget to check your writing.
How Plants Live in a Desert

4 Short Response  Plants have three main ways of surviving in the desert. Tell what they are, and how the author uses text features to call attention to them.

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?

HINT  Think about the three ways plants survive. Where do you see those ways listed in the article?
The Galápagos Islands are home to some unusual penguins. They swim. They waddle. They lay eggs. They do the same things other penguins do. But they do them on tropical islands, where the rocks can get hotter than 100°F (38°C). It’s so hot that the penguins’ eggs will cook if they are left out in the sun.

What are penguins doing in the tropics? Scientists think the first penguins got to the Galápagos by following a cool current. It flows up the coast of South America. Now small changes, called adaptations, let them live where it’s too hot for other penguins.
Keeping Cool

3 When people are hot, sweat helps them cool off. But birds can’t sweat. At the hottest time of day, Galápagos penguins hang out in the cool water. But eventually, they have to return to land. And when they do, their feathers trap heat like a heavy winter coat.

4 Unlike Antarctic penguins, Galápagos penguins have bare skin around their beaks, on their feet, and under their flippers. When they need to cool off, they strike a funny pose. They hunch over to keep the sun off their feet. Then they hold their wings out to let the wind blow across the bare places. The wind carries the heat away. They also open their mouths and pant, like dogs. Galápagos penguins protect their eggs by building nests under the shade of rocks, out of the sun.
As a boy growing up on the Galápagos Islands, Hernan Vargas had no idea how special the plants and animals around him were. In high school, he started volunteering with scientists who came from all around the world to study them. Now he is a scientist himself. Counting penguins is an important part of his job.

Scientists regularly count the penguins to see how they’re doing. But how many are hiding? To answer this question, Vargas and his team caught a bunch of penguins and painted some of their feathers yellow, then released them. When they counted penguins that year, they kept a separate count of the ones with yellow feathers. They found about half of their painted penguins, so they knew that about half were hiding somewhere. If half the painted penguins were hiding, probably about half of all of the penguins were hiding, too. So now they know that when they count penguins, they are getting about half of the total number.
Think  Use what you learned from reading the selection to respond to these questions.

1. What key words are called out in this article?
   A. Oddball All-Stars
   B. Scientific Name, Home Base, Size
   C. tropical, adaptations
   D. Penguin Hide and Seek

2. Where in the article would you tell someone to look for facts about how scientists keep track of the Galápagos penguins?
   A. the trading card titled “Galápagos Penguin”
   B. “Turn Up the Heat”
   C. “Keeping Cool”
   D. “Penguin Hide and Seek”

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

   Part A
   According to the section “Turn Up the Heat,” how are the Galápagos penguins different from other penguins?
   A. They prefer the cold.
   B. They’ve adapted to live in tropical heat.
   C. The penguins pant like dogs.
   D. Scientists paint some birds to help them cool off.

   Part B
   Which fact from the section “Turn Up the Heat” best supports your answer to Part A?
   A. The penguin eggs will cook if left out in the sun.
   B. Penguins followed cool currents to reach the Galápagos.
   C. Other penguins cannot survive in the Galápagos.
   D. The birds are about 21 inches tall.
4 Look at the underlined antonyms in this sentence from the “Penguin Hide and Seek” sidebar. Antonyms are words that have the opposite meanings.

To answer this question, Vargas and his team caught a bunch of penguins and painted some of their feathers yellow, then released them.

The word caught is the antonym of the word released. What does released mean?

A trapped  
B hid behind  
C colored  
D let go of

Write

The Galápagos penguins are different from Antarctic penguins. How have they had to change in order to survive in the tropics? Reread the article. Draw a line under each detail that shows how the Galápagos penguins deal with the heat. Then complete numbers 5 and 6.

5 Plan Your Response Make a 2-column chart. In the first column, list examples of how the penguins have changed in order to live in the tropics. In the second column, explain how each change helps them survive the heat.

6 Write an Extended Response Explain the similarities and differences between the Galápagos penguins and their Antarctic cousins. First, tell how the penguins are similar. Then explain why the Galápagos penguins have had to change. Finally, tell what those changes are and how they help the penguins to survive.
Learning Target

Now that you understand how text features and search tools can help you find information, explain how using them could help you complete a science report.
Use What You Know

You have had practice modeling and solving word problems. In this lesson, you will use information from graphs to solve word problems. Take a look at this problem.

Ron kept track of the points scored by his teammates during a basketball game. He recorded his data in the picture graph shown below. How many points did each teammate score?

<table>
<thead>
<tr>
<th>Points Scored During the Game</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alan</td>
</tr>
<tr>
<td>Cate</td>
</tr>
<tr>
<td>Gary</td>
</tr>
<tr>
<td>Mae</td>
</tr>
</tbody>
</table>

Key: Each 🏀 stands for 2 points.

a. The sentence at the bottom of the graph tells you that each 🏀 stands for ______________ points.

b. There is 1 🏀 next to Alan’s name. That means that Alan scored 2 points.

   There are 3 🏀 next to Cate’s name.

   How many points did Cate score? ______________ points

c. How many 🏀 are next to Gary’s name? ____________

d. How many points did Gary score? ______________ points

e. Explain how you could find the number of points Mae scored.
Look at Ron’s picture graph on the previous page. The key tells you that each 🏀 stands for 2 points. You can multiply the number of 🏀 by 2 to find the total number of points each student scored.

<table>
<thead>
<tr>
<th>Student</th>
<th>Number of 🏀</th>
<th>×</th>
<th>Points for each basket</th>
<th>=</th>
<th>Total Number of Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alan</td>
<td>1</td>
<td>×</td>
<td>2</td>
<td>=</td>
<td>2</td>
</tr>
<tr>
<td>Cate</td>
<td>3</td>
<td>×</td>
<td>2</td>
<td>=</td>
<td>6</td>
</tr>
<tr>
<td>Gary</td>
<td>5</td>
<td>×</td>
<td>2</td>
<td>=</td>
<td>10</td>
</tr>
<tr>
<td>Mae</td>
<td>4</td>
<td>×</td>
<td>2</td>
<td>=</td>
<td>8</td>
</tr>
</tbody>
</table>

The same basketball data can be shown on a bar graph. The bars on the bar graph below show how many points each student scored.

The numbers along the bottom of the bar graph are called the scale. The scale marks off equal sections. On this graph each number on the scale is 2 more than the number before it. The scale counts by 2s.

**Reflect**

1. What would it mean if the symbol for Alan was 🏀? Then how many points would Alan have scored? Explain. ____________________________________________
Read the problem below. Then explore different ways to answer questions about picture graphs.

Jaime asked students in his school to choose their favorite season. The picture graph shows how students answered. How many more students chose summer than chose winter as their favorite season?

### Favorite Season

<table>
<thead>
<tr>
<th></th>
<th>Winter</th>
<th>Spring</th>
<th>Summer</th>
<th>Fall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picture</td>
<td>☃️☃️☃️</td>
<td>☃️☃️</td>
<td>☃️☃️☃️☃️</td>
<td>☃️☃️☃️</td>
</tr>
</tbody>
</table>

Key: Each ☃️ stands for 5 students.

#### Picture It
You can use pictures to understand the problem.

Remember that each ☃️ stands for 5 students.

#### Model It
You can also use number lines to help understand the problem.

Remember that each ☃️ stands for 5 students.
Connect It  Now you will solve the problem from the previous page using equations.

2 What does the problem ask you to find?

__________________________________________________________

3 Complete the key. Each 🌼 stands for ___________ students.

4 Complete the table. Find the number of students who chose winter and the number who chose summer.

<table>
<thead>
<tr>
<th>Favorite Season</th>
<th>Number of 🌼</th>
<th>×</th>
<th>Students for each 🌼</th>
<th>=</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter</td>
<td>4</td>
<td>×</td>
<td>5</td>
<td>=</td>
<td>___________</td>
</tr>
<tr>
<td>Summer</td>
<td>___________</td>
<td>×</td>
<td>5</td>
<td>=</td>
<td>___________</td>
</tr>
</tbody>
</table>

5 Complete the equation to find how many more students chose summer than chose winter.

30 – 20 = ___________

So, ___________ more students chose summer than chose winter.

6 Explain why the key is important when you are solving a problem that has a picture graph.

__________________________________________________________

__________________________________________________________

Try It  Use the picture graph on the previous page and what you just learned to solve these problems. Show your work on a separate sheet of paper.

