School-Home Letter

Vocabulary

bar graph A graph that uses bars to show data

data Information that is collected about people or things

frequency table A frequency table uses numbers to record data.

line plot A line plot uses marks to record each piece of data above a number line.

picture graph A picture graph uses small pictures or symbols to show information.

Dear Family,

During the next few weeks, our math class will learn about interpreting and representing data.

You can expect to see homework that provides practice with tally tables, frequency tables, picture graphs, bar graphs, and line plots.

Here is a sample of how your child will be taught to solve problems using a bar graph.
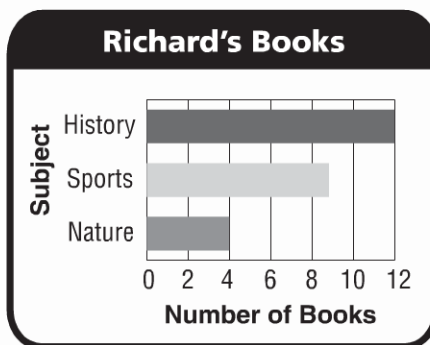
🔒 MODEL Use a Bar Graph to Solve a Problem

Use the bar graph. How many more sports books than nature books does Richard have?

STEP 1

Identify the bars for Sports and Nature.

STEP 2

Count along the scale to find the difference between the bars. The difference is 5 books.

Richard's Books

Subject: History, Sports, Nature
Number of Books: 0 2 4 6 8 10 12

Tips

Reading Scales

To make reading the length or height of a bar easier, use a straightedge or ruler to line up one end of the bar with the number on the scale.

So, Richard has 5 more sports books than nature books.

Activity

Look for bar graphs in magazines and newspapers or help your child create his or her own bar graphs. Then ask questions such as "how many more" and "how many fewer" and help your child find the answers.

Carta
para la casa

Estimada familia,

Durante la próximas semanas, en la clase de matemáticas aprenderemos acerca de interpretar y representar problemas usando una gráfica de barras datos.

Llevaré a la casa tareas que sirven para poner en práctica las tablas de frecuencia, las gráficas de dibujos, las gráficas de barras y los diagramas de puntos.

Este es un ejemplo de la manera como aprenderemos a resolver problemas usando una gráfica de barras .

Vocabulario

gráfica de barras Una gráfica que muestra los datos por medio de barras

datos La información que se recolecta sobre las personas o cosas

tabla de frecuencia Una tabla de frecuencia registra los datos por medio de números.

diagrama de puntos Un diagrama de puntos usa marcas para anotar cada pieza de datos en una recta numérica.

gráfica de dibujos Una gráfica de dibujos muestra la información por medio de dibujos pequeños o símbolos.

🔑 MODELO Usar una gráfica de barras para resolver un problema

Usa la gráfica de barras. ¿Cuántos libros más de deportes que de la naturaleza tiene Richard?

PASO 1

Identifica las barras para Deportes y Naturaleza.

PASO 2

Cuenta a lo largo de la escala para hallar la diferencia entre las barras. La diferencia es 5 libros.

Los libros de Richard

Pistas

Escalas

Para leer más fácil la longitud o altura de una barra, usa una orilla recta o una regla para alinear un extremo de la barra con el número de la escala.

Entonces, Richard tiene 5 libros más de deportes que de la naturaleza.

Actividad

Busque y recorte gráficas de barras de revistas o periódicos o ayude a su hijo a crear sus propias gráficas de barras. Después haga preguntas como "cuántos más" y "cuántos menos". Ayúdelo a hallar las respuestas.

Name _____

Problem Solving • Organize Data

Use the Favorite School Subject tables for 1–4.

1. The students in two third-grade classes recorded their favorite school subject. The data are in the tally table. How many fewer students chose science than chose social studies as their favorite school subject?

   Think: Use the data in the tally table to record the data in the frequency table. Then solve the problem.

   social studies: __12__ students

   science: __5__ students

   $12 - 5 =$ __7__

   So, __7__ fewer students chose science.

2. What subject did the least number of students choose?

   __science__

3. How many more students chose math than language arts as their favorite subject?

   __4__ more students

4. Suppose 3 students changed their vote from math to science. Describe how the frequency table would change.

   There would be an equal number of students who chose math and who chose science.

