

# Grade 7 Standards Parent Resource

## **Unit 1: Ratios and Proportional Relationships**

Unit 1 includes 2 topics of study, listed below. This resource is for Topic 1.

### Topic 1

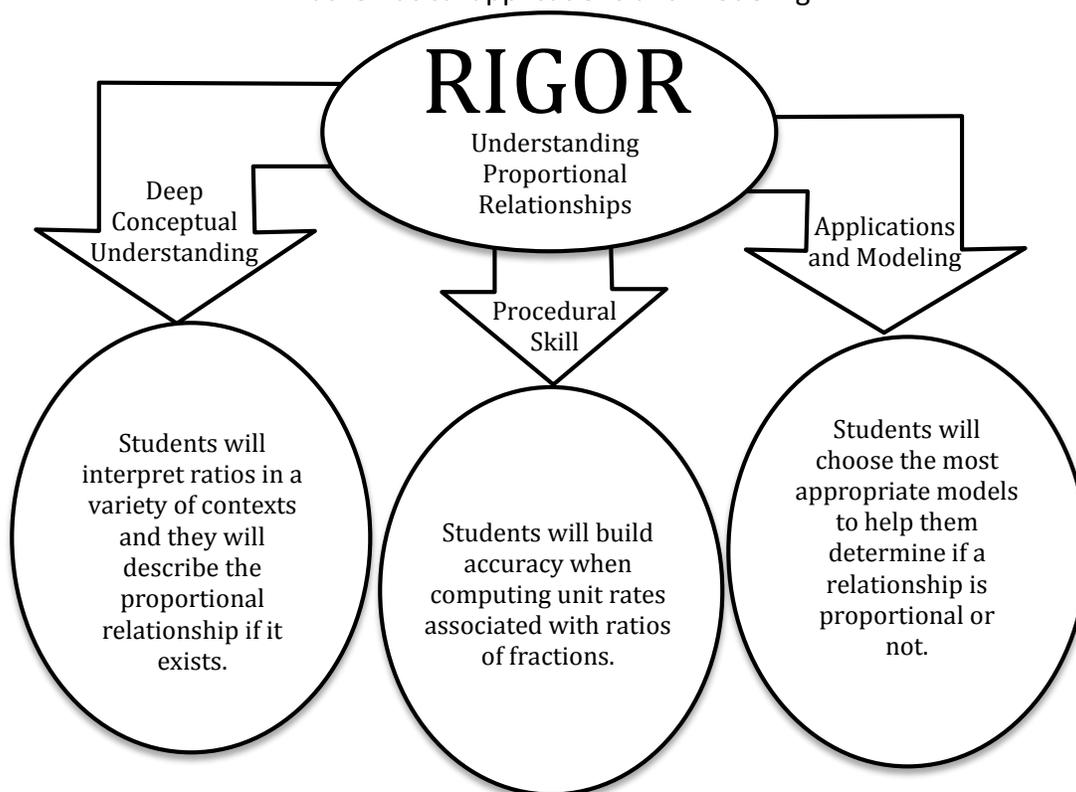
### Topic 2

### **Understanding Proportional Relationships**

### *Application of Proportional Relationships*

Topic	<p style="text-align: center;"><b>Learning Goals by <u>Common Core State Standard</u></b> <i>Students will be able to...</i></p>
<b>Understanding Proportional Relationships</b>	<ul style="list-style-type: none"> <li>Reason about and compute <a href="#">unit rates</a> associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units.</li> <li>Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in <a href="#">a table</a> or <a href="#">graphing on a coordinate plane</a> and observing if the graph is a straight line through the origin.</li> <li>Identify the constant of proportionality (unit rate) in tables, graphs, <a href="#">equations</a>, diagrams, and verbal descriptions of proportional relationships.</li> <li>Represent proportional relationships by <a href="#">equations</a>.</li> <li><a href="#">Explain what a point (x, y) on the graph</a> of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate.</li> </ul> <p style="text-align: center; font-style: italic; font-size: small;">Instructional videos in the hyperlinks above are meant to support C2.0 content, but may use vocabulary or strategies not emphasized by MCPS.</p>

The Common Core State Standards require a balance of three fundamental components that result in rigorous mathematics acquisition: deep conceptual understanding, procedural skill, and mathematical applications and modeling.



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Unit 1: Ratios and Proportional Relationships    Topic 1: Understanding Proportional Relationships

## Learning Experiences by Common Core State Standard



In school, your child will...

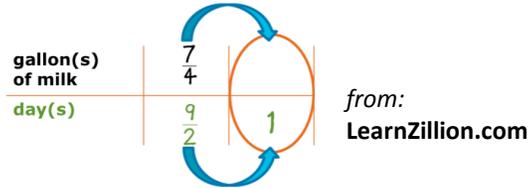


At home, your child can...

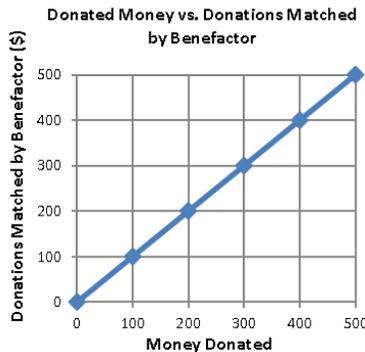
Topic 1: Understanding Proportional Relationships

- Reason about and compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units.

How many gallons of milk per day are needed?



- Decide whether two quantities are in a proportional relationship.
  - How can you determine if the number of gallons needed is proportional to the number of days?
- Represent proportional relationships by equations.
- Explain what a point  $(x, y)$  on the graph of a proportional relationship means in terms of the situation.



from: engageNY

- Explain how the graph shows or does not show the two quantities being proportional to each other.
- What does the ordered pair  $(0, 0)$  represent in the context of the problem?  $(300, 300)$ ?

- Determine the amount of ingredients needed when modifying recipes.
  - If our recipe calls for  $2\frac{1}{2}$  cup of flour for every  $\frac{3}{4}$  cup of brown sugar, how much flour is needed if we used 1 cup of brown sugar?
- Determine the unit price of an item at the grocery store.
  - If a 32 oz. bottle of Gatorade costs \$0.88, what is the price per ounce?
- Decide whether two quantities are in a proportional relationship.
  - the price of a movie ticket compared to the age of the person
  - the number of hours worked and the amount of money earned

Additional Resources

- [Rate problems using fractions](#) (video tutorial)
- [The Better Buy with Unit Price](#) (video tutorial)
- [Unit prices: which is the better buy?](#)
- [Analyzing proportional relationships in a graph](#)
- [Analyzing and identifying proportional relationships](#)

Additional Practice links support C2.0 content,  
but may use vocabulary or strategies not emphasized by MCPS.