7 How many students did NOT choose spring or summer? ___________

8 How many more students chose spring or fall than chose summer? ___________
Read the problem below. Then explore different ways to answer questions about a bar graph.

The Hart School wants to build a new playground. The graph shows the number of dollars each grade has raised to build the playground. Grade 3 and Grade 4 together want to raise $300. How much more money must they raise?

**Money Raised for the Playground**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Amount Raised (in dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>50</td>
</tr>
<tr>
<td>3</td>
<td>80</td>
</tr>
<tr>
<td>4</td>
<td>60</td>
</tr>
<tr>
<td>5</td>
<td>100</td>
</tr>
<tr>
<td>6</td>
<td>40</td>
</tr>
</tbody>
</table>

**Explain It** You can use words to explain how to use the graph to find the number of dollars raised by each grade.

**Third Grade**
Point to the Grade 3 bar. Find the top of the bar. Follow the line at the top of the bar to the left. Stop at the number on the left side of the graph. This is the number of dollars Grade 3 raised.

**Fourth Grade**
Point to the Grade 4 bar. Find the top of the bar. Follow the line at the top of the bar to the left. Stop at the number on the left side of the graph. This is the number of dollars Grade 4 raised.
**Connect It**  Now you will solve the problem from the previous page using equations. Use the bar graph on the previous page to answer the questions.

9. What does each bar on the bar graph show?  

10. What do the numbers in the scale along the left side of the bar graph stand for?  

11. What is the difference between one number on the scale and the next number?  

12. Look at the Grade 3 bar. How much money did Grade 3 raise?  
   Look at the Grade 4 bar. How much money Grade 4 raise?  

13. What operation do you use to find out how much money was raised by Grade 3 and Grade 4 altogether?  
   How much money did Grade 3 and Grade 4 raise altogether?  

14. What operation do you use to find out how much more money must be raised in order for Grade 3 and Grade 4 to together raise $300?  
   How much more money must the two classes raise to raise a total of $300?  

15. Explain how the numbers in the scale of a bar graph help you to understand what the bar shows.  

---

**Try It**  Use the bar graph on the previous page and what you just learned to solve these problems. Show your work on a separate sheet of paper.

16. How much money in all have all the grades raised?  

17. How much more money have Grade 4 and Grade 5 raised altogether than Grade 2 and Grade 3 altogether?  

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Lesson 24  Guided Practice

Practice  Solving Problems Using Scaled Graphs

Study the example below. Then solve problems 18–20.

Example

Ms. Santos buys markers for each class. Find how many more markers Ms. Santos buys for Grade 3 than for Grade 2.

<table>
<thead>
<tr>
<th>Markers for Each Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 2</td>
</tr>
<tr>
<td>![Marker Symbols]</td>
</tr>
</tbody>
</table>

Key: Each \( \frac{1}{2} \) stands for 10 markers.

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

<table>
<thead>
<tr>
<th>Grade</th>
<th>Number of ( \frac{1}{2} )</th>
<th>×</th>
<th>Each ( \frac{1}{2} ) stands for</th>
<th>=</th>
<th>Number of Markers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 3</td>
<td>7</td>
<td>×</td>
<td>10</td>
<td>=</td>
<td>70</td>
</tr>
<tr>
<td>Grade 2</td>
<td>4</td>
<td>×</td>
<td>10</td>
<td>=</td>
<td>40</td>
</tr>
</tbody>
</table>

\(70 - 40 = 30\)

Solution 30 more markers

18 Use the picture graph above. How many markers did Ms. Santos buy in all?

Show your work.

Solution
Use the bar graph below to solve problems 19 and 20.

19 How much more snow fell in February and March combined than fell in November and December combined?

Show your work.

Solution

20 Which 2 months have the same amount of snowfall combined as January? Circle the letter of the correct answer.

A  February and March
B  December and March
C  November and December
D  November and February

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

Use the bar graph below to solve problems 1 and 2.

1. The bar graph above shows the number of laps each student completed in a walkathon. How many laps in all did the students complete?

   A. 4  
   B. 20  
   C. 36  
   D. 56

2. Use the bar graph above. How many more laps did Dema and Paige complete combined than Ben and Javin combined?

   Answer _______________ laps
Use the picture graph below to solve problems 3 and 4.

<table>
<thead>
<tr>
<th>Soccer Goals Scored This Season</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bears</td>
</tr>
<tr>
<td>Cheetahs</td>
</tr>
<tr>
<td>Eagles</td>
</tr>
<tr>
<td>Falcons</td>
</tr>
<tr>
<td>Lions</td>
</tr>
<tr>
<td>Tigers</td>
</tr>
</tbody>
</table>

Key: Each 🏟️ stands for 2 goals.

3 Tell whether each sentence is True or False.

a. The Eagles scored 10 goals. □ True □ False
b. The Lions scored 3 goals. □ True □ False
c. The Tigers scored as many goals as the Bears and the Lions combined. □ True □ False
d. The Falcons scored 2 more goals than the Eagles. □ True □ False

4 Name teams that together scored 20 goals.

Show your work.

**Solution**

✔️ Self Check Go back and see what you can check off on the Self Check on page 211.
## Grades 3-5: Locomotor Movement Cues

<table>
<thead>
<tr>
<th>Movement</th>
<th>Description</th>
</tr>
</thead>
</table>
| **HOPPING** | - Uses one foot  
- Bends knee  
- Lands on ball of foot |
| **GALLOPING** | - Bend knees  
- One foot chasing other  
- Lead foot stays the same |
| **RUNNING** | - Balls of feet touch ground first  
- Arms move in opposition to legs  
- Both feet come off the ground |
| **SLIDING** | - Sideways movement  
- One foot chases other  
- Lead foot stays the same |
| **SKIPPING** | - Step-hop  
- Alternates feet  
- Arms swing upward with legs |
| **JUMPING** | - Bend knees  
- Uses two feet  
- Lands on balls of feet |
Prerequisite: Read Pictographs and Bar Graphs

Study the example showing how to use a pictograph to answer a question. Then solve problems 1–8.

Example

Annie made a pictograph to show the types of books she read last summer. How many more mystery books than comedy books did Annie read?

Books Annie Read

<table>
<thead>
<tr>
<th>Biography</th>
<th>Comedy</th>
<th>Mystery</th>
<th>Fantasy</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>2</td>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>

Count to find how many of each type she read.

Write a number sentence to find the difference:

\[ 5 - 2 = 3 \]

Annie read 3 more mystery books than comedy books.

Use the pictograph above to solve problems 1–3.

1. How many biography and fantasy books did Annie read in all?

2. How many fewer comedy books than biography books did Annie read?

3. How many books in all did Annie read last summer?

Vocabulary

- **pictograph** a graph using pictures or symbols to show data.
- **data** pieces of information.
The bar graph shows the number of each type of book Eddy read last summer.

Use the bar graph to solve problems 4–8. Complete each sentence.

4 Eddy read the same number of ____________ and ____________ books.

5 Eddy read __________ more comedy books than art books.

6 Eddy read __________ mystery and art books.

7 Eddy read a total of __________ books that were not science fiction.

8 Last summer Eddy read __________ books altogether.

Vocabulary

bar graph a graph using bars to show data.
Study the example showing how to read and interpret a scaled pictograph. Then solve problems 1–9.

**Example**

Some third graders went on a field trip to the zoo. They voted for their favorite animals. The pictograph shows their choices. How many students chose giraffes as their favorite?

The key shows that each picture stands for 4 students. The row for giraffes has 4 pictures.

You can add 4 four times: 4 + 4 + 4 + 4 = 16.
You can multiply 4 by 4: 4 × 4 = 16.
So, 16 students chose giraffes.

Use the pictograph to solve problems 1–4.
Show your work.

1. How many students chose lions? __________

2. How many students chose snakes? __________

3. How many more students chose giraffes than lions? __________

4. How many fewer students chose lions than apes? __________
Use the pictograph to solve problems 5–9. Show your work.

Students voted for their favorite animal at the petting zoo. The pictograph shows the number of students who voted for each animal.

