

## Core Content

<b>Cluster Title: Understand ratio concepts and use ratio reasoning to solve problems.</b>
<b>Standard 2:</b> Understand the concept of a unit rate $a/b$ associated with a ratio $a:b$ with $b \neq 0$ , and use rate language in the context of a ratio relationship. For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $3/4$ cup of flour for each cup of sugar." "We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger."
<b>MASTERY Patterns of Reasoning:</b>
<b>Conceptual:</b> Understand that a rate is a special ratio that compares two quantities with different units of measure. Understand that unit rates are the ratio of two measurements in which the second term is one (e.g., x miles per one hour). Understand that when using rates $\frac{a}{b}$ , " $b$ " cannot be 0 (because division by 0 is undefined).
<b>Procedural:</b> Solve problems involving ratios. Understand rate language (per, each, or the @ symbol).
<b>Representational:</b> Correctly use ratio notation and models to represent relationships between quantities.

## Supports for Teachers

<b>Critical Background Knowledge</b>
<b>Conceptual:</b> Understand ratio concepts from Standard 1 (6.RP.1). Understand the meaning of equivalent ratios.
<b>Procedural:</b> Simplify fractions. Use equivalent ratios to solve problems.
<b>Representational:</b> Communicate relationships between two quantities using ratio notation.

<b>Academic Vocabulary and Notation</b>	
@, each, equivalent ratio, rate, ratio, unit rate, per	
<b>Instructional Strategies Used</b>	<b>Resources Used</b>
<ol style="list-style-type: none"> <li>Show examples of rates: 300 miles on 10 gallons of gas, \$15 for 5 ounces, \$30 for 6 hours.</li> <li>Connect rates from number 1 with their unit rates: 30 miles per gallons, \$3 per 1 ounce, \$5 per 1 hour.</li> <li>Convert rates from fraction form to written form using per, each, or @. Example <math>\frac{300 \text{ miles}}{10 \text{ gallons of gas}} = 30 \text{ miles per gallon of gas}</math>.</li> <li>Quick write: Students brainstorm examples of unit rates in the real world (e.g., 4 candy bars per \$1, 55 miles per hour, 6 points per touchdown).</li> </ol>	UEN- Lesson "Ratio, Rate, and Proportion"  Activities 1 and 2 from <a href="http://mypages.iit.edu/~smart/dvorber/lesson3.htm">http://mypages.iit.edu/~smart/dvorber/lesson3.htm</a>
<b>Assessment Tasks Used</b>	
<b>Skill-based Task:</b> Identify (given examples) the difference between a ratio and a rate.	<b>Problem Task:</b> Is the following example a ratio or rate? [60 heartbeats per minute] Explain your answer.