Student Guide

Using Picture Graphs (SG pp. 13–14)
Questions 1–13

1. **A.*** 24 students

   B.* Students can skip count by 3s or use repeated addition to find the number of students who have a dog.

2. **A.*** 3 students

   B.* Since there is only one symbol on the graph and each symbol is equal to 3 students, there are 3 students who have a bird.

3.* 12 students have a cat; 15 students have a fish

4.* 21 students

5.* One possible answer: Dogs will have the greatest number. Since most of the students in their classroom have a dog as a pet, it is reasonable to think that more students will have a dog as a pet in the other classroom.

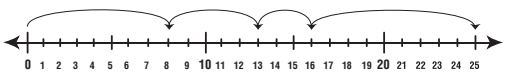
6. 16 letters

7. Answers will vary.

8. Answers will vary. For example: Mila, John, Roberto, and Kathryn;
   Number sentence: $4 + 4 + 7 + 7 = 22$

9. **A.** 16 **B.** 9

   C.



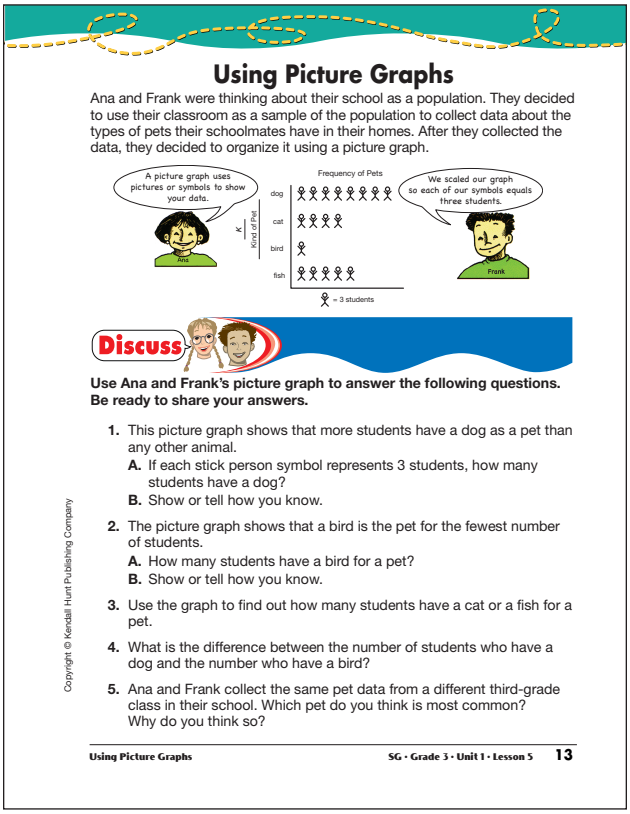
10. Jay and Joanie could have turned over a 4 and a 9 or a 6 and a 7.

11. 5 navy beans

12. Shannon pulled twenty-seven beans. She pulled seventeen pinto beans, three lima beans, and seven navy beans.

13.* Answers will vary. Students need only find an estimate.

    $20 + 20 + 10 + 20 + 5 = 75$ animals is an efficient estimate.



Using Picture Graphs

Ana and Frank were thinking about their school as a population. They decided to use their classroom as a sample of the population to collect data about the types of pets their schoolmates have in their homes. After they collected the data, they decided to organize it using a picture graph.

Discuss

Use Ana and Frank's picture graph to answer the following questions. Be ready to share your answers.

1. This picture graph shows that more students have a dog as a pet than any other animal.
   - **A.** If each stick person symbol represents 3 students, how many students have a dog?
   - **B.** Show or tell how you know.
2. The picture graph shows that a bird is the pet for the fewest number of students.
   - **A.** How many students have a bird for a pet?
   - **B.** Show or tell how you know.
3. Use the graph to find out how many students have a cat or a fish for a pet.
4. What is the difference between the number of students who have a dog and the number who have a bird?
5. Ana and Frank collect the same pet data from a different third-grade class in their school. Which pet do you think is most common? Why do you think so?