5. How many students voted for llamas? _________

6. How many fewer students chose goats than pigs? _________

7. How many votes did goats and rabbits get altogether? _________

8. How many more students chose rabbits than llamas? _________

9. Make your own statement about the data in the pictograph. Show how you know your statement is true.

________________________________________________________________________________________

________________________________________________________________________________________

________________________________________________________________________________________

________________________________________________________________________________________
Read and Interpret Bar Graphs

Study the example problem showing how to read and interpret a bar graph. Then solve problems 1–5.

**Example**

The bar graph shows the number of cartons of milk sold in one week. Were more cartons sold on Monday and Tuesday or on Wednesday and Thursday?

Look where the bars end. Read the scale on the left side of the graph:

Monday = 60, Tuesday = 90, Wednesday = 100, Thursday = 70.

60 + 90 = 150 and 100 + 70 = 170

More cartons of milk were sold on Wednesday and Thursday than on Monday and Tuesday.

**Use the bar graph above to solve problems 1 and 2. Show your work.**

1. How many cartons of milk were sold on the two days with the least number of cartons?

   _______________________

2. How many cartons of milk were sold in all that week?

   _______________________


Use the bar graph to solve problems 3–5. Fill in the blanks. Show your work.

The bar graph shows what students in Ms. Owens’ class bought for lunch one day.

<table>
<thead>
<tr>
<th>Type of Lunch</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sandwich</td>
<td>8</td>
</tr>
<tr>
<td>Salad</td>
<td>4</td>
</tr>
<tr>
<td>Hot Lunch</td>
<td>6</td>
</tr>
<tr>
<td>Pizza</td>
<td>10</td>
</tr>
</tbody>
</table>

3 Students bought the same number of pizza lunches as _____________ and _____________ together.

4 The number of salads bought is 2 less than the number of _______________ bought.

5 Make your own statement about the data in the graph. Tell how you know your statement is true.
Use the pictograph to solve the problems.

Mr. Green’s science class does shadow experiments. The pictograph shows the items they use.

<table>
<thead>
<tr>
<th>Materials for Shadow Experiments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masks</td>
</tr>
<tr>
<td>Flashlights</td>
</tr>
<tr>
<td>Blocks</td>
</tr>
<tr>
<td>Gloves</td>
</tr>
<tr>
<td>Rulers</td>
</tr>
</tbody>
</table>

Each ★ stands for 10 items.

1. Which two items total 100? Circle the letter for all that apply.
   - A masks and rulers
   - B flashlights and blocks
   - C blocks and gloves
   - D masks and flashlights

   How can you use addition facts to help find the answer?

2. How many gloves and rulers are used? Circle the letter of the correct answer.
   - A 7
   - B 10
   - C 40
   - D 70

   Leo chose A as the correct answer. How did he get that answer?

   Look at the key to understand what the symbols mean.
Use the bar graph to solve the problems.

Ms. Duddy counted the jars of paint that are in the art room. She made a bar graph to show the data.

![Bar Graph]

3 Tell whether each sentence is True or False.

a. There are as many jars of blue paint as jars of red and white paint combined.

b. There are more than 40 jars of paint in all.

c. There are fewer jars of yellow and red paint than blue and white paint.

4 What two colors of paint have at least 20 jars altogether? List two different pairs of colors.

______________________________

______________________________

______________________________

______________________________

“At least 20” means 20 or more than 20.
Using information from both the pictures and the words in a text will help you understand what you read.

**Read**

Texts use words and **illustrations**, or pictures, to provide information in a passage. Illustrations can also include photographs or **maps**. Maps are drawings that show the cities, roads, rivers, and other details of an area.

By thinking about both the words and the pictures, you will better understand what you are reading. You can use the information from both the words and the pictures to tell what you’ve learned.

**Look at this page. It is from a booklet about campgrounds at Pleasant Lake. What do you learn from both the words and the map?**

At Pleasant Lake you can enjoy boating, fishing, water skiing, and swimming. The lake is located 15 minutes from Mt. George. Campsites are available. **Call 111-1212 now!**
#### Think

Look again at the page from the booklet. Complete this chart to show what you learn from both the words and the map.

<table>
<thead>
<tr>
<th>What the Words Tell</th>
<th>What the Map Shows</th>
</tr>
</thead>
<tbody>
<tr>
<td>• what you can do at Pleasant Lake</td>
<td></td>
</tr>
</tbody>
</table>

#### Talk

What do you learn from the words that was not on the map? What details did you learn from the map that were not in the words?

#### Academic Talk

Use these words to talk about the text.

- illustrations
- maps
1. Do you know what your dog is saying when it barks? Now you can find out. A toy company in Japan has invented a tool that can tell you! One part of the device “listens” to the dog’s bark. Then it sends the information to the owner’s handheld speaker. The speaker plays a message telling how your dog is feeling. It can show six different feelings, including joy, sadness, excitement, and fear.

2. The gadget comes with some “extras,” too. For example, it has dog-training tips and a health checklist. It also has a “Bow Wow Diary.” It can even record barks when the dog is home alone!
**Think**

1. Complete the chart with details from the words and the photo.

<table>
<thead>
<tr>
<th>What the Words Tell</th>
<th>What the Photograph Shows</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Talk**

2. Paragraph 2 says that the device comes with “extras.” What extras does this device come with? Tell which of these you think dog owners would find most useful, and why.

**Write**

3. **Short Response** Use the photo to describe what the handheld piece looks like and what you think each part does. Use the space provided on page 288 to write your answer.

---

**HINT** Reread the words to help you understand what you are seeing in the photo.
The canal is one of the greatest inventions the world has ever known. A canal is a passage that uses water. It creates a shortcut allowing boats to travel through a land area. Without the canal, boats would have to travel around huge areas of land. Some of the oldest canals were built in Egypt nearly 4,000 years ago.

The Panama Canal is one of the most famous modern canals. It was completed in 1914. The canal stretches 51 miles across the Isthmus of Panama. It connects the Atlantic and Pacific Oceans. Before the canal was built, ships had to go around the tip of South America. The canal made the trip much shorter, faster, and safer.
**Think**

1. According to the map and the text of the passage, what does the Panama Canal connect?
   - A Atlantic Ocean and Pacific Ocean
   - B North America and South America
   - C Egypt and the United States
   - D New York City and the tip of South America

2. Based on the map and the text, what did you learn about canals?
   - A After the Panama Canal was built, most people still traveled around the tip of South America.
   - B The Panama Canal created a shorter but more dangerous route.
   - C Canals help people and goods get from one place to another more easily.
   - D Portions of canals stretch across large bodies of water.

**Talk**

3. Why are canals such a great invention? Find details in the text and map that help you understand this. Talk about your ideas with your partner.

**Write**

4. **Short Response** The author says that the canal is one of the greatest inventions the world has known. Write a paragraph telling why the author may have said this. Use one detail from the text and one detail from the map to support your answer. Use the space provided on page 289 to write your answer.
Write  Use the space below to write your answer to the question on page 285.

3  **Short Response**  Use the photo to describe what the handheld piece looks like and what you think each part does.

---

**The Invention That Dogs Are Barking About**

HINT  Reread the words to help you understand what you are seeing in the photo.

Don’t forget to check your writing.
**Write**

Use the space below to write your answer to the question on page 287.

---

**The Amazing Canal**

4 **Short Response** The author says that the canal is one of the greatest inventions the world has known. Write a paragraph telling why the author may have said this. Use one detail from the text and one detail from the map to support your answer.

---

**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?
1 Riiip! That familiar sound is what we might hear when we undo our shoes or open our backpacks. It's Velcro™! One side is fuzzy. The other side is prickly. It sort of feels like . . . a prickly plant? Well, that's because a prickly plant was the inspiration for Velcro.

2 George Mestral, the man who invented Velcro, lived in a country in Europe called Switzerland. One day, he was hiking in the Jura Mountains near his home. When he came home, he found lots of sticky burs on his pants and socks. What makes these stick? he wondered. He decided to look at them under a microscope.
3 Close up, George saw that each little spike on the bur ended in a hook. When he looked at the fibers of his pants and socks, he noticed they were little loops. The hooks from the burs got caught on the little loops. That got George thinking. These things have real sticking power. Imagine if they could stick things together in a useful way!

4 After many years of experimenting, George was able to re-create the sticking power of the little burs. He made two pieces of fabric: one piece that was covered in prickly hooks, the other covered in soft, fuzzy loops. Put them together and they hung on tight! With a hearty tug, riiip! They came apart!

