Name _____

Additional Practice 7-1
Read Picture Graphs and Bar Graphs

Another Look!

You can use a picture graph or a bar graph to represent and interpret data.

Picture graphs use pictures or parts of pictures to represent data.

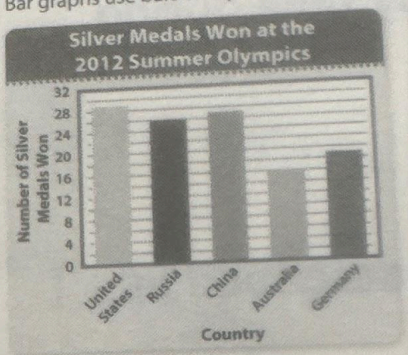
Gold Medals Won at 2010 Vancouver Winter Olympics

Sweden	5
France	2
Switzerland	6
Russia	3

Each = 1 gold medal.

Picture graphs have keys to explain the scale being used and what each picture represents.

Bar graphs use bars to represent data.



Bar graphs have scales that show the units used.

Each line in this bar graph represents 2 medals.

In 1–4, use the picture graph at the right.

Number of Houses Built in 1 Year

City A	4 and 1
City B	4
City C	3
City D	7
City E	5
City F	6

Each = 10 houses. Each = 5 houses.

1. How many houses were built in City B and City F combined? **100 houses**
2. How many more houses were built in City D than in City E in 1 year? **20 more houses**
3. What does the half of a house represent in the data for City A? **5 houses**
4. How many more houses were built in City A than in City C? **15 houses**

In **5–8**, use the picture graph at the right.

5. Compare the number of books Tamika read to the number of books Anders and Miguel combined read. Use the symbol >, <, or =.
Sample answer: 28 > 18

6. Reasoning Which students read at least double the number of books that Anders read?
Nancy and Tamika

7. Which students read fewer than 12 books?
Anders and Miguel

Books Read

Nancy	📖📖📖📖📖▯
Tamika	📖📖📖📖📖📖📖
Jamal	📖📖📖📖
Phil	📖📖📖📖▯
Anders	📖📖▯
Miguel	📖📖

Each 📖 = 4 books. Each ▯ = 2 books.

8. Higher Order Thinking How many more books did Tamika and Jamal read combined than Nancy and Anders combined?
12 books

Assessment Practice

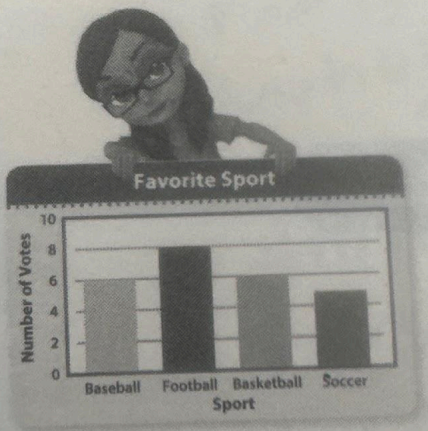
In **9** and **10**, use the bar graph at the right.

9. How many fewer votes did soccer receive than baseball?

- (A) 1 vote
- (B) 2 votes
- (C) 3 votes
- (D) 4 votes

10. How many more votes did football and baseball receive than soccer and basketball?

- (A) 1 vote
- (B) 2 votes
- (C) 3 votes
- (D) 4 votes



Name _____ Practice Video Tools Games

Additional Practice 7-2
Make Picture Graphs

Another Look!

The frequency table shows items that were ordered for lunch. Follow the steps below to learn how to make a scaled picture graph.

Data in a table can be shown in a picture graph.

DATA

Items Ordered		
Food	Tally	Number
Pasta	𝍸 I	6
Salad	IIII	4
Casserole	𝍸 𝍸	10
Fish	𝍸 IIII	9

Items Ordered

Pasta	
Salad	
Casserole	
Fish	

Each = 2 meals.
Each = 1 meal.

Step 1
Write a title that explains what the picture graph shows.

Step 2
Choose a symbol and a scale.

Step 3
Draw in the graph the number of symbols that are needed for each item.

1. Complete the frequency table to show how Ms. Hashimoto's class voted for their favorite type of movie.

DATA

Favorite Type of Movie		
Type	Tally	Number
Action	𝍸 III	8
Comedy	III	3
Drama	𝍸 I	6
Animated	𝍸 𝍸	10

What was the difference in votes between the most popular movie type and the least popular movie type?
7 votes

2. Use the table in Exercise 1 to complete the picture graph. Sample graph shown.

Favorite Type of Movie

Action	
Comedy	
Drama	
Animated	

Each = 2 votes.
Each = 1 vote.

