



Activity 14.15 WHAT IS THE RATIO OF DIAMETER TO CIRCUMFERENCE?



Place circular items such as jar lids, cans, wastebaskets, and even hula hoops at various stations around the room. Explain to students that they will be going to

each station and carefully measuring the diameter and circumference of the shapes and recording their data in a table. Give each group of students a string and a ruler. Model how to measure each attribute: To measure the diameter, stretch the string across the circle, through the center. Since the diameter is the widest segment through a circle, students should look for where the string can be the longest as it is pulled across the circle; to measure the circumference wrap the string once around the object, and then measure the length of string needed to go around exactly once.

After students have been to every station, have them add a column to their table in which they record the ratio of circumference to diameter for each circle.

With graphing calculators, you can have each group enter its measures for diameter (x) and circumference (y) into the TABLE function of a graphing calculator, view the graph, and find the line of best fit.

(Recall from Chapter 11 that graphs of equivalent ratios are always straight lines through the origin.) If measured carefully, the ratio of circumference to diameter will be close to 3.14.



Teaching Tip

Outliers (data that do not result in a ratio close to 3.14) can be examined to see if there was measurement error, focusing student thinking on data (outliers) and measurement (precision)!

From Van de Walle et. al. (2014). *Teaching Student-Centered Mathematics Grades: Developmentally Appropriate Instruction for Grades 6 – 8 (2nd Ed.)*. Toronto: Pearson Education, Inc. (p. 316-317).