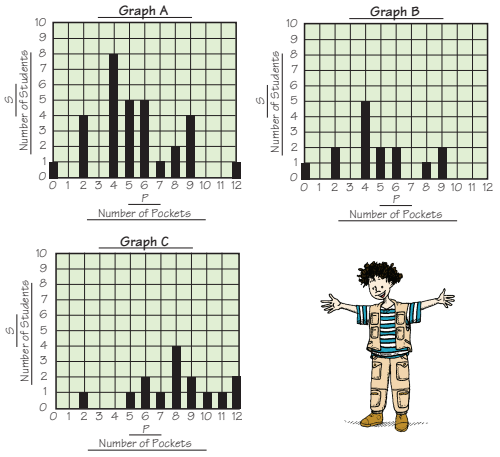
Professor Peabody collected three sets of survey data at Bessie Coleman School.



1. Write a title for each graph. Choose titles that will match each graph with the correct survey.
2. Describe each graph in words.
3. Write a note to Professor Peabody. Explain to him how you were able to match the graphs with the three surveys. You must convince him that you titled the graphs correctly.

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Reviewing Averages

A graph is a good way to represent a set of data since it gives us a picture of all the data. Another way to represent a set of data is to find an **average.** An average is one number that can be used to represent a set of data.

There is more than one way to find an average. The **mode** is one kind of average. In Lesson 1, you learned that the mode is the most common value in a set of data.

4. Find the mode for each set of survey data represented by the graphs in Question 1.
5. Professor Peabody returned to Bessie Coleman School to get his pictures and data tables. While he was there, he collected data on the number of pockets the teachers had.
   - **A.** What is the mode for the data in the table below?
   - **B.** Does it make sense to say this number of pockets is typical for the teachers? Why or why not?

Teachers' Pockets

Teacher	Number of Pockets
Mrs. Dewey	1
Mr. Martinez	6
Mrs. Lee	0
Mr. Green	6
Mrs. Scott	2
Mrs. Grace	3
Mrs. Sharma	4

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Student Guide

Analyzing Data (SG pp. 18–221)
Questions 1–9

1.* Titles will vary.

Graph A: Pockets on 31 Students Inside
Graph B: Pockets on 15 Students Inside
Graph C: Pockets on 15 Students Outside

2.* Descriptions will vary. Possible descriptions include: Since the bars are spread out, Graph A shows students wearing clothes with numbers of pockets ranging from 0 to 12. The bars are different heights with the tallest bars around 4 pockets and the shortest bars at each end. The bars are taller than on Graphs B and C.

The shape of Graph B is similar to the shape of Graph A, but the bars are shorter. No students are wearing clothes with 10 or more pockets. The tallest bar is the bar for 4 pockets.

Graph C has a similar shape, but the bars have moved to the right side of the graph. The tallest bar is the bar for 8 pockets. Most students are wearing clothes with 8 or more pockets while no students are wearing clothes with 0 or 1 pocket.

3.* Notes will vary. Some possible arguments include: Since Graph A has taller bars, it represents more students. It represents 31 students. The remaining two graphs describe the students in the same classroom, one with jackets, the other without. Since jackets usually have pockets, the graph that shows more pockets is the one that is outside. Since the bars on Graph C are to the right of Graph B, Graph C represents more pockets. So, Graph C is titled "Pockets on 15 Students Outside" and Graph B is titled "Pockets of 15 Students Inside."

4. Graph A: 4 pockets; Graph B: 4 pockets; Graph C: 8 pockets

5. **A.*** 6 pockets

B.* Answers will vary. Here, the mode is not representative. The data show that 6 is the most number of pockets in the data and only 2 teachers have 6 pockets. It does not represent the center of the data.

*Answers and/or discussion are included in the lesson.

6.* Answers will vary. The median is a better average. It shows that there are some teachers who have less than 3 pockets and some teachers who have more.

7.* 64 inches; Possible response: I made a list of the heights, 60 in., 61 in., 62 in., 66 in., 70 in., 72 in. Since there is an even number of heights, I had to find a height between 62 in. and 66 in. 64 inches is right in the middle, so 64 inches is the median height.

In Lesson 2 you learned about the **median**, another kind of average. You have used the median to average data in labs or other activities. It is the number that is exactly in the middle of the data. For example, to find the median of the number of teachers' pockets, you can list the numbers in order from smallest to largest like this.

