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| **Grade Level: 7 Chapter 1: Ratios and Proportional RelationshipsDays : 16**  |
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| **Mathematical Practices** |  |
| 1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
 | 1. Use appropriate tools strategically.
2. Attend to precision.
3. Look for and make use of structure.
4. Look for and express regularity in repeated reasoning.
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|  | **ESSENTIALUNDERSTANDING** | **MISSOURI LEARNING STANDARD** | **MATH PRACTICE(S)** | **STANDARDS AND LEARNING INTENTIONS** | **RESOURCES** | **ACADEMIC VOCABULARY** |
|  **How can you show that two objects are proportional?** | **Analyze proportional relationships and use them to solve real-world and mathematical problems.**How do I use dimensional analysis? | 7.RP.A.1 | MP 1,5 | Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. | Chapter 1 Lesson 1Chapter 1 Lesson 2Chapter 1 Lesson 3 | **Complex Fraction** |
| **Analyze proportional relationships and use them to solve real-world and mathematical problems.**What makes two quantities proportional? | 7.RP.A.2 | MP 3,7 | Recognize and represent proportional relationships between quantities. | Chapter 1 Lesson 4Chapter 1 Lesson 5Chapter 1 Lesson 6Chapter 1 Lesson 7Chapter 1 Lesson 8Chapter 1 Lesson 9 | **Proportional** **Rate of Change****Constant of Proportionality** |
| **How can you show that two objects are proportional?** | **Analyze proportional relationships and use them to solve real-world and mathematical problems.**How does graphing relationships help you determine whether the relationship is proportional or not? | 7.RP.A.2a | MP 2,3 | Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. | Chapter 1 Lesson 4Chapter 1 Lesson 5Chapter 1 Lesson 9 | **Proportional****Constant of Proportionality** |
| **Analyze proportional relationships and use them to solve real-world and mathematical problems.**How is a unit rate a measure of one quantity per unit of another quantity? | 7.RP.A.2b | MP 3,4 | Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. | Chapter 1 Lesson 4Chapter 1 Lesson 6Chapter 1 Lesson 7Chapter 1 Lesson 8Chapter 1 Lesson 9 | **Proportional****Rate of Change****Constant of Proportionality** |
| **Analyze proportional relationships and use them to solve real-world and mathematical problems.**How do you find the constant of proportionality? | 7.RP.A.2c | MP 1,2 | Represent proportional relationships by equations. | Chapter 1 Lesson 6 | **Constant of Proportionality** |
| **How can you show that two objects are proportional?** | **Analyze proportional relationships and use them to solve real-world and mathematical problems.**How can you find the unit rate from a line on a graph that goes through the origin? | 7.RP.A.2d | MP 2,7 | Explain what a point (*x*, *y*) on the graph 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. | Chapter 1 Lesson 7 | **Rate of Change** |
| **Analyze proportional relationships and use them to solve real-world and mathematical problems.**How do you convert pounds per gallon to kilograms per liter? | 7.RP.A.3 | MP 1,4 | Use proportional relationships to solve multistep ratio and percent problems.  | Chapter 1 Lesson 3Chapter 1 Lesson 6 | **Constant of Proportionality** |