   _____

Favorite School Subject	
Subject	**Tally**
Math	IIII IIII I
Science	IIII
Language Arts	IIII II
Reading	IIII IIII
Social Studies	IIII IIII II

Favorite School Subject	
Subject	**Number**
Math	**11**
Science	5
Language Arts	**7**
Reading	**9**
Social Studies	12

Lesson Check (CC.3.MD.3)

The tally table shows the cards in Kyle's sports card collection.

1. How many hockey and football cards does Kyle have combined?

   Ⓐ 5
   Ⓑ 8
   Ⓒ 12
   ⬤ 13

Kyle's Sports Cards	
Sport	**Tally**
Baseball	卌 IIII
Hockey	卌
Basketball	III
Football	卌 III

Spiral Review (CC.3.OA.8, CC.3.NBT.1, CC.3.NBT.2)

2. There are 472 people in the concert hall. What is 472 rounded to the nearest hundred? (Lesson 1.2)

   Ⓐ 400
   Ⓑ 470
   ⬤ 500
   Ⓓ 600

3. Max and Anna played a video game as a team. Max scored 463 points and Anna scored 329 points. How many points did they score in all? (Lesson 1.12)

   Ⓐ 892
   ⬤ 792
   Ⓒ 782
   Ⓓ 134

4. Judy has 573 baseball cards in her collection. Todd has 489 baseball cards in his collection. How many fewer cards does Todd have than Judy? (Lesson 1.10)

   ⬤ 84
   Ⓑ 94
   Ⓒ 116
   Ⓓ 184

5. Ms. Westin drove 542 miles last week and 378 miles this week on business. How many miles in all did she drive on business during the two weeks? (Lesson 1.7)

   Ⓐ 810 miles
   Ⓑ 820 miles
   Ⓒ 910 miles
   ⬤ 920 miles

Use Picture Graphs

Use the Math Test Scores picture graph for 1–7.

Mrs. Perez made a picture graph of her students' scores on a math test.

Math Test Scores	
100	★★★★★
95	★★★
90	★★★⬎
85	★

Key: Each ★ = 4 students.

1. How many students scored 100? How can you find the answer?

To find the number of students who scored 100, count each star as 4 students. So, 20 students scored 100.
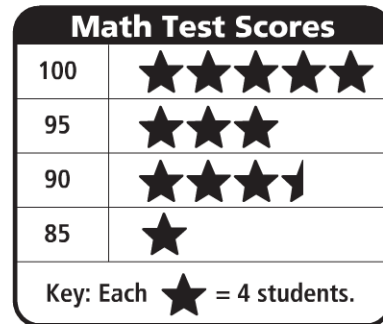
2. What does ⬎ stand for?   **It represents 2 students.**

3. How many students in all scored 100 or 95?   **32 students**

4. How many more students scored 90 than 85?   **10 more students**

5. How many students in all took the test?   **50 students**

Problem Solving REAL WORLD

6. Suppose the students who scored 85 and 90 on the math test take the test again and score 95. How many stars would you have to add to the picture graph next to 95?
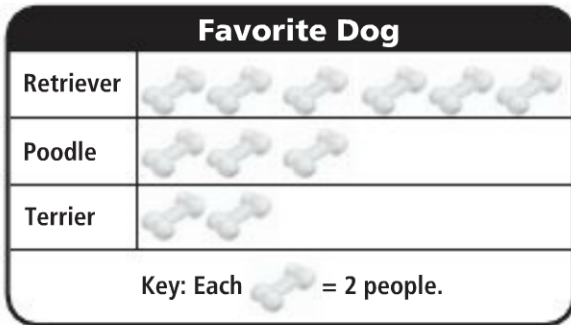
4 stars and half of a star

7. If 2 more students took the math test and both made a score of 80, what would the picture graph look like?   **Possible answer: there would be another row below 85. There would be half of a star next to 80.**

Lesson Check (CC.3.MD.3)

1. Karen asked her friends to name their favorite type of dog.

Favorite Dog

Retriever	🦴 🦴 🦴 🦴 🦴
Poodle	🦴 🦴 🦴
Terrier	🦴

Key: Each 🦴 = 2 people.

How many people chose poodles?

Ⓐ 10   Ⓒ 4

● 6   Ⓓ 3

2. Henry made a picture graph to show what topping people like on their pizza. This is his key.

Each 🍕 = 6 people.

What does 🍕 🍕 stand for?

