

Application of Proportional Relationships

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 2.

Topic 1

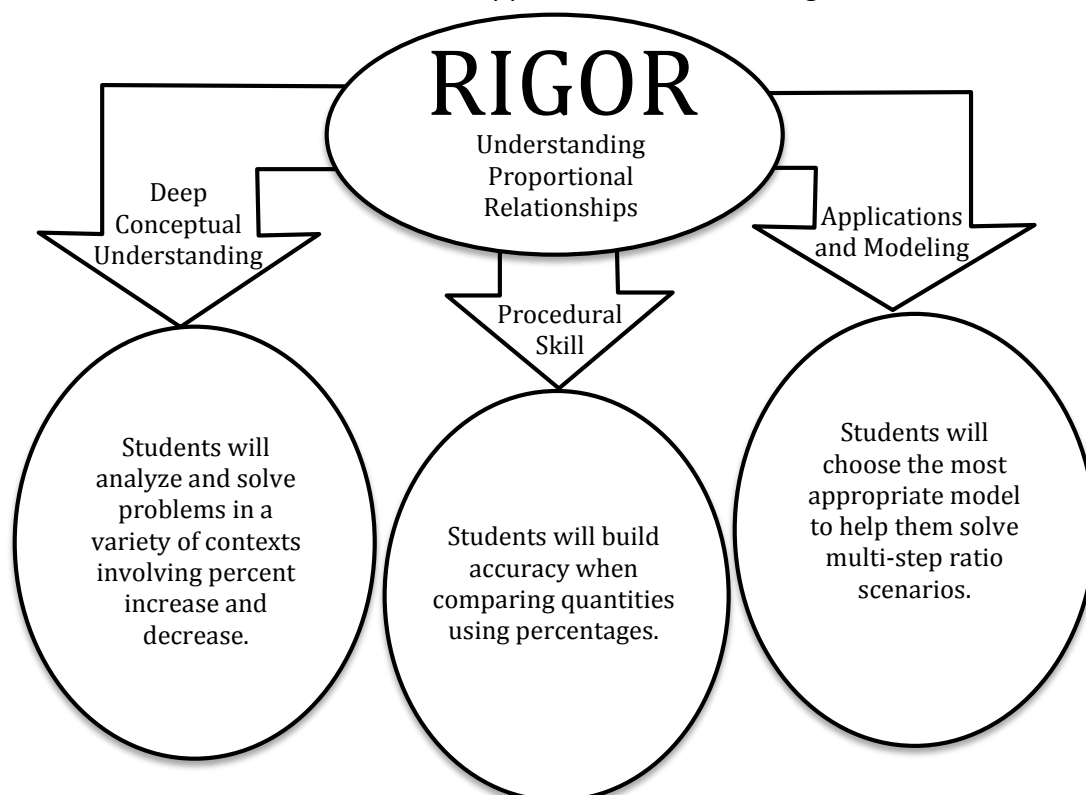
Topic 2

Understanding Proportional Relationships

Application of Proportional Relationships

Topic	Learning Goals by Common Core State Standard <i>Students will be able to...</i>
Application of Proportional Relationships	<ul style="list-style-type: none"> Solve problems involving scale drawings of geometric figures. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. Represent proportional relationships by equations. Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error. Understand that rewriting an expression in different forms in a context can shed light on the problem and how the quantities in it are related. <p><i>Instructional videos in the hyperlinks above are meant to support C2.0 content, but may use vocabulary or strategies not emphasized by MCPS.</i></p>

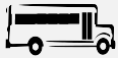
The Common Core State Standards require a balance of three fundamental components that result in rigorous mathematics acquisition: deep conceptual understanding, procedural skill, and mathematical applications and modeling.



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Unit 1: Ratios and Proportional Relationships Topic 2: Application of Proportional Relationships

Learning Experiences by Common Core State Standard



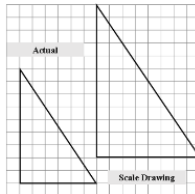
In school, your child will...



At home, your child can...

Topic 1: Understanding Proportional Relationships

- Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.



- Represent proportional relationships by equations.
 - $(0.12)s = 6$ and $\frac{12}{100} = \frac{6}{s}$, where s represents the total number of students.
- Use proportional relationships to solve multistep ratio and percent problems.

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- Understand that rewriting an expression in different forms in context can shed light on the scenario and how the quantities in it are related.
 - 15% gratuity on a \$30 meal.
 - $0.15 \times 30 = g$, where g is the amount of the gratuity
 - $30(1 + 0.15) = t$, where t is the total amount (meal and gratuity)

- Interpret the scale on a map when planning an upcoming trip. Use the given scale to estimate the distance of your trip.
 - If the trail we want to hike is 2 inches on the map, how can we use the scale to determine the length of the trail in miles?
- Determine the amount of tax that will be due when grocery shopping.
 - If the subtotal of the grocery bill for the week is \$150.62, and MD State sales tax is 6%, what is the total bill?
- Determine the amount of a posted discount and calculate the new price.
- Determine the final price of an item after applying a given discount and sales tax.
- Determine the gratuity amount when eating out.

Additional Resources

- [Solve ratio and percent problems using bar models](#) (video tutorial)
- [Find the percent of decrease: using a proportion](#) (video tutorial)
- [Find the percent of increase: using a proportion](#) (video tutorial)
- [Calculate percent increase and decrease in context](#) (video tutorial)
- [Simple Interest Game](#) (game)
- [Math at the Mall: A real world math adventure game](#) (game)
- [Should I buy the BIG one?](#)
- [Cheesy Goldfish crackers](#)
- [Grade 7 Standards Unit 1 Topic 2 Application of Proportional Relationships](#) (flexbook)

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