LETTER HOME

Equivalent Fractions Using Proportions

Dear Family Member:

In this unit, students focus on the concepts of ratio and proportion. Ratios and proportions are used in everyday life and in the specialized worlds of math, science, art, music, and architecture. Speed, a comparison of distance per time, is a commonly used ratio. Number of miles traveled per gallon of gas is another common ratio. Ratios are found at the grocery store where the price for apples may be 1 pound for 89¢. Proportional thinking is used when doubling or tripling a recipe or when figuring out prices in a foreign currency. In mathematics, understanding proportions is necessary for understanding concepts in algebra and geometry.

The unit begins with ratios in students' own lives and proceeds to an examination of the use of proportional reasoning in science. Students explore why some objects sink and others float in water.

Students will also discover a special ratio in mathematics—π (pronounced pie). π arises out of the natural world. It is found by dividing the circumference of a circle (the distance around the outside) by its diameter (the distance across the circle through

Students find the ratio of an object's mass to its volume to help understand why objects sink and float.

the center). For any size circle, the result of this division is always π—a little more than 3. Thus, the distance required to go around a circle is a little more than three times the distance required to go across the circle through the middle. Students will discover this relationship in a laboratory investigation where they measure, graph, and analyze the circumference and diameter of different-sized round cans or lids.

You can help your child at home by:

- **Finding ratios.** Point out comparisons made with ratios whenever they occur. Some places to look are the miles per gallon ratings for cars, the exchange rates for currencies, and the prices for groceries.
- **Adjusting a recipe.** Ask your child to help you adjust a recipe to serve more people when you are cooking.
- **Looking for Designs.** Many designs in tiles and wall coverings include circles. Talk together about the geometry of the designs. Ask your child to show you the circumference, diameter, and radius of these circles.
- **Showing "About 3."** Ask your child to demonstrate the relationship between the circumference and diameter of a circle. Provide a can or lid and some string to help in the demonstration.
- **Collecting Circles.** We will need cans and plastic, circular lids of various sizes to complete the laboratory investigation in class. Please send any unneeded cans or lids to school with your child.

Sincerely,