

Lesson 4-1

<i>rate</i>	Decode
Definition a ratio that compares two quantities	Example $\frac{\$150}{15 \text{ hrs.}}$

<i>unit rate</i>	Decode
Definition a denominator of 1	Example $\frac{\$10}{1 \text{ hr.}}$

Example 1: Finding Unit Rates

I Do	We Do
Jason types <u>22 words</u> in <u>half a minute</u> . How many words can he type per <u>minute</u> ?	Dakoda makes \$48 after working for 3 hours. How much did she make per <u>hour</u> ?
$\frac{22 \text{ words} \cdot 2}{0.5 \text{ min.}}$ <div style="border: 1px solid black; padding: 5px; display: inline-block;"> $\frac{44 \text{ words}}{1 \text{ min.}}$ </div>	$\frac{\$48}{3 \text{ hrs.}} \div 3$ <div style="border: 1px solid black; padding: 5px; display: inline-block;"> $\frac{\\$16}{1 \text{ hr.}}$ </div>

Example 2: A driver is competing in a 500-mile auto race:

We Do	You Do
<p>In the first 2 hours of the race, the driver travels 356 miles. What is the driver's average speed?</p> $\frac{356 \text{ miles}}{2 \text{ hrs.}} \div 2$ $\frac{178 \text{ miles}}{1 \text{ hr.}}$ <p>or</p> 178 mph	<p>The driver estimates that he will finish the race in less than 3 hours. If the driver keeps traveling at the same average speed, is his estimate reasonable?</p> $\frac{178 \text{ miles} \cdot 3}{1 \text{ hr.} \cdot 3} = \frac{534 \text{ miles}}{3 \text{ hrs.}}$ <p>yes</p>

Example 4: Using Unit Rates to Compare Items

I Do	We Do
<p>Sarah can buy a 16 oz box of cereal for \$5.49 or a 20 oz box of cereal for \$5.99. Which is the better buy?</p> $\frac{\$5.49}{16 \text{ oz.}} \div 16 = \frac{\$0.34}{1 \text{ oz.}}$ $\frac{\$5.99}{20 \text{ oz.}} \div 20 = \frac{\$0.29}{1 \text{ oz.}}$ <p>20oz.</p>	<p>Shea can buy a 15 oz jar of peanut butter for \$2.19 or a 20 oz jar for \$2.78. Which is the better buy?</p> $\frac{\$2.19}{15 \text{ oz.}} \div 15 = \frac{\$0.15}{1 \text{ oz.}}$ $\frac{\$2.78}{20 \text{ oz.}} \div 20 = \frac{\$0.14}{1 \text{ oz.}}$ <p>20oz.</p>