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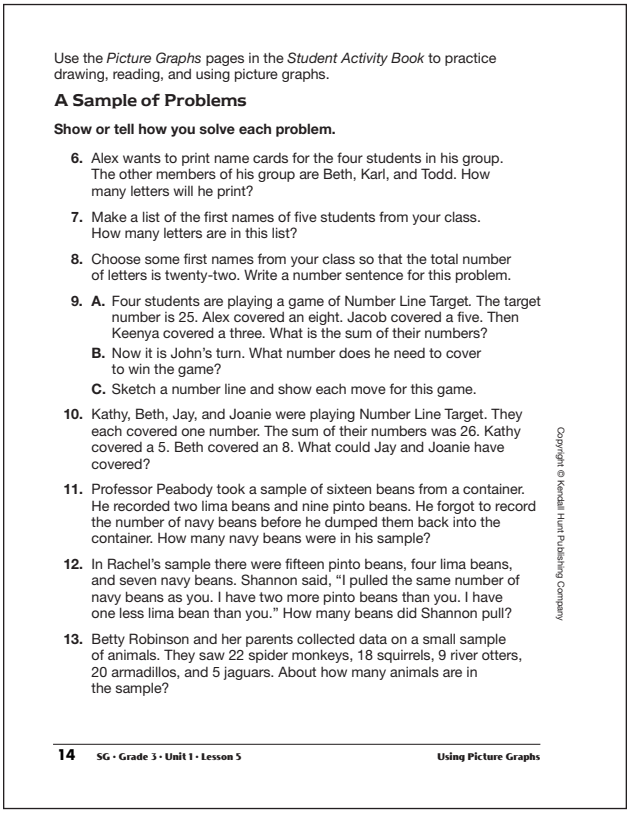

Use the *Picture Graphs* pages in the *Student Activity Book* to practice drawing, reading, and using picture graphs.

A Sample of Problems

Show or tell how you solve each problem.

6. Alex wants to print name cards for the four students in his group. The other members of his group are Beth, Karl, and Todd. How many letters will he print?
7. Make a list of the first names of five students from your class. How many letters are in this list?
8. Choose some first names from your class so that the total number of letters is twenty-two. Write a number sentence for this problem.
9. **A.** Four students are playing a game of Number Line Target. The target number is 25. Alex covered an eight. Jacob covered a five. Then Keenya covered a three. What is the sum of their numbers?
   - **B.** Now it is John's turn. What number does he need to cover to win the game?
   - **C.** Sketch a number line and show each move for this game.
10. Kathy, Beth, Jay, and Joanie were playing Number Line Target. They each covered one number. The sum of their numbers was 26. Kathy covered a 5. Beth covered an 8. What could Jay and Joanie have covered?
11. Professor Peabody took a sample of sixteen beans from a container. He recorded two lima beans and nine pinto beans. He forgot to record the number of navy beans before he dumped them back into the container. How many navy beans were in his sample?
12. In Rachel's sample there were fifteen pinto beans, four lima beans, and seven navy beans. Shannon said, "I pulled the same number of navy beans as you. I have two more pinto beans than you. I have one less lima bean than you." How many beans did Shannon pull?
13. Betty Robinson and her parents collected data on a small sample of animals. They saw 22 spider monkeys, 18 squirrels, 9 river otters, 20 armadillos, and 5 jaguars. About how many animals are in the sample?

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

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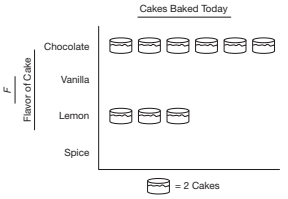
Name _____ Date _____

Picture Graphs

1. Linda's mom is a baker. Linda decided to use a picture graph to show the different flavors of cake her mother baked during a day. Linda finished her data table but forgot to finish the graph. Use the information in the data table to finish the picture graph.

Cakes Baked Today

F Flavor of Cake	*N* Number of Cakes Baked
Chocolate	12
Vanilla	10
Lemon	6
Spike	2



2. What scale did Linda use to make her picture graph? _____

3. **A.** How many cake symbols did you have to draw on the graph to show 10 vanilla cakes?