0, 1, 2, (3), 4, 6, 6

Since 3 is exactly in the middle of the data, 3 pockets is the median.

6. Which average, the median or the mode, do you think represents the Teachers' Pockets data better? Tell why.

7. Professor Peabody found the height of six teachers at Bessie Coleman School. He arranged the data in a table. What is the median height for the six teachers? Explain your strategy for finding the median.

Teachers' Heights

Teacher	Height in Inches
Mrs. Dewey	66
Mr. Martinez	70
Mrs. Lee	60
Mr. Green	72
Mrs. Scott	62
Mrs. Sharma	61

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8. A.* See Figure 2 in the Lesson.

B.* 4 pockets. Possible response: I looked for the tallest bar.

C.* Yes

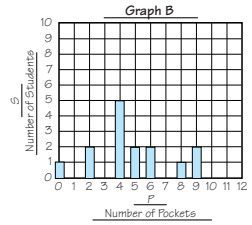
9. Small: 11 gems

Medium: 18 gems

Big Snack: 25 gems

The **mean** is a third kind of average. When people talk about averages in everyday life, they usually are talking about the mean. We will review the mean in a later unit.

8. A. Use the data in Graph B to make a data table.



B. Find the median number of pockets. Show or tell how you found the median.

C. Are the median and the mode the same for this set of data?

9. Fruit Gem Snacks come in three sizes. Arti and Jessie wanted to know how many fruit gems come in each size bag. They counted the number of fruit gems in three bags of each size and recorded the data in this table. Find the median number of fruit gems in each size bag.

Fruit Gems in Each Bag Size

S Big Size	N Number of Fruit Gems			
	Bag 1	Bag 2	Bag 3	Median
Small	10	12	11	
Medium	18	18	16	
Big Snack	25	27	24	

Complete the *Problem Solve with Data* pages in your *Student Activity Book* for more practice using averages tables, and graphs to solve problems.

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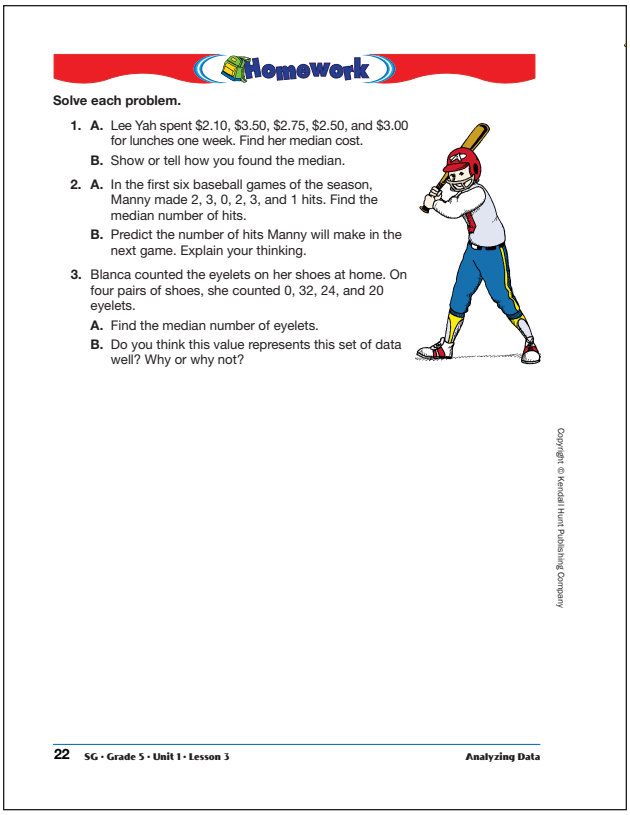
***Answers and/or discussion are included in the lesson.**



Homework

Solve each problem.

1. **A.** Lee Yah spent $2.10, $3.50, $2.75, $2.50, and $3.00 for lunches one week. Find her median cost.
   B. Show or tell how you found the median.
2. **A.** In the first six baseball games of the season, Manny made 2, 3, 0, 2, 3, and 1 hits. Find the median number of hits.
   B. Predict the number of hits Manny will make in the next game. Explain your thinking.
3. Blanca counted the eyelets on her shoes at home. On four pairs of shoes, she counted 0, 32, 24, and 20 eyelets.
   A. Find the median number of eyelets.
   B. Do you think this value represents this set of data well? Why or why not?

