<table>
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<th>UNIT OF STUDY</th>
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<tr>
<td><strong>Title:</strong> Unit 7</td>
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<td><strong>Topic:</strong> Ratios/Proportions/Pythagorean Theorem</td>
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**UNIT GOALS AND EXPECTATIONS**

**IMPORTANT CONCEPTS/UNDERSTANDINGS:**
- Use proportions to solve problems
- Find geometric means
- Solve problems using Pythagorean Theorem

**ESSENTIAL QUESTIONS:**
- What is a ratio?
- What is a proportion?
- What is a geometric mean?
- What is the Pythagorean Theorem?

**STUDENT LEARNING EXPECTATIONS:**
- M.3.G.4 Use (given similar geometric objects) proportional reasoning to solve practical problems (including scale drawings)
- T.2.G.4 Apply the Pythagorean Theorem and its converse in solving practical problems

**SPECIFIC DECLARATIVE KNOWLEDGE – What I know**
- Vocabulary: ratio, legs, hypotenuse, proportion, geometric mean, Pythagorean theorem, radical form, scale drawing, cross product, equivalent
- Identify properties of similar figures

**SPECIFIC PROCEDURAL KNOWLEDGE – What I need to do**
- Use number line to find indicated ratio
- Write given ratio in simplest form
- Solve proportions
- Determine if figures are similar by setting up and solving proportions
- Use proportions to solve real world problems
- Find the geometric mean of two numbers
- Use scale drawings to solve real world problems through proportional reasoning
- Use Pythagorean theorem to solve word problems and write answers in decimal and radical form

**UNIT ASSESSMENTS**
(Include tasks related to Dimensions 3 and 4 and Bloom’s Taxonomy)
- Open Response Unit 7 question 1 proportions (election)
- Open Response Unit 7 question 2 Pythagorean Theorem (horse trail)
- Simplifying ratios with uncommon units and solving proportions Quiz
- Unit 7 Test
- TLI module test
- Vocabulary Quiz
- Homework
- Class work

**ACTIVITIES AND LEARNING EXPERIENCES**
- Introduce vocabulary using 4-step strategy

**Resources**
- Mastery Math Notebook
- Review units of time and distance by student questioning
- Small group work to solve proportions and decide which information is needed
- Model Pythagorean Theorem using pictures and word problems

**Career Connections**
Carpenter, Aerial Photographer, Chef, Rock Climbing, Architecture