B. Show or tell how you know.

4. Write a number sentence to show the difference between the number of chocolate cakes Linda's mom baked and the number of spice cakes she baked.

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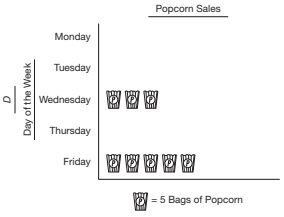
Name _____ Date _____

✓ **Check-In: Questions 5-10**

5. The students in third grade were selling popcorn to raise money. They started to draw a data table and a picture graph to show how many bags of popcorn they sold each day. Use the information below to complete the missing parts of the data table and picture graph.

Popcorn Sales

D Day of the Week	*N* Number of Bags Sold
Monday	10
Tuesday	20
Wednesday	
Thursday	5
Friday	



Use your graph and data table to answer the following questions.

6. **A.** How many popcorn bag symbols did you need to draw on the graph to show the number of bags sold on Tuesday? _____

B. Show or tell how you know.

7. **A.** How many bags of popcorn did the students sell on Friday?_____

B. Show or tell how you know.

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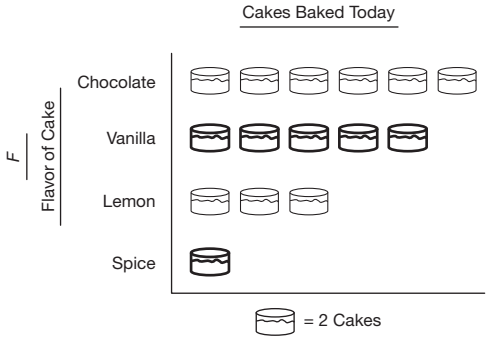
Student Activity Book

Picture Graphs (SAB pp. 23–26)
Questions 1–10

1.



2.* 1 symbol = 2 cakes

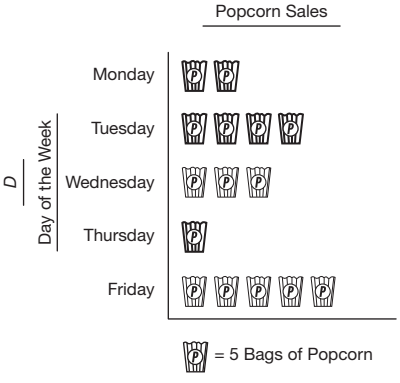
3. A.* 5 symbols

B.* Each symbol on the graph is equal to 2 cakes. Since Linda's mom baked 10 vanilla cakes that would equal 5 symbols on the graph because
$2 + 2 + 2 + 2 + 2 = 10$

4. $12 - 2 = 10$

5.

D Day of the Week	*N* Number of Bags Sold
Monday	10
Tuesday	20
Wednesday	15
Thursday	5
Friday	25



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

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6. A. 4 symbols

B. One response: The class sold 20 bags of popcorn on Tuesday. Since each symbol is equal to 5 bags, I counted by 5s until I got to 20. I had to count 4 times.

7. A. 25 bags

B. One response: Each symbol is equal to 5 bags of popcorn. There are 5 symbols on the graph so I added $5 + 5 + 5 + 5 + 5 = 25$.

