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.

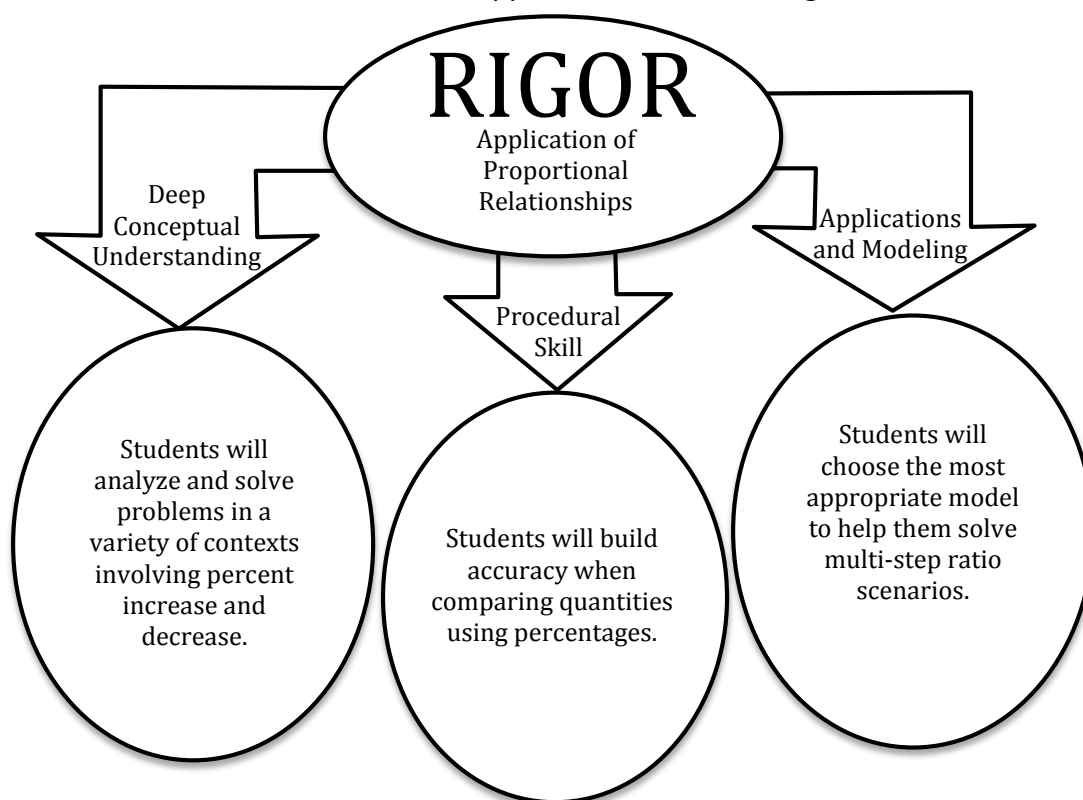| Topic 1	Topic 2
Understanding Proportional Relationships	***Application of Proportional Relationships***

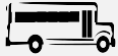| Topic	**Learning Goals by Common Core State Standard** *Students will be able to...*
Application of Proportional Relationships	• Solve problems involving scale drawings of geometric figures. • Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions 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. *Instructional videos in the hyperlinks above are meant to support C2.0 content, but may use vocabulary or strategies not emphasized by MCPS.*

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.

RIGOR
Application of Proportional Relationships

Deep Conceptual Understanding

Procedural Skill

Applications and Modeling

Students will analyze and solve problems in a variety of contexts involving percent increase and decrease.

Students will build accuracy when comparing quantities using percentages.

Students will choose the most appropriate model to help them solve multi-step ratio scenarios.

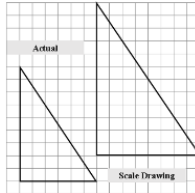## Learning Experiences by Common Core State Standard

In school, your child will…

At home, your child can…

Topic 2: Application of 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.

  Actual

  Scale Drawing

- Represent proportional relationships by equations.
  - $(0.12)s = 6$ and $\dfrac{12}{100} = \dfrac{6}{s}$, where *s* represents the total number of students.

- Use proportional relationships to solve multistep ratio and percent problems.

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  $29.99

  Wincraft
  12x30in Pennant
  $8.99

  from Lids.com

- 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 x 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.