

Student Activity Book

Kind of Bean Lab (SAB pp. 13–18)
Questions 1–13

Answers to questions are based on the sample student picture and graph in lesson 3.

1. Kind of Bean (*K*) and Number of Beans (*N*)
2. A. black bean B. 170 black beans
3. A. navy bean B. 40 navy beans
4. 130 more black beans than navy beans.


Answers will vary. One possible response: I used my math facts. I know that $17 - 4 = 13$. So $170 - 40 = 130$.

5. 280 beans in the sample
6. Explanations will vary. One possible response: Add the number of beans recorded in the data table.

Name _____ Date _____

Kind of Bean Lab


Use the TIMS Laboratory Method to investigate the population of beans.



Draw

Draw a picture of the lab setup. Show the variables and the materials you will use.

1. What are the two main variables in your experiment?
_____ and _____



Collect


Collect the data. Use your scoop to take a sample from the container. Record the number of each kind of bean in the table.

Kind of Bean	
<i>K</i> Kind of Bean	<i>N</i> Number of Beans Pulled

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Explore

Answer the following questions using your data table and graph.

2. A. What kind of bean is most common in your sample?

- B. How many do you have of this kind of bean? _____
3. A. What kind of bean is least common in your sample? _____
- B. How many do you have of this kind of bean? _____
4. How many more of the most common beans do you have than the least common? Show or tell how you know.
5. What is the total number of beans in your sample? _____
6. Show or tell how you found the answer to Question 5.

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A Second Sample

✓ **Check-In: Questions 7-11**

7. You are going to collect a second sample with the same size scoop.
 - A. Predict which kind of bean will be the most common.

 - B. Predict which kind of bean will be the least common.

 - C. Show or tell how you decided.
8. Collect a second sample with the same size scoop. Count the beans and record your data in the table.

Second Sample

<i>K</i> Kind of Bean	<i>N</i> Number of Beans Pulled

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9. Graph your data.

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10. A. What kind of bean is most common in this sample?

B. What kind of bean is least common in this sample?

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11. Were your predictions in Question 7 correct? Why or why not?

Population Predictions

12. Use your data to make predictions about the bean population (all of the beans in the class container). Predict which bean is the most common and which bean is the least common. Tell why you think so.

13. Suppose you use a much larger scoop to take a sample.

A. How will the data in your data table change?

B. How will your graph change?

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7. **A.*** black bean **B.*** navy bean
C.* Explanations will vary. One possible response: Since 170 black beans were pulled the last time and only 40 navy beans were pulled, I think that will happen again. I think maybe there are more black beans in the container.
8. Answers will be based on the second sample.
9. Graphs will vary but should accurately show the data in the data table.
10. Answers will be based on the second sample.
- 11.* Answers will vary.
12. Answers will vary. One possible response: The most common bean in the container is the black bean. The least common bean is the navy bean. In the data from my sample, the number of black beans is about twice the number of pinto beans and there are about four times as many black beans as navy beans. The bean population in the container is similar to that of my sample. A possible recipe is: 200 black beans, 100 pinto beans, and 50 navy beans.
13. **A.*** Answers will vary. One possible response: The number of each type of bean in the sample would increase. The most common kind of bean in the sample would probably be the black bean and the least common, the navy bean.
B.* The bars would all be taller, but the black bean bar would still be the tallest. The navy bean bar would still be the shortest.

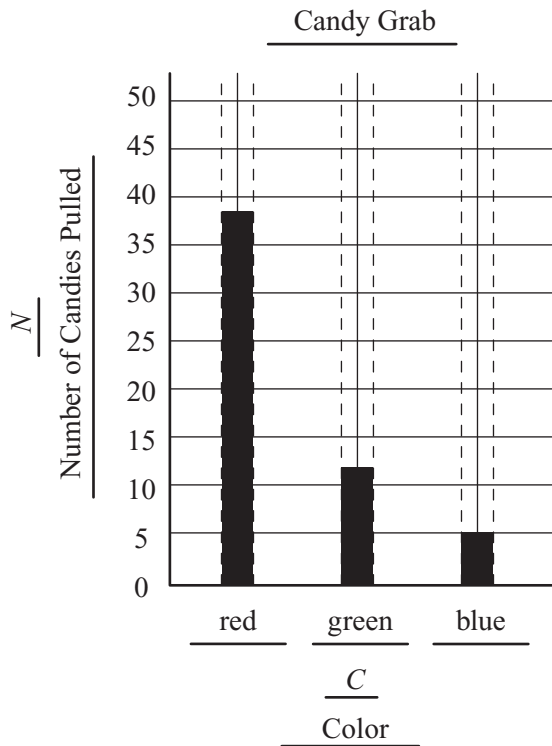
*Answers and/or discussion are included in the lesson.

Toni's Candy Grab (SAB p. 21)

Questions 1–3

1. Look for the following:
 - title of graph (e.g., Sample of Candy, Handful of Candy, Sampling);
 - labeled axes (Color on the horizontal axis along with the three colors, red, green, and blue; Number of Candies Pulled on the vertical axis); an appropriate scale on the vertical axis;
 - the heights of the bars should match the data in the table.

Possible Graph:



2. 56 candies
3. **A.** unlikely
B. likely
C. certain
D. impossible

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Toni's Candy Grab

Homework

1. Toni filled a bag with red, green, and blue candy. She reached inside and took out a sample. Graph the data she wrote in the table.

• Title the graph.
 • Label the axes.
 • Scale the vertical axis.

Toni's Data

C Color	N Number of Candies Pulled
red	39
green	12
blue	5
2. How many candies did she grab in her sample?

3. Toni reaches inside her bag again and pulls out only one candy. Use the words impossible, unlikely, likely, or certain to describe the following events:
 - A. She pulls a blue candy. _____
 - B. She pulls a red candy. _____
 - C. She pulls out a piece of candy. _____
 - D. She pulls out a yellow candy. _____

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