Ⓐ 2 people

Ⓑ 6 people

Ⓒ 9 people

● 12 people

Spiral Review (CC.3.NBT.1)

3. Estimate the sum. (Lesson 1.3)

$$523 + 295$$

Ⓐ 900   Ⓒ 700

● 800   Ⓓ 600

4. Estimate the difference. (Lesson 1.8)

$$610 - 187$$

Ⓐ 800   Ⓒ 500

Ⓑ 600   ● 400

5. What is 871 rounded to the nearest ten? (Lesson 1.2)

Ⓐ 900

Ⓑ 880

● 870

Ⓓ 800

6. What is 473 rounded to the nearest hundred? (Lesson 1.2)

Ⓐ 400

Ⓑ 470

● 500

Ⓓ 570

Name _____

Make Picture Graphs

Ben asked his classmates about their favorite kind of TV show. He recorded their responses in a frequency table. Use the data in the table to make a picture graph.

Favorite TV Show	
Type	Number
Cartoons	9
Sports	6
Movies	3

Follow the steps to make a picture graph.

Step 1 Write the title at the top of the graph.

Possible answers are given for 2–3.

Step 2 Look at the numbers in the table. Tell how many students each picture represents for the key.

Step 3 Draw the correct number of pictures for each type of show.

Favorite TV Show

Cartoons	▪ ▪ ▪
Sports	▪ ▪
Movies	▪

Key: Each ▪ = 3 students.

Use your picture graph for 1–5.

1. What title did you give the graph?

Favorite TV Show

_____

2. What key did you use?

Each ▪ = 3 students.

_____

3. How many pictures did you use to represent sports?

2 pictures

_____

Problem Solving REAL WORLD Possible answers are given.

4. How many pictures would you draw if 12 students chose game shows as their favorite kind of TV show?
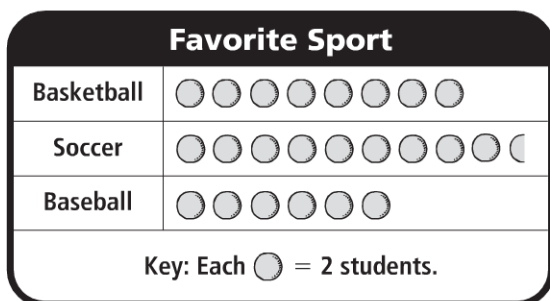
4 pictures

5. What key would you use if 10 students chose cartoons?

Each ▪ = 2 students.

Lesson Check (CC.3.MD.3)

1. Sandy made a picture graph to show the sports her classmates like to play. How many fewer students chose baseball than chose soccer?

Favorite Sport

Basketball	○○○○○○○○
Soccer	○○○○○○○○○○
Baseball	○○○○○○

Key: Each ○ = 2 students.

Ⓐ 3   ● 7

Ⓑ 4   Ⓓ 8

2. Tommy is making a picture graph to show his friends' favorite kind of music. He plans to use one musical note to represent 2 people. How many notes will he use to represent that 4 people chose country music?

● 2

Ⓑ 4

Ⓒ 6

Ⓓ 8

Spiral Review (CC.3.OA.9, CC.3.NBT.1, CC.3.NBT.2)

3. Find the sum. (Lesson 1.7)

$$490$$
$$+ 234$$

Ⓐ 256   Ⓒ 664

Ⓑ 624   ● 724

4. Sophie wrote odd numbers on her paper. Which number was NOT a number that Sophie wrote? (Lesson 1.1)

Ⓐ 5   Ⓒ 13

Ⓑ 11   ● 20

5. Miles ordered 126 books to give away at the store opening. What is 126 rounded to the nearest hundred? (Lesson 1.2)

Ⓐ 230

Ⓑ 200

Ⓒ 130

● 100

6. Estimate the difference. (Lesson 1.8)

$$422$$
$$- 284$$

● 100

Ⓑ 180

Ⓒ 200

Ⓓ 700

Name _____

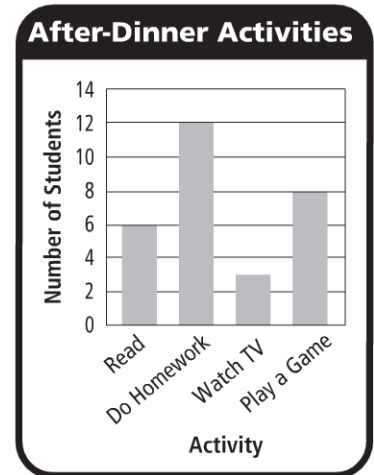## Use Bar Graphs

Use the After-Dinner Activities bar graph for 1–6.

The third-grade students at Case Elementary School were asked what they spent the most time doing last week after dinner. The results are shown in the bar graph at the right.

