Dear Family,

In this chapter, your student will learn about direct and inverse proportions. Some of the skills your student will practice are:

- identifying direct and inverse proportion from a table, equation, or graph
- solving real-world direct and inverse proportion problems
- using graphs to interpret direct and inverse proportion

Activity

Solving direct proportion problems is a skill that students will use in many math and science classes as well as in real life. You can help your student develop this skill with the following activity.

- Collect some food packages that have nutritional information printed on them. Record the size of one serving of each type of food and the number of calories in it in a table.

<table>
<thead>
<tr>
<th>Food</th>
<th>Serving size</th>
<th>Calories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dried cranberries</td>
<td>40 g</td>
<td>130 cal</td>
</tr>
<tr>
<td>Crackers</td>
<td>16 g</td>
<td>70 cal</td>
</tr>
</tbody>
</table>

- With your student, use proportions to find the size of a 100-calorie serving. You can use an equation: \[ \frac{40 \text{ g}}{130 \text{ cal}} = \frac{x \text{ g}}{100 \text{ cal}} \]; or you can find the constant of proportionality first: \[ \frac{40 \text{ g}}{130 \text{ cal}} = 0.31 \].

- Find the size of 100-calorie servings for some of the other foods. Which has the most calories per gram? Which has the least?

Vocabulary to Practice

A proportion is an equation that says that two ratios are equivalent.

If two values \( x \) and \( y \) satisfy the equation \( \frac{y}{x} = k \), and \( k \) is a constant, then \( y \) is directly proportional to \( x \). The number \( k \) is the constant of proportionality.

If two numbers \( x \) and \( y \) are related by the equation \( xy = k \), and \( k \) is a constant, then \( x \) and \( y \) are inversely proportional.

Online Resources

For additional Parent Resources my.hrw.com