Lesson 3

Introducing Bar Graphs

NCTM Standards 5, 6, 7, 8, 9, 10
Common Core State Standards 3.MD 3

Lesson Planner

STUDENT OBJECTIVES

- To use the information presented on a scaled bar graph to solve problems
- To solve one- and two-step "how many more" and "how many less" problems

2 Teach and Practice

Ⓐ **Comparing Pictographs** (TG pp. 612–613)

Extended Activity

Ⓑ **Making Bar Graphs** (CCRG pp. CC 15–CC 16)

Ⓒ **Interpreting Bar Graphs** (TG p. 616)

MATERIALS

- TR: Activity Master, AM84
- transparency of AM84 (optional)
- SH p. 122

Lesson Notes

Replace the current Teach and Practice Activity B in **Lesson 8.3** with this extended activity.

About the Lesson

In Activity B, students make a bar graph from survey data and use the information from the graph to solve one- and two-step word problems.

B Making Bar Graphs

whole class 15 MIN

Materials

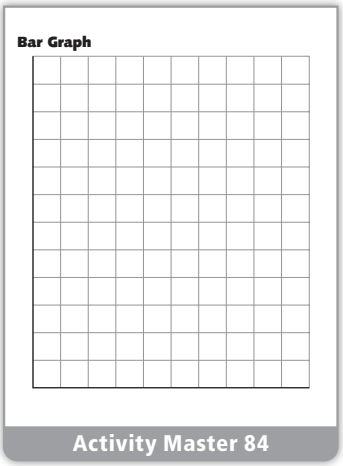
- For the teacher: transparency of AM84 (optional)
- For each student: AM84, survey data from SH p. 122

NCTM Standards 5, 6, 7, 8, 9, 10
CCSS 3.MD 3

Purpose To make a bar graph

Introduce Point out that creating a pictograph for a large amount of data involves drawing many pictures or performing many calculations. Also, a value needs to be selected for a symbol, and each amount needs to be rounded to the nearest multiple of that value. Explain that there is another kind of graph which avoids these difficulties: the bar graph.

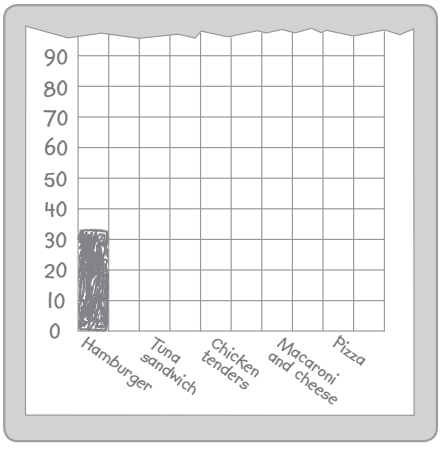
Task **Have students make a bar graph using the survey data from Explore: Different Pictographs, Same Data**. Display (or sketch on the board) Activity Master 84: Bar Graph. Write the five food choices from the Explore along the horizontal axis. Ask students to write the five choices below the horizontal axis on their own copy of Activity Master 84.



Activity Master 84

Explain that you need to choose a *scale* for the vertical axis—in other words, you need to decide how much each space should be worth. Tell students you need to show values up to 72, so it might be best to make each space worth 10. Then show students how to label the vertical axis by beginning at the bottom with 0 and writing multiples of 10 up the side.

Now students are ready to draw the bars representing the responses in each category. Since 33 students chose hamburger or cheeseburger as their favorite lunch, this bar should have a height of 33. Ask a student to show where that would be on your graph (between 30 and 40, but closer to 30).



Have students draw the bar on their graphs. If they seem ready, have them complete their graphs on their own or with a partner. Otherwise, you may want to draw more bars together as a class.

Share When the graphs are complete, ask students to compare the process of making a bar graph with making a pictograph. Ask them to share what was easier and what was more difficult. Students may respond that it was more fun to draw pictures than to shade a bar. They may have found the computation easier on the bar graph and say something such as, "You just have to find the height on the scale, like on a number line. There's no rounding and there's no division."

Talk Math Present some problems to students that involve reading the bar graph such as:

- How many more students chose pizza and chicken tenders than chose macaroni and cheese?

  $72 + 66 = 138$

  $138 - 48 = 90$ more students

- How many fewer students chose a tuna sandwich than chose a hamburger?

  $33 - 24 = 9$ fewer students

Teacher's Notes

Daily Notes . . .

Quick Notes

More Ideas