8. A. 30 bags

B. Students sold 5 more bags on Monday and Tuesday than they sold on Friday.

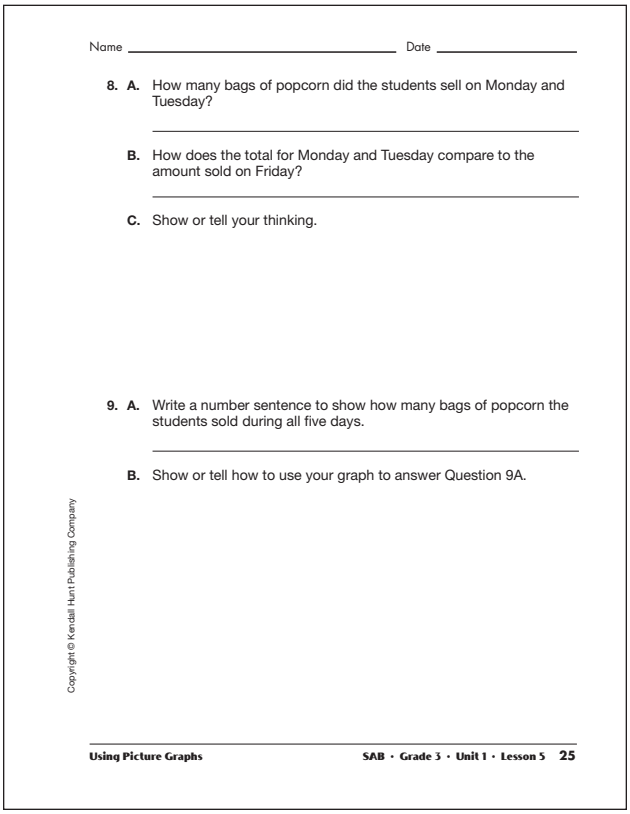
C. 30 bags – 25 bags = 5 bags
So, 5 more bags on Monday and Tuesday.

9. A. $10 + 20 + 15 + 5 + 25 = 75$

B. One response: I can count all of the symbols counting by 5s.

10. A. I think they will sell the most on Friday.

B. Since they sold the most this week on Friday, I think they will do it again next week.



Name _____ Date _____

8. A. How many bags of popcorn did the students sell on Monday and Tuesday?

_____

B. How does the total for Monday and Tuesday compare to the amount sold on Friday?

_____

C. Show or tell your thinking.

9. A. Write a number sentence to show how many bags of popcorn the students sold during all five days.

_____

B. Show or tell how to use your graph to answer Question 9A.

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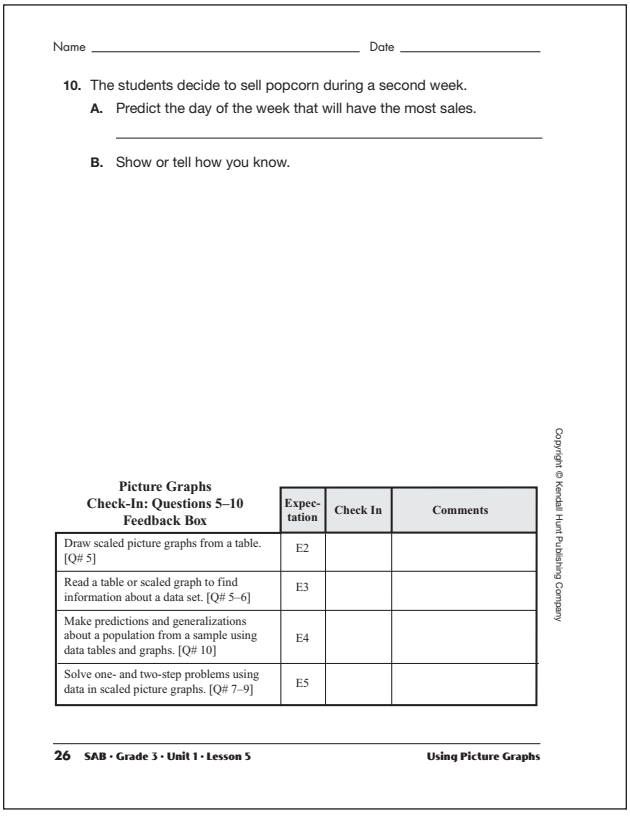

Name _____ Date _____

10. The students decide to sell popcorn during a second week.

A. Predict the day of the week that will have the most sales.

_____

B. Show or tell how you know.

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Picture Graphs Check-In: Questions 5–10 Feedback Box	Expectation	Check In	Comments
Draw scaled picture graphs from a table. [Q# 5]	E2		
Read a table or scaled graph to find information about a data set. [Q# 5–6]	E3		
Make predictions and generalizations about a population from a sample using data tables and graphs. [Q# 10]	E4		
Solve one- and two-step problems using data in scaled picture graphs. [Q# 7–9]	E5		

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