5 George was eager to share his invention. A lot of people told him it was silly. George knew better. He knew that his invention could take the place of many fasteners. Zippers, buttons, pins, and shoelaces would all become a thing of the past, he claimed. In 1951, he patented his invention. He named it “Velcro,” a combination of the words velour (“velvet”) and crochet (“hook”). He began manufacturing it, sure that it would have thousands of uses. He was right.

6 Velcro’s first big fan was NASA. Astronauts had lots of bulky equipment to put on and take off. Velcro proved to be a strong, easy-to-pull-off fastener for space suits. It could hold tools in place so they wouldn’t float away. Skiers also wore bulky suits. They liked how Velcro fasteners held tight and opened easily. Sneaker makers saw Velcro straps as kid-friendly. Even toddlers could fasten and unfasten their straps!

7 From something most people find annoying, George Mestral gave us a wonderful convenience. The next time you hear that riiip, thank him!
Think  Use what you learned from reading the selection to respond to these questions.

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

**Part A**
How did George Mestral come up with the idea for Velcro?

A  He looked at the unusual fasteners used on hiking clothes.
B  He saw special fabrics that were fuzzy on one side and prickly on the other.
C  He had been asked to invent a new kind of fastener.
D  He noticed that burs were sticking to his pants and socks after a hike.

**Part B**
Which sentence from the passage best supports your answer to Part A?

A  “Close up, George saw that each little spike on the bur ended in a hook.”
B  “After many years of experimenting, George was able to re-create the sticking power of the little burs.”
C  “He named it ‘Velcro,’ a combination of the words *velour* (‘velvet’) and *crochet* (‘hook’).”
D  “Even toddlers could fasten and unfasten their straps!”

2 According to both the photographs and the text of the passage, how is a bur similar to Velcro?

A  Both grow on a plant.
B  Both are brownish in color.
C  Both have tiny hooks on the ends.
D  Both are shaped like tiny zippers.
3. Reread paragraph 4 and look again at the photographs. Which two of the following details explain how Velcro is made?

A. It is made with spikes and hooks pulled from burs.
B. It uses two different pieces of fabric.
C. It uses the same fibers that socks are made from.
D. It has prickly hooks on one side and loops on the other.
E. It is made from velvet.
F. It has special fasteners that act like laces.
G. It uses hooks called “crochets.”

4. What is one reason that astronauts first started to use Velcro?

A. It held tools in place so they wouldn’t float away.
B. It allowed astronauts to wear sneakers.
C. It allowed astronauts to walk inside a spaceship.
D. It helped astronauts walk safely on the moon.

5. Why was Velcro popular with skiers?

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
6 Read these sentences from paragraph 5.

He knew that his invention could take the place of many fasteners. Zippers, buttons, pins, and shoelaces would all become a thing of the past, he claimed.

What are two ways to figure out the meaning of fasteners?

A Use the meaning of invention, which means something similar.
B Use the examples in the next sentence, which are all objects used to join things together.
C Think about the meaning of fasten, which means “to hold in place.”
D Think about the meaning of fast, which means “quick.”
E Break the word fasteners down into two smaller words.

7 Why would Velcro be most useful on clothing meant for children?

A Children usually wear bulky clothing.
B Velcro makes a ripping sound that children enjoy.
C Velcro straps are easy to fasten and unfasten.
D It can be used to hold caps and gloves in place.

8 Which sentence does the photograph of the astronaut on page 291 help you understand?

A “He knew that his invention could take the place of many fasteners.”
B “Velcro’s first big fan was NASA.”
C “It could hold tools in place so they wouldn’t float away.”
D “Astronauts had lots of bulky equipment to put on and take off.”
Learning Target

Now that you’ve read articles that contain text and pictures, explain how both are important to understanding a topic.

Write

Short Response  Write a paragraph explaining how Velcro works. Use details from both the text and the photographs in your answer.
In Lesson 24, you learned to read picture graphs and bar graphs with scales. In this lesson you will learn how to draw these graphs. Take a look at this problem.

Tess has a game with letter tiles. Each tile shows one of the letters A, C, S, or T. Tess wants to make a picture graph showing the number of tiles with each letter.

- **a.** How many tiles have the letter A? __________
- **b.** How many tiles have the letter C? __________
- **c.** How many tiles have the letter S? __________
- **d.** How many tiles have the letter T? __________
- **e.** How many tiles are there in all? __________
- **f.** Suppose Tess uses this key: Each □ stands for 1 letter tile. How many pictures will she have to draw on the picture graph? __________
- **g.** Explain how Tess could change the key so that she could draw fewer □ on her picture graph?
Graphs can help you see and understand a lot of data at once. Tess wants to draw a graph to show the letters on the 70 tiles. That is a lot of data to show!

- Tess makes the picture graph shown at the right. She uses tile symbols to show the data. Her key shows each □ stands for 5 tiles. 5 is a good choice, because it is easy to show the tile data (20, 10, 25, and 15) as groups of 5.

Making each symbol stand for more than 1 makes it easier to show data that has a lot of pieces. You can say the picture graph uses a scale of 5.

- You can show the same data on a bar graph. The bars on the bar graph show how many tiles there are with each letter. The numbers along the bottom of the bar graph are called the scale. The scale marks off equal sections. This bar graph has a scale of 5.

---

### Reflect

1. Describe when you would use a scale greater than 1 for a bar graph.

   ____________________________________________
   ____________________________________________
   ____________________________________________
Read the problem below. Then explore how to show data in a picture graph.

Robert records the different bugs he sees. He wants to draw a picture graph using the data in the table. How can Robert make a picture graph?

### Bugs Robert Saw

<table>
<thead>
<tr>
<th>Type of Bug</th>
<th>Number of Bugs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ant</td>
<td>16</td>
</tr>
<tr>
<td>Bee</td>
<td>4</td>
</tr>
<tr>
<td>Moth</td>
<td>6</td>
</tr>
<tr>
<td>Spider</td>
<td>12</td>
</tr>
</tbody>
</table>

#### Picture It

You can use models to show the data.

You want to use a scale of 2. Use a symbol for each bug. Then draw circles around groups of 2.

- **Ant**: 
  - 16 ants
  - Use 8 symbols
- **Bee**: 
  - 4 bees
  - Use 2 symbols
- **Moth**: 
  - 6 moths
  - Use 3 symbols
- **Spider**: 
  - 12 spiders
  - Use 6 symbols

#### Model It

You can use multiplication to help you show the data.

Use a scale of 2. Now each symbol stands for 2 bugs.

- \(16 \div 2 = 8\) To show 16 ants, use 8 symbols.
- \(4 \div 2 = 2\) To show 4 bees, use 2 symbols.
- \(6 \div 2 = 3\) To show 6 moths, use 3 symbols.
- \(12 \div 2 = 6\) To show 12 spiders, use 6 symbols.
**Connect It** Now you will solve the problem from the previous page by drawing a picture graph.

2 What is a good title for Robert’s picture graph? Write it on the picture graph below.
   Complete the key for the picture graph.
   Use the data in the table on the previous page and the key to complete the last two rows.

<table>
<thead>
<tr>
<th>Ant</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bee</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key: Each 🐜 stands for __________ bugs.

3 Why does a scale of 2 work better here than a scale of 1?

---

**Try It** Use what you just learned to solve this problem. Show your work on a separate sheet of paper.

4 Lin records the number of shells she collects at the beach. Draw a picture graph of Lin’s data. Use a scale of 10. Be sure to write a title, a key, and draw symbols to show the data.

<table>
<thead>
<tr>
<th>Number of Shells Collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saturday</td>
</tr>
<tr>
<td>Sunday</td>
</tr>
<tr>
<td>Monday</td>
</tr>
<tr>
<td>Tuesday</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Saturday</th>
<th>20 shells</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunday</td>
<td>40 shells</td>
</tr>
<tr>
<td>Monday</td>
<td>30 shells</td>
</tr>
<tr>
<td>Tuesday</td>
<td>10 shells</td>
</tr>
</tbody>
</table>
Read the problem below. Then explore different ways to show the data and make a bar graph.

Nan keeps track of how many minutes she practices the guitar each day. She wants to draw a bar graph using the data shown at the right. How can Nan make a bar graph?

