

Test Your Knowledge: Using Data to Solve Problems

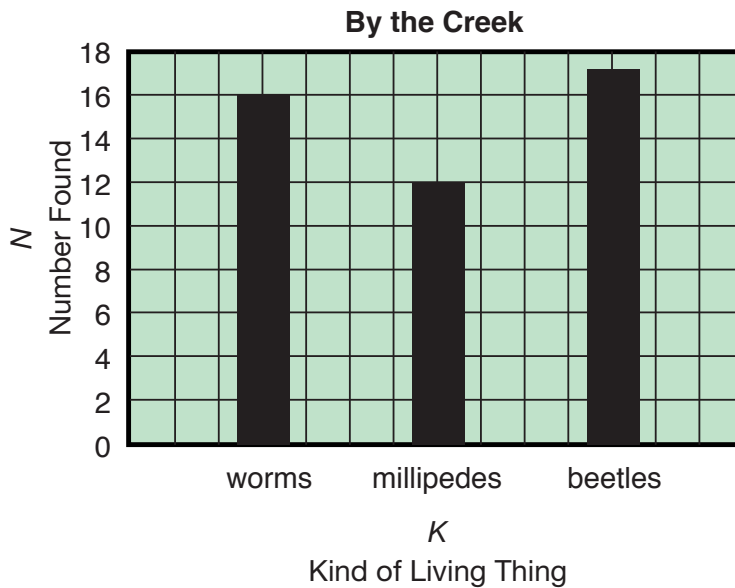
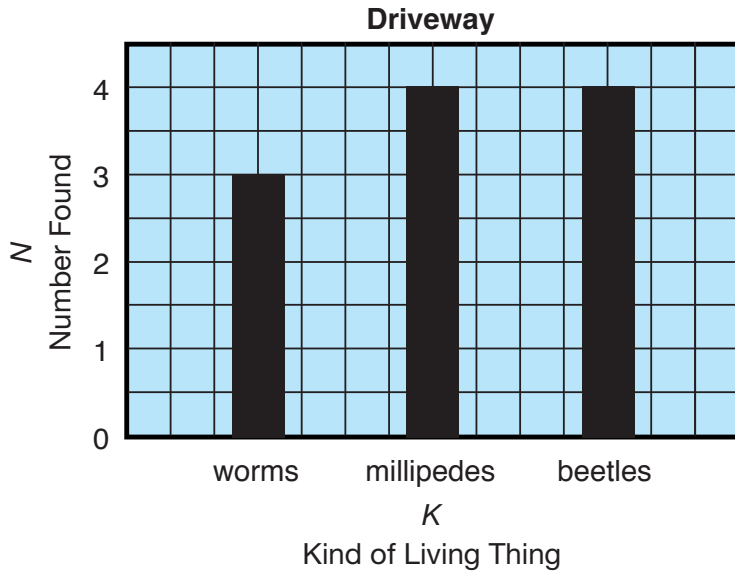
- I. Grace's Grandmother Kruger lives on a farm. For a science experiment, Grace dug up three buckets of dirt from her grandmother's flower garden. Then she looked at what was in each bucket and put the information into this data table.

Living Things in Grandmother's Flower Garden

<i>K</i> Kind of Living Thing	<i>N</i> Number of Living Things			Median
	Bucket 1	Bucket 2	Bucket 3	
worms	8	18	15	
millipedes	8	8	11	
beetles	9	8	17	

- A. What are the variables in Grace's investigation?
- B. Are the variables categorical or numerical?
- C. Find the median for the number found of each kind of living thing.
- D. Use a piece of *Centimeter Graph Paper* to make a graph of Grace's data. Use the median values.
- E. Grace took another bucketful of dirt from the same garden. Predict what kind of living thing she will find the most. Which do you think will be the least? Explain how you made your predictions.

2. Next Grace took a bucketful of dirt from the gravel driveway and one from the creek bank near her grandmother’s house. She graphed the data from the two sites and compared them. Here are her graphs.



- A.** Alexis looked at the graphs and said since both graphs have two taller bars and one shorter bar there is not much difference in the graphs. She decided that both buckets of dirt were pretty much the same. Do you agree with Alexis? Why or why not?
- B.** Use the graphs to describe the two buckets of dirt. What do they tell you about the living things in the driveway and by the creek?