How did you choose the number that each symbol represents?
Sample answer: Three of the totals are even numbers, so 2 votes for each whole symbol makes sense.

3. **enVision®** STEM There are 61 days in March and April. Mrs. Dorsey recorded 18 sunny days in March and 12 sunny days in April. How many days were not sunny?
31 days

4. **Vocabulary** A **scaled bar graph** can also be used to represent and compare the same data set using bars instead of pictures or symbols.

In **5–7**, use the picture graph at the right.

5. Pamela made this picture graph showing 14 students' favorite drinks. She drew 3 glasses to represent the 6 students who chose chocolate milk. Is her picture graph correct? Explain.
Yes; Sample answer: Each glass represents 2 students and $3 \times 2 = 6$.

Favorite Drink	
Chocolate milk	▯▯▯
Orange juice	▯▯▯▯

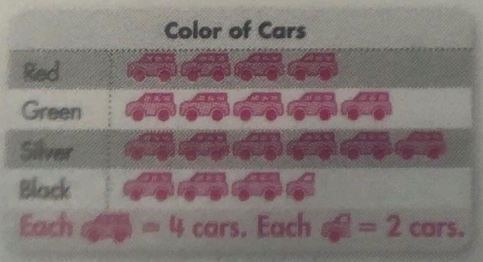
Each ▯ = 2 students.

6. **Higher Order Thinking** How would Pamela's picture graph change if 12 students chose grape juice as their favorite drink?
Sample answer: There would be another row for grape juice with 6 glass symbols in the row.

7. **Make Sense and Persevere** How could the scale change if her picture graph showed the favorite drinks of 70 students?
Sample answer: The key could change and each glass could represent 10 students.

Assessment Practice

8. April counted cars painted 4 different colors. She made a frequency table to record the total number of cars for each color. Complete the picture graph to represent her data. Write the scale you used in the key.
Sample picture graph shown.



DATA

Color of Cars

Color	Tally	Number
Red	𝍸 𝍸 𝍸 |	16
Green	𝍸 𝍸 𝍸 𝍸	20
Silver	𝍸 𝍸 𝍸 𝍸 ||||	24
Black	𝍸 𝍸 ||||	14

Name _____

Practice Video Tools Games

Additional Practice 7-3
Make Bar Graphs

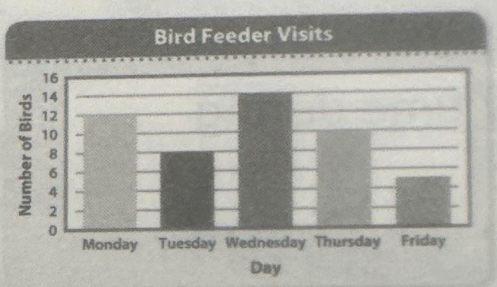
Another Look!

The table below shows the number of birds that visited a bird feeder.

DATA

Bird Feeder Visits

Day	Number of Birds
Monday	12
Tuesday	8
Wednesday	14
Thursday	10
Friday	5



Follow the steps below to learn how to make the bar graph at the right.

Step 1
Write each of the days and label the bottom of the graph "Day."

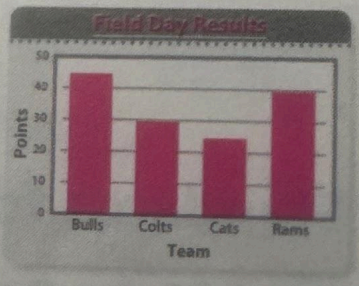
Step 2
Choose a scale. Number the scale. Label the scale "Number of Birds."

Step 3
Draw a bar for each day. Check that the bar lengths match the number in the table and the widths are the same.

Step 4
Give the graph a title.

For 1–3, use the table at the right.

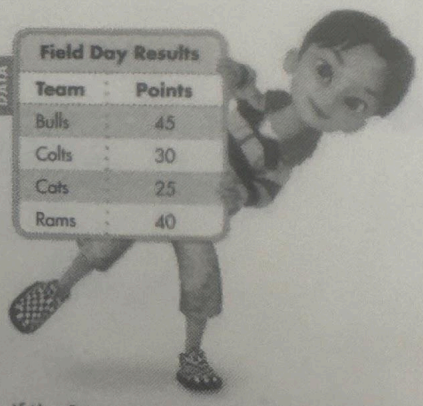
1. Complete the bar graph to show the data. Remember to add a title.



DATA

Field Day Results

Team	Points
Bulls	45
Colts	30
Cats	25
Rams	40



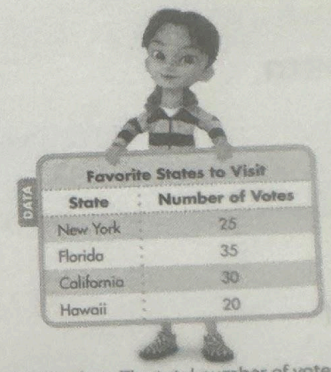
2. Explain how to use your bar graph to find the team with the most points.