**Picture It**  You can use number lines to help you choose a scale.

The number line below has a scale of 5. The points on the number line show the number of minutes Nan practices on the different days.

```
Scale of 5
0 5 10 15 20 25 30 35 40
```

The number line below has a scale of 10. The points on the number line show the number of minutes Nan practices on the different days. Some points fall between the numbers on the scale.

```
Scale of 10
0 10 20 30 40
```

**Model It**  You can also use multiplication to help you make a bar graph.

Multiply to find the numbers to write on the bar graph scale. Use a scale of 5.

```
1 \times 5 = 5 \\
2 \times 5 = 10 \\
3 \times 5 = 15 \\
4 \times 5 = 20 \\
5 \times 5 = 25 \\
6 \times 5 = 30 \\
7 \times 5 = 35 \\
8 \times 5 = 40
```

The scale numbers will be 5, 10, 15, 20, 25, 30, 35, 40.
Connect It  Now you will solve the problem from the previous page by drawing a bar graph.

5 How do you use the scale to help you draw the bars on a bar graph?

6 What is a good title for Nan’s bar graph?
   Write the title on the graph.
   Write the two labels for the graph.
   Complete the scale.
   Draw the remaining bars on the graph.

7 Do you think a scale of 2 would work as well as a scale of 5 for this graph? Why or why not?

---

Try It  Use what you just learned to solve this problem. Show your work on a separate sheet of paper.

8 The table below shows ways that students get to school.

   Draw a bar graph using the data in the table.
   Be sure to write a title, choose a scale, label all the parts of the graph, and draw the bars.

<table>
<thead>
<tr>
<th>Ways We Get to School</th>
<th>Way We Travel</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bicycle</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Bus</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>Car</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Walk</td>
<td>20</td>
</tr>
</tbody>
</table>
Study the example below. Then solve problems 9–11.

**Example**

Sean asks his classmates to choose their favorite bike color. He records the results in this table. He wants to draw a bar graph of the data. How can he decide what scale to use?

<table>
<thead>
<tr>
<th>Favorite Bike Colors</th>
<th>Number of Classmates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td>12</td>
</tr>
<tr>
<td>Green</td>
<td>6</td>
</tr>
<tr>
<td>Orange</td>
<td>3</td>
</tr>
<tr>
<td>Red</td>
<td>9</td>
</tr>
</tbody>
</table>

Look at how you could show your work using number lines.

Scale of 2

```
  0   2   4   6   8   10   12   14
```

Scale of 3

```
  0   3   6   9   12   15
```

**Solution**

Sean could look at the data and find a scale that will be easy to use with the data. The data are all numbers you say when you skip count by 3, so 3 is a scale that makes sense.

Complete the bar graph using the data in Sean’s table above.

<table>
<thead>
<tr>
<th>Blue</th>
<th>Green</th>
<th>Orange</th>
<th>Red</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remember to write a title on your graph and label all the parts of your graph.

Are the numbers in the data set numbers you say when you skip count by 2 or skip count by 3?
10 Students recycled cans for the can drive. Elia recycled 20 cans. Liam recycled 40 cans. Jamal recycled 10 cans. Sara recycled 50 cans. Complete the picture graph of the recycling data.

<table>
<thead>
<tr>
<th>Number of Cans Recycled</th>
<th>Elia</th>
<th>Liam</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>![Can Icon]</td>
<td>![Can Icon]</td>
</tr>
</tbody>
</table>

Key: Each 🕐 stands for 10 cans.

11 Emilio begins a picture graph of the data in the table below.

<table>
<thead>
<tr>
<th>Favorite Yogurt Flavor</th>
<th>Cherry</th>
<th>Lemon</th>
<th>Strawberry</th>
<th>Vanilla</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>🍒🍒</td>
<td>🍋</td>
<td>🍓_FOCUS</td>
<td>🍦🍦🍦</td>
</tr>
</tbody>
</table>

Key:

Which key does Emilio use for his picture graph? Circle the letter of the correct answer.

A. Each 🍒 stands for 1 student.
B. Each 🍋 stands for 2 students.
C. Each 🍓 stands for 5 students.
D. Each 🍦 stands for 10 students.

Vicky chose C as the correct answer. How did she get that answer?
Solve the problems.

Jane makes a bar graph of the number of tickets to the school play she sells each day. Use the bar graph to answer problems 1–3.

1 Tell whether each sentence is True or False.
   a. The scale for Jane’s bar graph is 2. □ True □ False
   b. A good title for Jane’s bar graph would be “Tickets Sold for Ten Days.” □ True □ False
   c. If Jane had used a scale of 3 for her bar graph, she would have written the numbers 3, 6, 9, and 12 on the scale. □ True □ False
   d. If Jane had used a scale of 3 for her bar graph, all of the bars would have ended between the numbers on the scale. □ True □ False

2 Suppose Jane made a picture graph of her data and used a ticket symbol to represent two tickets sold. How many ticket symbols would she need to draw to show the number of tickets sold on Day 1?

   Answer ____________ ticket symbols
3 Which set of data does Jane use to make the bar graph?

- **A**
  - Tickets Sold
  - Day: 1, 2, 3, 4
  - Tickets Sold: 4, 2, 3, 5

- **B**
  - Tickets Sold
  - Day: 1, 2, 3, 4
  - Tickets Sold: 4, 8, 6, 10

- **C**
  - Tickets Sold
  - Day: 1, 2, 3, 4
  - Tickets Sold: 10, 6, 4, 8

- **D**
  - Tickets Sold
  - Day: 1, 2, 3, 4
  - Tickets Sold: 8, 4, 10, 6

4 The table below shows data for students’ favorite games. Choose a scale for the data. Then use your scale and the data to complete the picture graph below.

<table>
<thead>
<tr>
<th>Favorite Games</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hopscotch</td>
<td>20</td>
</tr>
<tr>
<td>Jump Rope</td>
<td>10</td>
</tr>
<tr>
<td>Kickball</td>
<td>50</td>
</tr>
<tr>
<td>Tag</td>
<td>30</td>
</tr>
</tbody>
</table>

Key: Each ☺️ stands for _____________ students.
Lesson 20
Comparing and Contrasting Two Texts

Learning Target
Looking at how two texts on the same topic are alike and different can give you a better understanding of the topic.

Read
When you read two texts on the same topic, remember to compare and contrast their most important points and key details. When you compare, you look at how the texts are alike. When you contrast, you look at how they are different.

Read the ad and the news story. How are they alike? How are they different?

Cellular Phones Approved for Sale

September 21, 1983

Today, a company received FCC approval to sell the DynaTAC 8000X. This phone will be the first handheld cellular phone to be offered to the public. It offers 60 minutes of talk time and weighs 28 ounces. The initial price will be $3,995.

Wish you could make a phone call anytime, anyplace? Now you can, with your own handheld cellular phone!
• Save favorite numbers.
• Talk for up to 60 minutes.
And at only 28 ounces, this phone can go anywhere you can.

Order yours today!

All New for 1983!
The DynaTAC 8000X
Think  Think about what you’ve learned so far about comparing and contrasting two texts on the same topic. How are they the same? How are they different? Use the Venn diagram below to organize your ideas.

Talk  Read the ad again and look at the details. Which details show that the ad is written for people who might want to buy the phone?

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

• important points  • compare  • contrast  • key details
A Short History of Computers
by Spencer Kay

1. In 1833, a man named Charles Babbage came up with the idea of the modern computer. But there was one problem. He couldn't figure out how to make one.

2. A hundred years later, computers became a reality. In 1939, the first computers were invented to help countries fight wars. Then, around 1950, companies began using computers to help run their businesses. These computers were so huge that they filled large rooms.

3. In 1981, the first PC, or personal computer, was sold. It fit on a desktop and had a keyboard and a screen. Since then, computer use has exploded. Computers are everywhere today. Computers have become faster, smarter, and smaller. They are so small that we hold them in our hands!

Computers Today
by Aparna Singh

1. Fifty years ago, few people knew much about computers. For the most part, they were used by the government or in businesses. But today computers are everywhere!

2. You might be surprised to learn how many everyday items contain computers. Cell phones and digital cameras use computers. So do TVs and kitchen ovens. Computers are used to run cars and airplanes. They also keep traffic lights blinking and trains on schedule.

Close Reader Habits

Underline the key details in each passage. Which details in the passages are alike? Which are different?
How are the two articles about computers alike and different?