3. The students in Mr. Moreno's class are keeping track of the number of laps they run during warm-up time in gym class. They record their progress on a chart on the wall. Here is their chart after the first day.

Student's Name	Number of Laps Completed
Michael	5
Nicholas	8
Keenya	4
Grace	7
John	8
Jackie	10
Irma	6
Jessie	4
Luis	5
Frank	7
Shannon	9
Ming	9
Roberto	10
Nila	5
Ana	7
Linda	7
Jacob	6
Lee Yah	7
Tanya	5
Romesh	7
Jerome	9
Maya	6

- A. If one of the variables is Number of Laps Completed, what is the second variable?
- B. Are the two variables categorical or numerical? How do you know?

4. A. Use the data collected on the chart in Question 3 to complete the data table.

Laps Run in Gym Class

Number of Laps	_____
0	
2	
6	

- B. Use *Centimeter Graph Paper* to make a bar graph representing the data collected.

5. A. What is the median number of laps that the students in Mr. Moreno’s class ran on the first day? Explain how you decided.

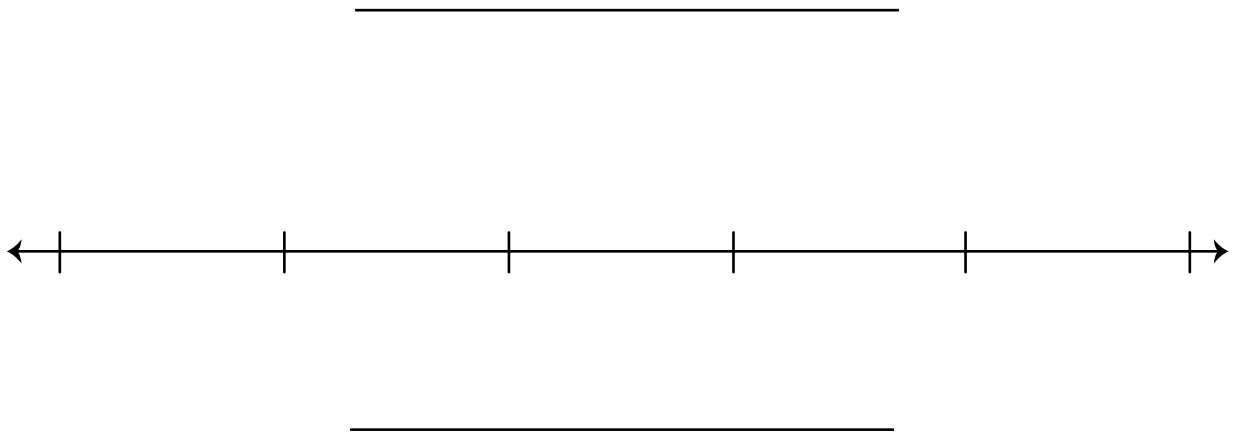
- B. How many students ran fewer than the median number of laps? How many students ran more than the median number of laps?

6. Jackie is helping her grandmother organize her sewing room. She found a box of fabric remnants in the closet that her grandmother used in quilting. She sorted the remnants and made a table to show what was in the box.

Remnants

Length of Remnant in Yards	Number of Remnants
$\frac{1}{4}$	3
$\frac{1}{2}$	8
$\frac{3}{4}$	2
1	7
$1\frac{1}{4}$	5
$1\frac{1}{2}$	2

Complete the line plot to represent the data in Jackie’s data table.



7. **A.** How many remnants did Jackie find in the box?
- B.** What is the median length of the remnants she found?
- C.** What is the mode for the length of the remnants?

8. Jackie’s grandmother needs 4 pieces of fabric that when put together will be 3 yards in length. Each piece of fabric must be a different length. Find two different combinations of remnants that Jackie can give to her grandmother. Show or tell how you decided.

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	Expectation	Check In	Comments
Make a bar graph with categorical data. [Q# 1D]	E3		
Make a line plot or bar graph using numerical data. [Q# 4B, 6]	E4		
Read a table, line plot, or bar graph to find information about a data set. [Q# 1A–C, 3A–B, 4A, 5A–B, 7A–C]	E7		
Make predications or generalizations about a data set using a data table and graph. [Q# 1E, 2A–B, 8]	E10		