

LESSON 4

Objective

Make a bar graph to show data.

Common Core State Standards

- **1.MD.4** Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

Measurement and Data

Bar Graphs

Counting and classifying provide a foundation for the gathering and analysis of data. Moving collected information from a tally chart to a graph helps children see that data can be displayed in a number of ways, with some methods of recording more adaptable to certain types of tasks. Children learn to assess the meaning of the numbers as they are compared in the bar graph, column to column, considering concepts of *most and least* and *how many more in one group than another*. This type of reasoning is a precursor to more advanced data investigation and higher-level thinking.

Try It! Perform the Try It! activity on the next page.

Talk About It

Discuss the Try It! activity.

- **Ask:** Which color did the class choose most often as their favorite? How can you tell?
- **Ask:** Which color did the class choose second most often as their favorite? How many more votes would that color need to be the class favorite? How do you know?
- Have students make a graph just using the numbers collected during the survey. Have students compare the number graph with the bar graph.
Ask: Which graph makes it easier to see right away which color is the favorite?

Solve It

With children, reread the problem. Have children use crayons to color in the bar graph on the Graphing Grid (BLM 8). Ask children to write a sentence based on the bar graph telling which color of new chalk the class should get and why.

More Ideas

For other ways to teach about making bar graphs—

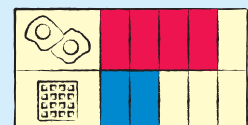
- Collect data from children about their favorite types of pets. Help children graph the data on the 4 × 12 Grid Side of the Graphing Mat.
- Have children make towers out of Snap Cubes® to represent data, then compare the heights of the towers to draw conclusions about the data. Guide children to connect the heights of the cube towers to the heights of the bars in a bar graph drawn on paper.

Formative Assessment

Have children try the following problem.

Look at the bar graph. Do more first graders like waffles or eggs for breakfast? Circle your answer.

waffles eggs



Try It! 30 minutes | Groups of 4

Here is a problem that you solve by making a bar graph.

Your class can get one new color of chalk: yellow, green, or red. Which color is the favorite of the most children in the class?

Introduce the problem. Then have children do the activity to solve the problem.

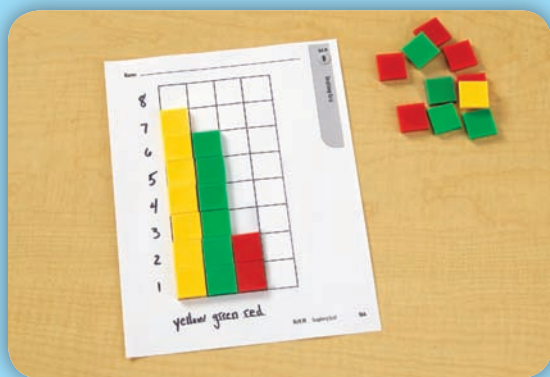
Distribute Color Tiles, the Graphing Grid (BLM 8), paper, and pencils to groups.

Materials

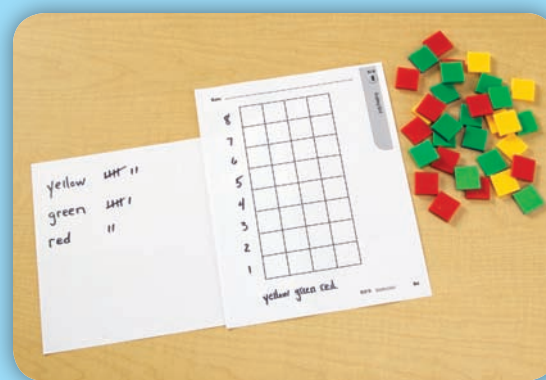
- Color Tiles (15 of each color per group)
- Graphing Mat (4 × 12 Grid Side; 1 per class)
- Graphing Grid (BLM 8; 1 per group)
- paper (1 sheet per group)
- pencils (1 per group)
- 4-inch by 4-inch paper squares (1 yellow, green, or red square per child)



1. Survey the class to find how many prefer each color: yellow, green, and red. On the board, use tally marks to show how many children chose each color, and instruct children to record the survey results.



3. Have groups transfer the information from the tally sheets to the grid. **Say:** *For each tally mark, put one tile on the Graphing Grid.* Then have the entire class graph the data on the Graphing Mat, using 4-inch by 4-inch colored paper squares.



2. Say: *A graph is a picture that shows us numbers in an easier way. You can make a bar graph to find which color is liked best by the most children in our class.* Guide children in labeling three columns at the bottom of the grid with the three color names. Then have them number each row at the left of the graph, beginning at the bottom with 1 and counting upward by ones to 8.

Look Out!