1. Complete the Venn diagram to show how the two articles give information about computers that is alike and different.

- **A Short History of Computers**
- **Computers Today**
- **Both**

2. Get together with a partner and talk about how the information in each article is alike and different. What did you learn about computers by reading both articles?

3. **Short Response** Why has the use of computers increased so much over the last fifty years? Find reasons in both articles. Use the space provided on page 332 to write your answer.

**HINT** Beginning in 1981, what changed about computers and how they were used?
1 David Sarnoff had an idea. If sound could travel over the radio, why couldn't pictures? In 1939, he showed the world it was possible. Broadcast television was born.

2 No one person can claim that he or she invented television. People in several countries were inventing it about the same time. But even though television was invented, there was a catch. No one knew what to do with it. Sarnoff did, and he knew where to introduce it.

3 In 1939, Sarnoff showed the first television broadcast at the New York World’s Fair. People crowded around the tiny sets to watch the black-and-white pictures. The first show was of President Franklin D. Roosevelt, who gave a speech. That same year, television sets went on sale. The first ones were small—only 5-inch by 12-inch screens.

4 Television companies began showing programs. In 1939, the first baseball game was put on television. Stations began to broadcast news shows, children’s shows, comedies, and dramas. Today there are hundreds of channels and many more kinds of programs.

5 The number of TV sets in use also keeps growing. In 1946, there were about 6,000 televisions sets in use in the United States. In 1951, there were 12 million. As more people watched, more shows were added. By 1962, around 49 million U.S. households had televisions in the home. Today, 99 percent of homes have a television. Some even have three or more!
What do you do in your free time? If you say, “watch television,” you are not alone. About 99 percent of American households own a television. The airwaves are flooded with all kinds of programs. There are hundreds of channels to choose from.

And there’s so much to see! You can watch a tiger hunt in the jungle—something you might never see in person. You can visit the bottom of the ocean or cruise in outer space from your sofa. You can learn how to do new things, such as cook. TV is also a good way to relax. Watching a funny show can be relaxing.

But do Americans watch too much television? One study said that the average person watches four hours each day. If that person lived to be 65 years old, he or she would have watched TV for nine years!

Watching television doesn’t require effort. All you have to do is sit and watch. When children watch TV, they are not playing and running. They aren’t playing games or solving problems. Also, children who watch a lot of TV tend to eat more junk food, including chips and soda. So watching a lot of TV can be bad for your health.

Watching a little television each day isn’t harmful. It might even make you smarter. But if you are watching four hours a day, think about doing something else!
Think

1. Which choice **best** describes why the author wrote “History of Television”?
   - A to tell why David Sarnoff was important to TV
   - B to show how television has grown since 1939
   - C to describe the types of programs available on TV
   - D to prove that people watch too much television

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

   **Part A**
   What is one of the most important ideas of “Should We Watch TV?”
   - A Television shows will make you smarter.
   - B Watching too much TV can be harmful.
   - C The number of TVs in homes is increasing each year.
   - D A wide variety of programs is available on TV.

   **Part B**
   What are **two** details from “Should We Watch TV?” that support your answer to Part A?
   - A “The airwaves are flooded with all kinds of programs.”
   - B “About 99 percent of American households own a television.”
   - C “One study said that the average person watches four hours each day.”
   - D “Watching a little television each day isn’t harmful.”
   - E “Watching television doesn’t require effort.”
   - F “So watching a lot of TV can be bad for your health.”
3. Which of the following ideas is found in both passages?
   A. Watching television might make you smarter.
   B. Too many Americans watch too much television.
   C. The first television screens were only 5 inches by 12 inches.
   D. Most households in America have a television.

4. Which sentence best describes the difference between the two passages?
   A. The first passage shows the benefits of television; the second passage shows the problems with television.
   B. The first passage describes the invention of television; the second passage explains why television is so popular.
   C. The first passage explains the importance of TV; the second passage describes how TV can be used in education.
   D. The first passage describes the history of television; the second passage explores whether watching TV is good or bad.

Talk

5. In which passage would you find information about how TVs have changed? Which one would you use to learn how TV has affected us? Refer to details from each passage when talking about your answers.

Write

6. Short Response: What are two things you learned in “Should We Watch TV?” that you didn’t learn in “History of Television”? Use the space provided on page 333 to write your answer.
Write  Use the space below to write your answer to the question on page 327.

3  Short Response  Why has the use of computers increased so much over the last fifty years? Find reasons in both articles.

Don’t forget to check your writing.
Write  Use the space below to write your answer to the question on page 331.

History of TELEVISION

Should We Watch TV?

6 Short Response  What are two things you learned in “Should We Watch TV?” that you didn’t learn in “History of Television”?

HINT  Reread “Should We Watch TV?” Look again at the sentences you underlined or marked with a wavy line.

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?
Goodbye, Books?

by Jamie Joyce, Time for Kids

Independent Practice

334 Lesson 20
Comparing and Contrasting Two Texts

Genre: Magazine Article

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

- skeptical
- access

1. Cushing Academy used to have 20,000 books in its library. But over the summer, this small Massachusetts high school began to replace printed books with electronic books, or e-books. Why? “The school wanted to put its focus on 21st-century learning,” Tom Corbett, the library’s executive director, told TFK. Few students were using library books to do their school assignments. Most did their research online. Transforming the library seemed like the best way to meet students’ needs. Without a print collection to care for, Corbett says librarians can now concentrate on helping students use the online collection in new and better ways. They can also work with teachers to bring technology into the classroom.

More Books, More Reading

2. Teacher Nancy Boyle says her students still enjoy regular books. But they’re also testing out the Kindle, an electronic reader. So far, it’s been a success. “It’s great,” Boyle told TFK. “The kids are reading more.”
Sixteen-year-old Meghan Chenausky was skeptical at first. “I love the feeling of books,” she told TFK. “I really thought I was going to be missing out when I started using a Kindle. But now I absolutely love using it. It’s so convenient. You can have so many books right at your fingertips.”

**Meet an E-Reader**

Can your backpack fit 1,500 books? An e-reader can. Most e-readers are pencil-thin and weigh less than a pound. They can download an e-book in 60 seconds. Don’t understand the meaning of a word? Click on it to get the definition. Is the print too small? An e-reader can adjust the size.

E-readers aren’t cheap, but it costs the school just $5 or $10 to download an e-book on as many as six e-readers. “Now, students have access to a million titles,” Corbett says.

Still, regular books have one big advantage over e-readers: They don’t use electricity. E-readers have to be charged, like cell phones.
E-Readers: No Substitute for Books

by Linda Timm

1. It’s a cold, stormy day, and lightning has knocked out the power in your neighborhood. No problem! You’ll just grab a snack, curl up with a good book, and read for hours. You pull out your e-reader, press the button . . . and the screen remains dark. The battery is dead. And since there’s no electricity, there’s no way to recharge the device. Guess you’re out of luck.

2. This is just one example of how impractical e-readers are. Sure, an e-reader can store thousands of books. But what good is that if you can’t use the reader whenever you need to? Running out of power is only one of the issues. E-readers can also break. Drop one, and the screen may crack or the reader may just stop functioning. You have to purchase a new book AND a new device. If you drop a printed book, though, you can just pick it up and keep reading.

3. E-readers also make reading itself more difficult. Sentences may break across lines in awkward ways. Or, one sentence may get stretched across a page, leaving huge spaces between words. It’s also hard to find parts you want to reread. Even with search tools, it’s difficult to “flip” back and forth as you would with a printed book. Note-taking can also take longer and be more frustrating.

4. Still, some schools are beginning to buy e-readers for students in place of books. School leaders feel they can get more books for less money that way. But e-readers are expensive, so how much money will schools have to spend to replace readers that students lose or break? Also, one research study showed that some people don’t learn as well from e-readers. They don’t understand as much, and they don’t remember what they read. So are e-readers really good for students?

5. Sometimes the simplest choice is the best one. Printed books are inexpensive, recyclable, and portable. They are easy to distribute, easy to care for, and easy to replace. And the best part? Printed books will NEVER run out of power!
Think  Use what you learned from reading the passages to respond to these questions.

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

Part A
Which sentence best describes how the main ideas of these two passages are different?

A  “Goodbye, Books?” is about the new library at Cushing Academy, while “E-Readers: No Substitute for Books” is about a library that uses only printed books.