After-Dinner Activities

1. How many students spent the most time watching TV after dinner?

   3 students

2. How many students in all answered the survey?

   29 students

3. How many students in all played a game or read?

   14 students

4. How many fewer students read than did homework?

   6 fewer students

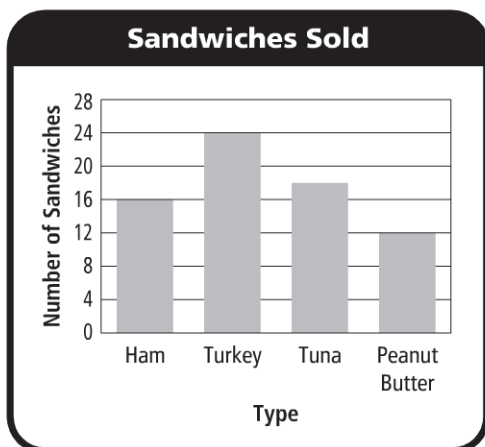5. How many more students read than watched TV?

   3 more students

Problem Solving REAL WORLD

6. Suppose 3 students changed their answers to reading instead of doing homework. Where would the bar for reading end?

   halfway between 8 and 10

Lesson Check (CC.3.MD.3)

Sandwiches Sold

1. The bar graph shows the number of sandwiches sold at Lisa's sandwich cart yesterday. How many tuna sandwiches were sold?

   Ⓐ 12

   Ⓑ 16

   ● 18

   Ⓓ 20

Spiral Review (CC.3.NBT.1)

2. What is 582 rounded to the nearest ten? (Lesson 1.2)

   Ⓐ 500

   ● 580

   Ⓒ 590

   Ⓓ 600

3. Savannah read 178 minutes last week. What is 178 rounded to the nearest hundred? (Lesson 1.2)

   Ⓐ 400   ● 200

   Ⓑ 280   Ⓓ 180

4. Estimate the difference. (Lesson 1.8)

   $$371$$
   $$-\ \ 99$$

   Ⓐ 500   ● 300

   Ⓑ 400   Ⓓ 200

5. Estimate the difference. (Lesson 1.8)

   $$625$$
   $$-\ 248$$

   Ⓐ 800   ● 400

   Ⓑ 500   Ⓓ 300

Make Bar Graphs

Ben asked some friends to name their favorite breakfast food. He recorded their choices in the frequency table at the right.

Favorite Breakfast Food	
Food	Number of Votes
Waffles	8
Cereal	14
Pancakes	12
Oatmeal	4

1. Complete the bar graph by using Ben's data.

Check students' work.

Favorite Breakfast Food
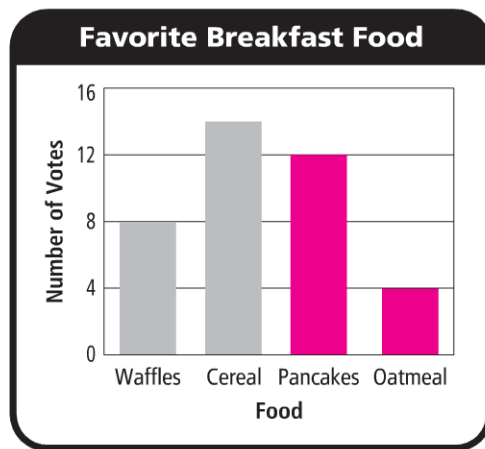
Use your bar graph for 2–5.

2. Which food did the most people choose as their favorite breakfast food?

cereal

3. How many people chose waffles as their favorite breakfast food?
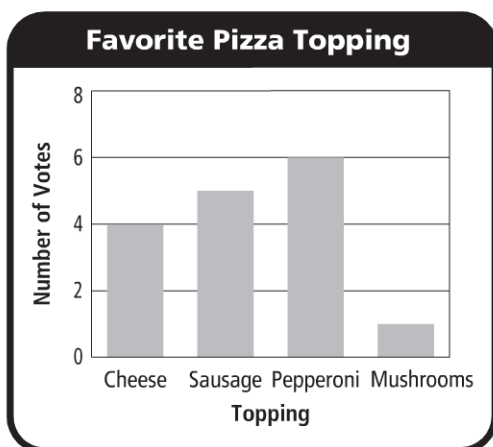
8 people

4. How did you know how high to draw the bar for pancakes?

Possible answer: since 12 people chose pancakes, I made the top of the bar end at the line for 12.