Find the team that has the bar with the greatest value.

3. If the Rams score 5 more points, which team's score will they match?

The Bulls

In 4–6, use the table at the right.



Favorite States to Visit	
State	Number of Votes
New York	25
Florida	35
California	30
Hawaii	20

4. Make a bar graph to show the data.

Sample bar graph shown.

5. **Construct Arguments** Explain how to use your bar graph to determine the state the class should visit. What is the state?

Sample answer: Find the state with the greatest number of votes; Florida

6. **Algebra** The total number of votes for two states can be represented by the equation $35 + ? = 65$. Which state's number of votes makes this statement true?

California's

7. **enVision®** STEM Dawn made a paper airplane and measured the distance it flew in feet for 30 tosses. The longest distance she measured was 45 feet. The shortest distance was 28 feet. How many more feet is the longest distance than the shortest distance?

17 feet; $45 - 28 = 17$

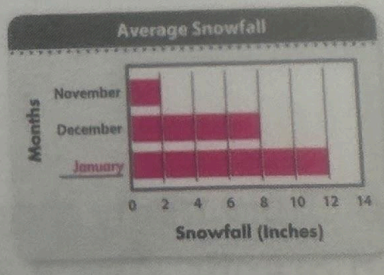
8. **Higher Order Thinking** Kim makes a bar graph to record votes for the choice of a class pet. Each grid line represents 4 votes. Fish got 8 votes. The bar for hamster is 3 grid lines higher than the bar for fish. How many votes did hamster get?

20 votes

Assessment Practice

9. Mr. Walker collected data on the average monthly snowfall in his town. Use the data to complete the bar graph.

Average Snowfall	
Month	Snowfall (Inches)
November	2
December	8
January	12



Name _____

Additional Practice 7-4
Solve Word Problems Using Information in Graphs

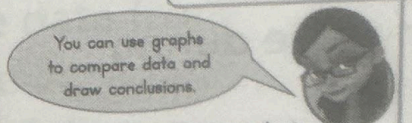
Another Look!

Students were asked to name their favorite type of dog. The picture graph shows the results of the survey.

Students' Favorite Dogs

Dog	Number Counted
Beagle	
Collie	
Shepherd	
Poodle	
Dalmatian	

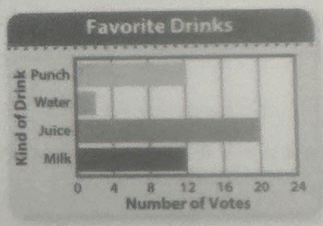
Each = 2 votes. Each = 1 vote.



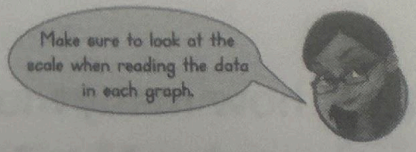
Some conclusions you can draw from the picture graph include:

- Shepherd was chosen by exactly 5 students.
- 2 fewer students chose dalmatian than chose beagle.
- 4 more students chose collie than chose beagle.

In 1–4, use the bar graph at the right.



1. How many more votes did punch get than water?
   10 more votes
2. How many fewer votes did milk get than juice and water combined?
   10 fewer votes
3. How many more votes did juice get than punch and water combined?
   6 more votes
4. What is the difference between the number of votes for juice and the number of votes for water and milk combined?
   6 votes



In **5** and **6**, use the picture graph at the right.

5. Generalize Which type of shoe was sold least at Just Shoes? How do you know?

Sandals; Sample answer: The row is the shortest.

6. How many more pairs of boots than slippers were sold at Just Shoes? How did you find your answer?

6 pairs; Sample answer: The boots show 1 more full shoe and part of a shoe; 4 + 2 = 6.

Shoes Sold at Just Shoes

Sneakers	4 shoes
Sandals	3 shoes
Slippers	3 shoes
Boots	4 shoes and part of a shoe

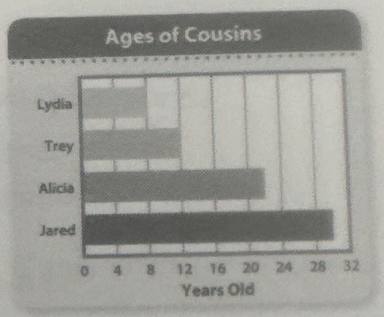
Each shoe = 4 pairs. Each shoe = 2 pairs.

In **7** and **8**, use the bar graph at the right.