B  “Goodbye, Books?” tells how e-readers are good for students and schools, while “E-Readers: No Substitute for Books” tells why e-readers should not replace printed books.

C  “Goodbye, Books?” explains why printed books are no longer useful, while “E-Readers: No Substitute for Books” explains why printed books are still good.

D  “Goodbye, Books?” is about the low cost of e-readers, while “E-Readers: No Substitute for Books” is about the low cost of printed books.

Part B
Choose one detail from each passage that supports your answer to Part A.

A  “Cushing Academy used to have 20,000 books in its library.” (“Goodbye, Books?”)

B  “So far, it’s been a success. ‘It’s great,’ Boyle told TFK. ‘The kids are reading more.’” (“Goodbye, Books?”)

C  “Still, regular books have one big advantage over e-readers: They don’t use electricity.” (“Goodbye, Books?”)

D  “Sure, an e-reader can store thousands of books.” (“E-Readers: No Substitute for Books”)

E  “Still, some schools are beginning to buy e-readers for students in place of books.” (“E-Readers: No Substitute for Books”)

F  “Also, one research study showed that some people don’t learn as well from e-readers.” (“E-Readers: No Substitute for Books”)

©Curriculum Associates, LLC  Copying is not permitted.
2. Which two ideas can be found in both passages?

A. E-books are inexpensive to use.
B. Printed books are inexpensive and recyclable.
C. Few students use library books to do assignments.
D. E-readers can store more than a thousand books.
E. E-readers can make the reading process more difficult.
F. Schools are buying e-readers for students to use.

3. Reread these sentences from paragraph 1 of “Goodbye, Books?”

Few students were using library books to do their school assignments. Most did their research online. Transforming the library seemed like the best way to meet students’ needs.

Given the context, what does transforming mean?

A. changing
B. closing
C. rebuilding
D. emptying

4. Plan Your Response

Make a two-column chart. Put facts that support e-readers in one column. Put facts that show problems with e-readers in the second column. Study your chart.

5. Write an Extended Response

Explain whether or not schools should use e-readers instead of printed books. Use details from both passages to support your ideas. Your chart can help you choose your evidence.
Learning Target

Now that you’ve compared and contrasted passages, explain how reading two or more texts on the same topic can help you understand the topic better. Use examples from some of the passages you read to make your point clear.
Prerequisite: Interpret Scaled Graphs

Study the example problem showing how to interpret a pictograph. Then solve problems 1–8.

Example

The pictograph shows the number of students in each grade who helped with the school fair. How many helpers were from grade 2? Tell how you know.

School Fair Helpers

<table>
<thead>
<tr>
<th>Grade</th>
<th>Number of 😊</th>
<th>Each 😊 stands for</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>😊 😊</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>😊 😊 😊 😊 😊</td>
<td>3 😊</td>
<td>15</td>
</tr>
<tr>
<td>3</td>
<td>😊 😊 😊 😊 😊</td>
<td>3 😊</td>
<td>15</td>
</tr>
<tr>
<td>4</td>
<td>😊 😊 😊 😊 😊</td>
<td>3 😊</td>
<td>15</td>
</tr>
<tr>
<td>5</td>
<td>😊 😊 😊 😊 😊</td>
<td>3 😊</td>
<td>15</td>
</tr>
</tbody>
</table>

Each 😊 stands for 5 students.

Use the pictograph above to solve problems 1 and 2.

1. Find the number of students from each grade who helped. Fill in the table.

2. How many students helped with the school fair altogether? Show your work.
Solve.

3 Below is a key for a pictograph. How many circles would be used to show 24 people? Explain.

Key: Each \( \bigcirc \) stands for 4 people.

4 One row on a pictograph has 7 squares. Each square stands for 3 books. How many books does the row stand for? Explain.

5 Look at problem 4. How would you show 30 books on that pictograph? Explain.

6 Dana draws 4 triangles to stand for 32 trees. Fill in the blank to show the key she makes.

Each \( \bigtriangleup \) stands for _____ trees.

7 Look at problem 6. How many triangles would Dana use to show 48 trees?

8 Omar started this pictograph to show 60 baseballs. Complete the key, then draw circles to show 40 footballs.

<table>
<thead>
<tr>
<th>Number of Balls</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseballs</strong></td>
</tr>
<tr>
<td><strong>Footballs</strong></td>
</tr>
</tbody>
</table>

Each \( \bullet \) stands for _____ balls.
Draw a Scaled Pictograph

Study the example problem showing how to make a scaled pictograph. Then solve problems 1–8.

Example

Jess asked some students in her school which colors they like best. She recorded the data in a table first. How can she make a pictograph to show the data?

<table>
<thead>
<tr>
<th>Color</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td>10</td>
</tr>
<tr>
<td>Green</td>
<td>5</td>
</tr>
<tr>
<td>Purple</td>
<td>20</td>
</tr>
<tr>
<td>Red</td>
<td>30</td>
</tr>
<tr>
<td>Yellow</td>
<td>15</td>
</tr>
</tbody>
</table>

Each number has 5 as a factor. Use a scale of 5. Each 🎈 stands for 5 students.

Blue 10 = 5 \times 2
Green 5 = 5 \times 1
Purple 20 = 5 \times 4
Red 30 = 5 \times 6
Yellow 15 = 5 \times 3

1 Jess did not write a title for her graph. What is a good title?

______________________________________________________________________

2 Jess forgot that 15 students chose pink. She needs to add a row to the pictograph. Use words and pictures to show what the row should look like.

______________________________________________________________________

3 Could Jess use a scale of 1 for her pictograph? A scale of 4? Explain.

______________________________________________________________________

______________________________________________________________________

______________________________________________________________________

______________________________________________________________________

Vocabulary

scale the numbers that show the units used on a graph.
data pieces of information.
Use the table and pictograph to solve problems 4–8.

Pablo asked some students which sport they like best. He recorded the data in this table. Then he started to make a pictograph.

<table>
<thead>
<tr>
<th>Sport</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseball</td>
<td>14</td>
</tr>
<tr>
<td>Basketball</td>
<td>10</td>
</tr>
<tr>
<td>Biking</td>
<td>16</td>
</tr>
<tr>
<td>Skating</td>
<td>12</td>
</tr>
<tr>
<td>Soccer</td>
<td>18</td>
</tr>
</tbody>
</table>

What scale is Pablo using for his graph? Tell how you know. Then fill in the key.

<table>
<thead>
<tr>
<th>Sport</th>
<th>Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseball</td>
<td>😊😊😊😊😊😊</td>
</tr>
</tbody>
</table>

How many symbols do you need to show the number of students who like soccer? Why?

Which sport will have 5 symbols on the pictograph? Explain.

What is a good title for Pablo’s graph? Write it above the graph.

Complete the pictograph.

---

**Vocabulary**

**pictograph** a graph using pictures or symbols to show data.
Draw a Scaled Bar Graph

Study the example problem showing how to make a scaled bar graph. Then solve problems 1–7.

Example

Zara painted faces at the fair. She kept track of the designs people chose. She recorded the data in the table. How can Zara make a bar graph?

<table>
<thead>
<tr>
<th>Type of Design</th>
<th>Number of Designs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hearts</td>
<td>40</td>
</tr>
<tr>
<td>Monster</td>
<td>80</td>
</tr>
<tr>
<td>Lion</td>
<td>30</td>
</tr>
<tr>
<td>Ghost</td>
<td>50</td>
</tr>
<tr>
<td>Flower</td>
<td>10</td>
</tr>
</tbody>
</table>

Zara used a scale of 10. Count by 10s: 10, 20, 30, 40, 50, 60, 70, 80. You use all the numbers in the table when you count by 10s.

1. What is a good title for Zara’s graph? Write it above the graph.

2. Could you use a scale of 2 or 5 to make the graph? Explain. ____________________________________________________________________

3. Why do you think Zara chose 10 as the scale instead of 2 or 5? ____________________________________________________________________

Vocabulary

- **bar graph** a graph using bars to show data.
- **data** pieces of information.
Use the table to solve problems 4–7.

The table shows the number of students who signed up for different games at the school fair.