5. Suppose 6 people chose oatmeal as their favorite breakfast food. How would you change the bar graph?

Possible answer: I would make the bar for oatmeal end halfway between 4 and 8.

Favorite Pizza Topping

Number of Votes

8
6
4
2
0

Cheese Sausage Pepperoni Mushrooms
Topping

1. Gary asked his friends to name their favorite pizza topping. He recorded the results in a bar graph. How many people chose pepperoni?

● 6 　　　　 Ⓒ 4

Ⓑ 5 　　　　 Ⓓ 1

2. Suppose 3 more friends chose mushrooms. Where would the bar for mushrooms end?

Ⓐ 2 　　　　 Ⓒ 6

● 4 　　　　 Ⓓ 8

Spiral Review (CC.3.OA.9, CC.3.NBT.1)

3. Estimate the sum. (Lesson 1.3)

458
+ 214

● 700 　　　 Ⓒ 300

Ⓑ 600 　　　 Ⓓ 200

4. Matt added 14 + 0. What is the correct sum? (Lesson 1.1)

Ⓐ 140 　　　 Ⓒ 1

● 14 　　　　 Ⓓ 0

5. There are 682 runners registered for an upcoming race. What is 682 rounded to the nearest hundred? (Lesson 1.2)

Ⓐ 600
Ⓑ 680
● 700
Ⓓ 780

6. There are 187 new students this year at Maple Elementary. What is 187 rounded to the nearest ten? (Lesson 1.2)

Ⓐ 100
Ⓑ 180
● 190
Ⓓ 200

Solve Problems Using Data

Use the Favorite Hot Lunch bar graph for 1–3.

1. How many more students chose pizza than chose grilled cheese?

Think: Subtract the number of students who chose grilled cheese, 2, from the number of students who chose pizza, 11.

$11 - 2 = 9$ **9** ____ more students

2. How many students did not choose chicken patty?   **21** ____ students

3. How many fewer students chose grilled cheese than chose hot dog?

6 ____ fewer students

Favorite Hot Lunch

Use the Ways to Get to School bar graph for 4–7.

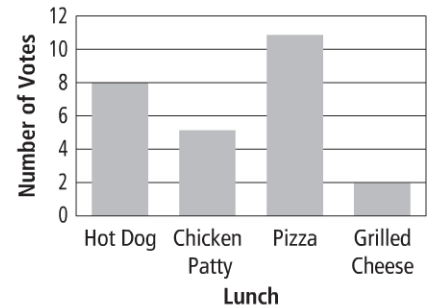**4.** How many more students walk than ride in a car to get to school?
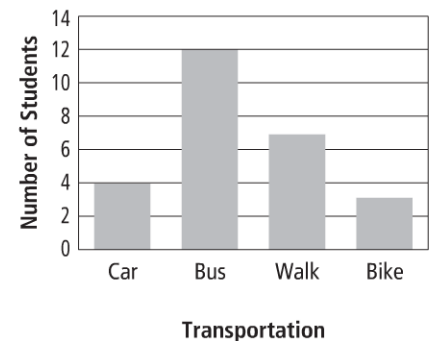
3 ____ more students

5. How many students walk and ride a bike combined?

10 ____ students

Ways to Get to School

Problem Solving REAL WORLD

6. Is the number of students who get to school by car and bus greater than or less than the number of students who get to school by walking and biking? **Explain.**

greater than; Possible explanation: 4 + 12 = 16; 7 + 3 = 10; 16 > 10

7. What if 5 more students respond that they get to school by biking? Would more students walk or ride a bike to school? **Explain.**

bike; Possible explanation: 7 students walk; 3 + 5 = 8 students bike; 7 < 8

Lesson Check (CC.3.MD.3)

1. How many fewer votes were for bench repair than for food drive?

   (A) 9

   ● 10

   (C) 11

   (D) 16

2. How many votes were there in all?

   (A) 4   ● 32

   (B) 14   (D) 34
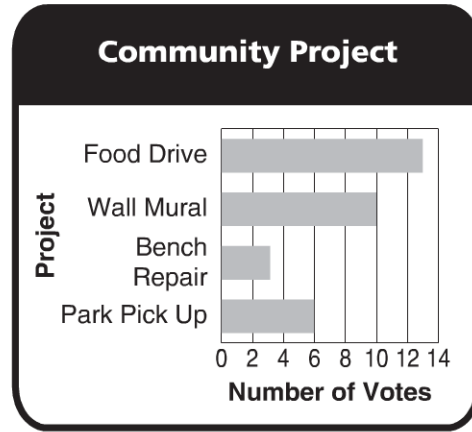
Community Project

Spiral Review (CC.3.NBT.1, CC.3.NBT.2)