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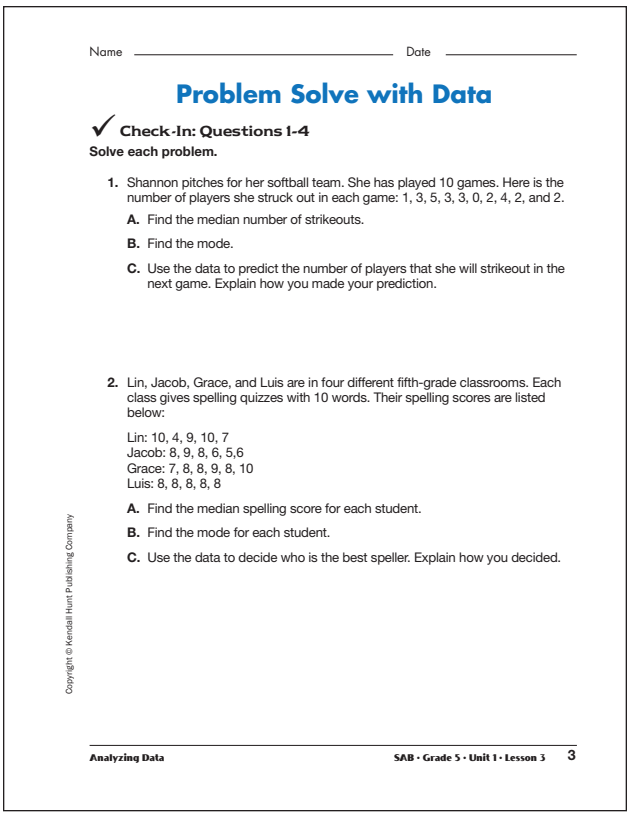

Name _____ Date _____

Problem Solve with Data

✓ Check-In: Questions 1-4

Solve each problem.

1. Shannon pitches for her softball team. She has played 10 games. Here is the number of players she struck out in each game: 1, 3, 5, 3, 3, 0, 2, 4, 2, and 2.
   A. Find the median number of strikeouts.
   B. Find the mode.
   C. Use the data to predict the number of players that she will strikeout in the next game. Explain how you made your prediction.
2. Lin, Jacob, Grace, and Luis are in four different fifth-grade classrooms. Each class gives spelling quizzes with 10 words. Their spelling scores are listed below:

   Lin: 10, 4, 9, 10, 7
   Jacob: 8, 9, 8, 6, 5,6
   Grace: 7, 8, 8, 9, 8, 10
   Luis: 8, 8, 8, 8, 8

   A. Find the median spelling score for each student.
   B. Find the mode for each student.
   C. Use the data to decide who is the best speller. Explain how you decided.

Analyzing Data SAB • Grade 5 • Unit 1 • Lesson 3 3

***Student Activity Book* - Page 3**

Homework (SG p. 22)
Questions 1–4

1. **A.** $2.75
   B. Possible response: I made a list of all the dollar amounts: $2.10, $2.50, $2.75, $3.00, and $3.50. I found that $2.75 was right in the middle since there were two amounts that were below it and two amounts that were above it.
2. **A.** 2 hits
   B. Predictions will vary. A good prediction is 2 hits since that is his median number of hits. Any predictions greater than 3 hits would not make sense since Manny has never made that many hits.
3. **A.** 22 eyelets
   B. Explanations will vary. One possible reponse is to say, "no," since the median value is not an actual value of the number of eyelets on a pair of shoes. On the other hand, the number is in the middle of the data so students could say "yes."

Student Activity Book

Problem Solve with Data (SAB pp. 3–5)
Questions 1–4

1. **A.** 2.5 players
   B. there are two modes, 2 and 3
   C. Answers will vary; however, students should choose either 2 or 3 strikeouts. Possible explanation: I choose 3 strikeouts because the median is 2.5 and 3 is one of the modes. Since 2.5 is between 2 and 3, I rounded it up to 3 for my predication.
2. **A.** Lin: 9; Jacob: 7; Grace: 8; Luis: 8
   B. Lin: 10; Jacob: 8 and 6; Grace: 8; Luis: 8
   C. Possible responses: I think Lin is the best speller since she has the highest median (9) and the highest mode (10). Or, I think Grace or Luis are the best spellers because they have 8 for both their median and their mode and they are most consistent (Lin has one score of 4).