<table>
<thead>
<tr>
<th>Games at School Fair</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Game</td>
<td>Number of Students</td>
</tr>
<tr>
<td>Balloon Toss</td>
<td>24</td>
</tr>
<tr>
<td>Relay Race</td>
<td>20</td>
</tr>
<tr>
<td>Sack Race</td>
<td>28</td>
</tr>
<tr>
<td>Softball Throw</td>
<td>12</td>
</tr>
</tbody>
</table>

4 Count by 3s. Write the numbers you say.

____, _____, _____, _____, _____, _____,

____, _____, _____

5 Count by 4s. Write the numbers you say.

____, _____, _____, _____, _____, _____,

____, _____, _____

6 You need to make a graph using the data in the table. Would you use a scale of 3 or 4? Explain.

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

7 Make a bar graph using the data in the table. Be sure to write a title, draw bars, and label all parts of the graph.

Balloon Toss
Relay Race
Sack Race
Softball Throw
Erol asked students to name their favorite stickers. He recorded their answers in the table. Use the table to solve problems 1 and 2.

### Problem 1
Erol makes a pictograph with a scale of 3. How many symbols does he use to show the number of students who chose butterflies? Circle the letter of the correct answer.

<table>
<thead>
<tr>
<th>Type of Sticker</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sports</td>
<td>15</td>
</tr>
<tr>
<td>Butterflies</td>
<td>6</td>
</tr>
<tr>
<td>Hearts</td>
<td>18</td>
</tr>
<tr>
<td>Stars</td>
<td>9</td>
</tr>
<tr>
<td>Cars</td>
<td>12</td>
</tr>
</tbody>
</table>

Carmen chose D as the correct answer. How did she get that answer?

I would figure out and record the number of symbols needed for each kind of sticker.

### Problem 2
Erol uses a scale of 3 to make a pictograph of the sticker data. Tell whether each sentence is True or False.

- **a.** The graph has 4 symbols in the row for car stickers.  
- **b.** The graph has 3 symbols in the row for star stickers.  
- **c.** The row for heart stickers has 3 more symbols than the row for butterfly stickers.
Solve.

3 Ava asked students at her school to name their favorite rides at the amusement park. She recorded the results in the table. How can Ava decide what scale to use to make a graph?

Favorite Rides

<table>
<thead>
<tr>
<th>Ride</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roller Coaster</td>
<td>15</td>
</tr>
<tr>
<td>Ferris Wheel</td>
<td>10</td>
</tr>
<tr>
<td>Flying Saucer</td>
<td>20</td>
</tr>
<tr>
<td>Haunted Train</td>
<td>30</td>
</tr>
<tr>
<td>River Falls</td>
<td>5</td>
</tr>
</tbody>
</table>

What do the numbers in the table have in common?

4 Label and draw a bar graph to show the data from the table above.

Don’t forget to write a title and include all labels.
DYNAMICS AND TEMPO

DYNAMICS

Dynamics are how loud or soft the music is or should be played.

Place the following dynamic terms or symbols in order from soft to loud on the line below.

Forte \( f \)    Mezzo Piano \( mp \)    Pianissimo \( pp \)
Piano \( p \)    Fortissimo \( ff \)    Mezzo Forte \( mf \)

TEMPO

Tempo is the speed at which a passage of music is or should be played.

Word Box

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Largo</td>
<td>Slowly and broadly</td>
</tr>
<tr>
<td>Adagio</td>
<td>Slow and stately</td>
</tr>
<tr>
<td>Andante</td>
<td>At a walking pace</td>
</tr>
<tr>
<td>Allegro</td>
<td>Fast, quickly and bright</td>
</tr>
<tr>
<td>Vivace</td>
<td>Lively and fast</td>
</tr>
<tr>
<td>Presto</td>
<td>Very fast</td>
</tr>
</tbody>
</table>

Use the musical terms from the Word Box to best describe the tempo, or speed, of each animal below on the line provided. The first example has been completed for you.

1. ___________
2. ___________
3. ___________
4. ___________
5. ___________
6. ___________

Ex: Adagio
Dynamics

Name: _______________________________________

Teacher: _____________________________________

Dynamics tell us how loud or how soft the music is. Look at the terms below. The Italian terms, the abbreviations, and the definitions are listed.

<table>
<thead>
<tr>
<th>Pianissimo</th>
<th>Piano</th>
<th>Mezzo Piano</th>
<th>Mezzo Forte</th>
<th>Forte</th>
<th>Fortissimo</th>
</tr>
</thead>
<tbody>
<tr>
<td>pp</td>
<td>p</td>
<td>mp</td>
<td>mf</td>
<td>f</td>
<td>ff</td>
</tr>
</tbody>
</table>

Very Soft | Soft | Moderately Soft | Moderately Loud | Loud | Very Loud |

Sometimes symbols below the staff also show if the music should get louder or softer.

Crescendo- Music gradually gets louder

Decrescendo- Music gradually gets softer (also called Diminuendo)

Circle the answer that matches the dynamics term on the left.

1. Crescendo  pp very loud gradually gets louder

2. Pianissimo  mf very soft soft

3. Forte  ff loud moderately loud

4. Mezzo Piano  mp medium gradually gets softer

5. Decrescendo  p > very loud

6. Fortissimo  f < loud
Use Data Vocabulary

What You Need

• Recording Sheet

What You Do

1. Read the problem on the Recording Sheet.
   Think about how to solve it.

2. Read the paragraphs that tell how to solve the problem.

3. Use words and numbers from the word bank and number bank to fill in the blanks.

4. Take turns. After you fill in a blank, your partner fills in the next one.

5. When all the blanks are filled in, read the paragraphs aloud. Do they make sense?

6. Fix any mistakes if you need to.

Check Understanding

Use data vocabulary to tell something else about the graph on the Recording Sheet.

You might change your mind after you fill in some blanks. It’s okay to erase!

Go Further!

Write two sentences about the data on the Recording Sheet. Use at least three words from the word bank in the sentences.
How many more leaves did Miki collect than Ana?

**Number of Leaves Collected**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ana</td>
<td>🍃🍃🍃🍃</td>
</tr>
<tr>
<td>Obi</td>
<td>🍃🍃🍃</td>
</tr>
<tr>
<td>Miki</td>
<td>🍃🍃🍃🍃🍃</td>
</tr>
<tr>
<td>Sam</td>
<td>🍃🍃🍃</td>
</tr>
</tbody>
</table>

Each 🍃 stands for 2 leaves.

This graph shows _____________.
It is called a _____________.

The _____________ is **Number of Leaves Collected**. The _____________ shows that each leaf _____________ represents 2 leaves.

Find the row labeled **Miki**. There are ______ leaves. You can _____________ by 2 to find how many leaves she collected.

She collected ______ leaves. Ana’s row has ______ symbols, so she collected ______ leaves.

Miki collected 4 more leaves than Ana.
Ready® Center Activity 3.36 ★★

Make a Bar Graph

What You Need
- Recording Sheet

What You Do

1. Take turns. Pick a letter and read the sentence next to that number in the table.

2. Fill in that data on the bar graph on the Recording Sheet.

3. Your partner checks your work.

4. Repeat until all the letters are used.

5. Then take turns answering the questions and checking each other’s work.

A Complete the labels.
B Complete the scale.
C Mike read 50 pages on Friday.
D Mike read 40 pages on Wednesday.
E Mike read 70 pages on Tuesday.
F Mike read 60 pages on Thursday.

Check Understanding
Look at the bar graph on the Recording Sheet. Explain how you would change the graph if Mike read 20 fewer pages on Monday than on Thursday.

Go Further!
Change the scale on the bar graph on the Recording Sheet. Then make a different graph with the new scale. Write two questions that can be answered using the new bar graph. Trade papers with your partner to answer each other’s questions.
How many days did Mike read? ______

What two days did Mike read more, Monday and Tuesday or Thursday and Friday? ______

How many pages did Mike read on Wednesday and Friday combined? ______

How many more pages did Mike read on Thursday than Monday? ______

On what three days did Mike read a total of 150 pages? ______

How many fewer pages did Mike read on Monday and Wednesday than on Tuesday and Thursday? ______
Grades 3-5: Dance Cards

<table>
<thead>
<tr>
<th>Robot Dance</th>
<th>Basketball Dance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Football End Zone Dance</td>
<td>Superhero Dance</td>
</tr>
<tr>
<td>Grasshopper Dance</td>
<td>Soccer Dance</td>
</tr>
<tr>
<td>Tiptoe Dance</td>
<td>Super Cardio Dance</td>
</tr>
</tbody>
</table>