3. Find the difference. (Lesson 1.10)

$$650$$
$$-\ 189$$

   ● 461   (C) 539

   (B) 479   (D) 571

4. Greyson has 75 basketball cards. What is 75 rounded to the nearest ten? (Lesson 1.2)

   (A) 60

   (B) 70

   ● 80

   (D) 90

5. Sue spent $18 on a shirt, $39 on a jacket, and $12 on a hat. How much did she spend in all? (Lesson 1.5)

   (A) $79   (C) $57

   ● $69   (D) $51

6. There are 219 adults and 174 children at a ballet. How many people are at the ballet in all? (Lesson 1.7)
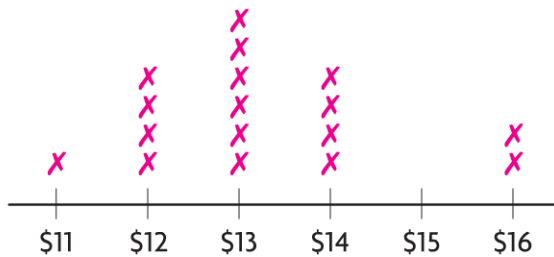
   (A) 45   (C) 383

   (B) 293   ● 393

Use and Make Line Plots

Use the data in the table to make a line plot.

How Many Shirts Were Sold at Each Price?	
Price	Number Sold
$11	1
$12	4
$13	6
$14	4
$15	0
$16	2

```
              X
              X
         X    X    X
         X    X    X
         X    X    X              X
    X    X    X    X              X
  __+____+____+____+____+____+__
   $11  $12  $13  $14  $15  $16
```

How Many Shirts Were Sold at Each Price?

1. How many shirts sold for $12?

4 shirts

2. At which price were the most shirts sold?

$13

3. How many shirts in all were sold?

17 shirts

4. How many shirts were sold for $13 or more?

12 shirts

Problem Solving REAL WORLD

Use the line plot above for 5–6.

5. Were more shirts sold for less than $13 or more than $13? **Explain**.

more than $13; 6 > 5

6. Is there any price for which there are no data? **Explain.**

yes; Possible explanation: there are no Xs above $15, so there were no shirts sold for $15.

Lesson Check (CC.3.MD.4)

1. Pedro made a line plot to show the heights of the plants in his garden. How many plants are less than 3 inches tall?

   (A) 4   ● 10
   (B) 5   (D) 16

Heights of Plants (inches)

Spiral Review (CC.3.NBT.1, CC.3.NBT.2)

2. Find the sum. (Lesson 1.7)

   $$642 + 259$$

   (A) 383
   (B) 801
   (C) 891
   ● 901

3. Find the difference. (Lesson 1.10)

   $$460 - 309$$

   (A) 61
   ● 151
   (C) 161
   (D) 169

4. There were 262 hamburgers cooked for the school fair. What is 262 rounded to the nearest hundred? (Lesson 1.2)

   (A) 200
   (B) 260
   (C) 270
   ● 300

5. Makenzie has 517 stickers in her collection. What is 517 rounded to the nearest ten? (Lesson 1.2)

   (A) 500
   (B) 510
   ● 520
   (D) 600

Chapter 2 Extra Practice

Lesson 2.1

Use the Pets tables for 1–2.

1. Manny collected data about pets owned by students in his class. Complete Manny's tally table and frequency table.

Pets	
Pets	Tally
Cat	IIII
Dog	II
Bird	I
Fish	I

Pets	
Pets	Number
Cat	4
Dog	2
Bird	1
Fish	1

Check students' tables.

2. How many more students have cats than have dogs and birds combined?

1 more student

Lessons 2.2 - 2.3

Use the Seashells picture graph for 1–3.

1. Maggie has a picture graph that shows the seashells she collected. How many seashells did Maggie collect in all?

85 seashells

Seashells	
Cockle	🐚 🐚 🐚 🐚
Conch	🐚 🐚
Lightning Whelk	🐚 🐚 🐚

Key: Each 🐚 = 10 shells.

2. How many more cockle shells did she collect than lightning whelks?

15 more cockle shells

3. What if the key were "Each 🐚 = 5 shells?" How many pictures would there be for conch?

4 pictures