

## KEY CONCEPT OVERVIEW

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In Topic C, students will extend their knowledge of rate as they focus on **unit rate**. They will solve real-world word problems involving unit pricing, constant speed, and constant rates of work. Students will also learn to convert units of measurement (ounces to pounds or feet to inches) in order to make comparisons. Last, they will use their understanding of unit rates and conversions to interpret and model real-world scenarios.

You can expect to see homework that asks your child to do the following:

- Determine the unit rate and use it to answer questions, using models from previous topics.
- Convert measurement units using rates.
- Compare rates using tables, equations, and graphs.
- Locate the unit rate using tables, equations, and graphs.
- Create a graph using the unit rate and equivalent ratios.
- Use the equation  $d = rt$  (distance = rate  $\times$  time) to solve problems.

## SAMPLE PROBLEM (From Lesson 20)

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Emilia and Miranda are sisters, and their mother just signed them up for a new cell phone plan because they send too many text messages. Using the information below, determine which sister sends the most text messages. How many more text messages does this sister send per week?

Emilia:

<b>Number of Weeks</b>	<b>3</b>	<b>6</b>	<b>9</b>	<b>12</b>
<b>Number of Text Messages</b>	<b>1,200</b>	<b>2,400</b>	<b>3,600</b>	<b>4,800</b>

Miranda:  $m = 410w$ , where  $w$  represents the number of weeks, and  $m$  represents the number of text messages.

**Emilia:**

$$\frac{2400 - 1200}{6 - 3} = \frac{1200}{3}$$

$$= 400$$

**Miranda:**

$$m = 410w$$

**Miranda sends 410 text messages per week.**

**Emilia sends 400 text messages per week.**

**Miranda sends 10 more text messages per week than Emilia.**

Additional sample problems with detailed answer steps are found in the *Eureka Math Homework Helpers* books. Learn more at [GreatMinds.org](http://GreatMinds.org).

## HOW YOU CAN HELP AT HOME

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You can help your child at home in many ways. Here are just a few tips to help you get started:

- With the help of your vehicle's odometer (which measures distance) and a clock, challenge your child to calculate the rate (distance divided by time) of a trip. For example, if you traveled 6 miles in 15 minutes, you traveled at a rate of 0.4 mile per minute ( $6 \text{ miles} \div 15 \text{ minutes}$ ). Then, ask your child to calculate the rate of another trip and compare the two rates. Are the rates the same? If not, discuss reasons that the rates are different from one another.
- Write a journal entry, draw a comic strip, or write song lyrics with your child to explain where the unit rate can be located in tables, graphs, and equations.
- As a family, set a timer and do as many jumping jacks as you can in two minutes. Ask each person to keep track of how many jumping jacks are completed during that time. With your child, calculate each family member's rate. Instead of jumping jacks, try hopping on one or both feet, doing squats, or any other activity you can time. (It doesn't need to be a physical activity!) For an added math challenge, consider assigning each family member a different amount of time. Be creative and have fun!

## TERMS

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**Unit rate:** The numerical part of a rate measurement; for example, in the rate 45 mph, the unit rate is 45.