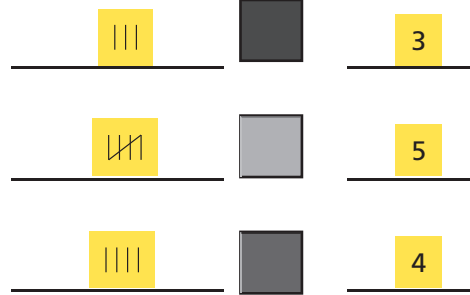
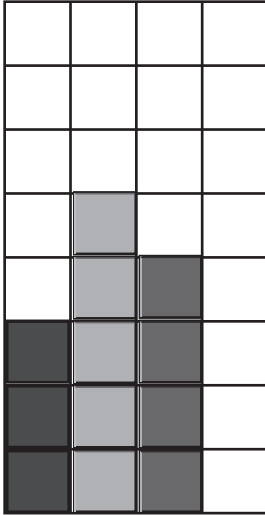
Watch out for children who do not represent the correct number in each bar on the bar graph. Have children count out the correct number of tiles first, then place them on the chart using one-to-one correspondence to match up.



Use Color Tiles. Make the graph. Make tally marks for each color. Write the number.

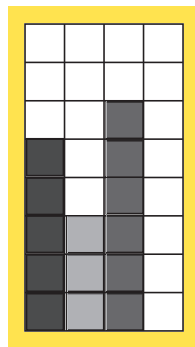
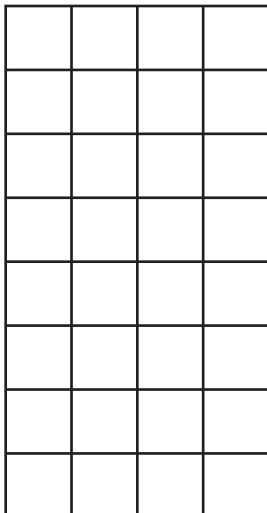
(Check students' work.)

1.

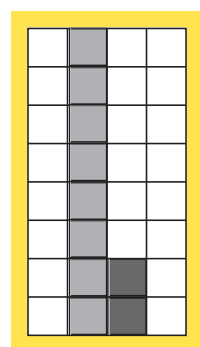
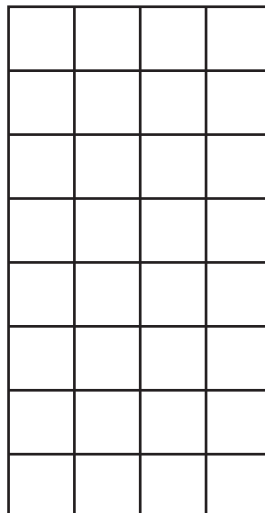


Use Color Tiles. Make each graph. Draw the graph.

2.



3.



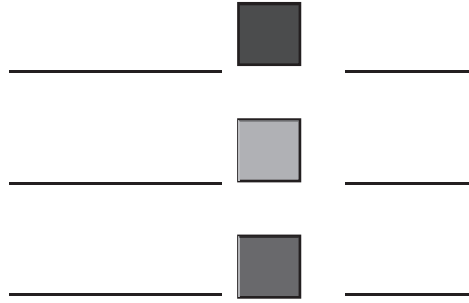
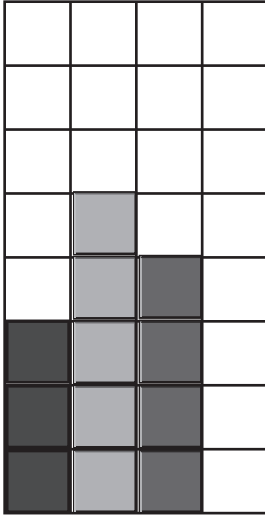
Answer Key

Challenge! If the data for two columns are the same number, what is true about the bars for those columns?

Challenge: (Sample) They are the same height.

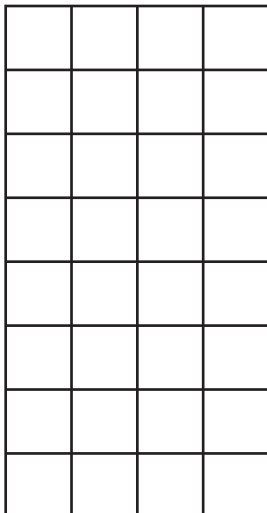
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1.

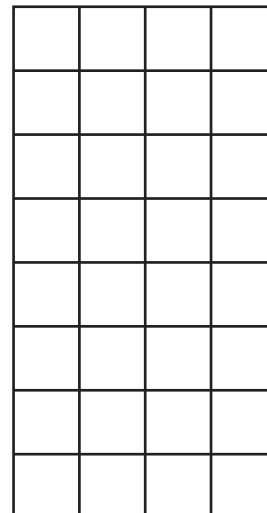


**Use Color Tiles. Make each graph.
Draw the graph.**

2.



3.



Name _____

Challenge! If the data for two columns are the same number, what is true about the bars for those columns?

Name _____