7. Higher Order Thinking Jared, Alicia, Lydia, and Trey are cousins. Jared is 8 years older than Alicia. Lydia is 4 years younger than Trey. Trey is 18 years younger than Jared. Alicia is 22. Complete the graph to show their ages.

8. How many years older is Jared than Lydia?

22 years

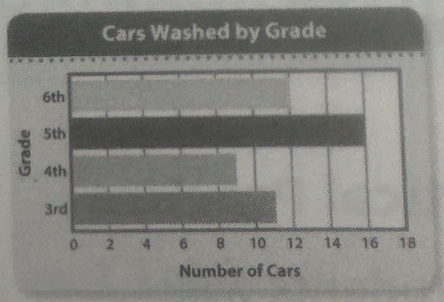


Assessment Practice

9. Students at King Elementary School washed cars to raise money for a school trip.

How many more cars did the 4th graders and the 6th graders combined wash than the 5th graders?

- (A) 5 cars
- (B) 4 cars
- (C) 3 cars
- (D) 2 cars

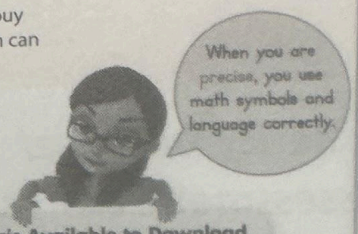


Name _____ Practice Video Tools Games

Additional Practice 7-5
Precision

Another Look!

Wynton made a picture graph to record the music he would like to download. He has $35 to spend on music. He wants to buy at least 1 of each type of item. He wants to buy more singles than albums. What is one way Wynton can spend $35 on music?



Tell how you can be precise when solving this problem.

- I can correctly use the information given.
- I can make sure my calculations are accurate.

Solve. Use math words and symbols to explain your thinking.

5 singles × $2 = $10 35 − 10 = $25 left

3 albums × $6 = $18 25 − 18 = $7 left

1 collection × $7 = $7 7 − 7 = $0 left

Wynton has spent exactly $35.
He has bought more singles than albums.

Music Available to Download

Singles ($2 each)	♩ ♩ ♩ ♩
Albums ($6 each)	♩ ♩ ♩
Collections ($7 each)	♩ ♩

Each ♩ = 3 items.

Be Precise

Sample answers given.

Casie made a picture graph to record the points that third-grade students scored on a test. Mrs. Wilson's group scored 40 points in all. There are 11 students in Mrs. Wilson's group. What is one way Mrs. Wilson's group may have scored 40 points?

1. Tell how you can be precise when solving this problem.
   I can use the information given in the problem and in the graph. I can check that I calculate correctly.

2. Solve. Use math words and symbols to explain your thinking.
   4 students × 2 = 8 points; 40 − 8 = 32
   5 students × 4 = 20 points; 32 − 20 = 12
   2 students × 6 = 12 points; 12 − 12 = 0
   The total is exactly 40 points.

Test Scores

Points	Number of Students
2 points	☺ ☺ ☺ ☺
4 points	☺ ☺ ☺
6 points	☺ ☺ ☺

Each ☺ = 3 students.

Performance Task

Pizza Party!
Ms. Chavez is planning a class party. There are 28 students at the party. She wants to get at least 1 of each type of pizza and have enough pizza so each student gets 2 slices. Delivery takes 20 minutes. Ms. Chavez has $55 to spend.

Ready To Go Pizza Delivery

Pizza Type	Number of Pizzas Available
Cheese ($6 each)	3
Pepperoni ($8 each)	4
Supreme ($10 each)	2

Each = 8 slices.

3. **Reasoning** How many slices of cheese pizza are available? How do you know?

24 slices; There are 3 symbols for cheese and each symbol is 8 slices; $3 \times 8 = 24$.

4. **Make Sense and Persevere** How many slices of pizza does Ms. Chavez need? Explain.

Sample answers given.

56 slices; Sample answer: She needs to order enough so each of the 28 students gets 2 slices each; $28 + 28 = 56$.

5. **Model with Math** Show how to find the number of pizzas Ms. Chavez should order.

7 pizzas; Sample answer: $56 \div 8 = 7$

6. **Be Precise** Show one way Ms. Chavez can order enough pizzas. Use math words and symbols to explain your thinking.

Ms. Chavez can buy three cheese pizzas for $6 each, $3 \times \$6 = \$18$; two pepperoni pizzas for $8 each, $2 \times \$8 = \$16$; and two supreme pizzas for $10 each, $2 \times \$10 = \$20$. The total is $\$18 + \$16 + \$20 = \$54$. Ms. Chavez has enough to buy these types because $\$54 < \$55$.

7. **Make Sense and Persevere** Which information did you not need to help you solve the problem?

I did not need to know the time it takes for delivery.