

Grade 6 Mathematics – Unit 3: Ratios and Percent

Phoenixville Area School District

Stage 1 Desired Results

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| <p>PA Core Standards: M06.A-R.1.1 Represent and/or solve real- world and mathematical problems using rates, ratios, and/or percent.</p> <p>PSSA Assessment Anchors: M06.A-R.1 Understand ratio concepts and use ratio reasoning to solve problems.</p> | Transfer | |
| | <p>TRANSFER GOALS <i>Students will be able to independently use their learning to...</i></p> <ul style="list-style-type: none"> • <i>Problem-Solving:</i> Persistently apply various problem-solving strategies and organized approaches to accurately understand and solve problems and provide evidence to support response. • <i>Mathematical Vocabulary:</i> Interpret mathematical vocabulary and apply proper terminology to engage in meaningful oral and written expression that communicates mathematical thinking, problem-solving methods, and rationale. • <i>Reasoning:</i> Demonstrate mathematical resilience and conceptual understanding through the use of vocabulary, written expression, graphical representation, and alternate strategies. | |
| | Meaning | |
| | <p>UNDERSTANDINGS <i>Students will understand that...</i></p> <ul style="list-style-type: none"> • The most appropriate way to solve a problem or represent a quantity depends on the situation, calculations may be done using; mental math or paper and pencil calculations using a variety of mathematically sound algorithms. • Mathematicians flexibly use symbols, numbers, words, and visual representations while maintaining the integrity of the relationship between quantities. | <p>ESSENTIAL QUESTIONS <i>Students will keep considering...</i></p> <ul style="list-style-type: none"> • How do figures/quantities/numbers/ operations relate to one another? • What does this quantity/number/ expression/value mean? What are the ways to represent it? Is there a best way? |
| Knowledge and Skills Acquisition | | |
| <p>KNOWLEDGE <i>Students will know...</i></p> <ul style="list-style-type: none"> • Ratio language and notation (such as 3 to 4, 3:4, 3/4) • The unit rate a/b associated with a ratio $a:b$ (with $b \neq 0$) • The format of tables of equivalent ratios relating quantities with whole-number measurements • Apply unit rate and constant speed concepts • Percentages of numbers | <p>SKILLS <i>Students will be skilled at...</i></p> <ul style="list-style-type: none"> • Describing a ratio relationship between two quantities when given the notation. • Using rate language in the context of a ratio relationship. • Constructing and finding missing values in the tables, and/or plotting the pairs of values on the coordinate plane. | |

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| | <p>VOCABULARY</p> <ul style="list-style-type: none"> • Proportion • Proportional Relationship • Rate • Ratio • Unit Rate | <ul style="list-style-type: none"> • Using tables to compare ratios that follow a specific measurement. • Solving unit rate multiple step problems including those involving unit pricing and constant speed. • Calculating the percent of a quantity in a real-world problem. • Solving word problems that involve finding the whole given a part and the percentage. |
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Stage 2 – Evidence

| Code A/M/T | Evaluative Criteria | Assessment Evidence | |
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| <p>A/M/T</p> <p>Acquisition</p> <p>Meaning Making</p> <p>Transfer</p> | <p><i>What criteria will be used in each assessment to evaluate attainment of the desired results?</i></p> | <p>PERFORMANCE TASK(S)</p> <p><i>Students will demonstrate understanding (meaning making and transfer) through complex performance by...</i></p> <p>Snail Pace</p> <p>This task requires the student to show an understanding of rates and proportional relationships between speed and time.</p> <ul style="list-style-type: none"> • Goal: Your task is to find which of the four snails is the fastest by solving for the unit rate in order to make a comparison. • Role/Audience: You work at an environmental center. • Situation/Product: You will use the data provided and convert to a common unit rate of speed and time. • Success Criteria: Your solution must include the common unit rate for each snail and explanation of the strategy used. | <p>Differentiation Considerations:</p> <p>Modifications are made for ESL and support students.</p> <p>The performance task can be read to the students with special needs. Use of a highlighter is recommended.</p> |
| <p>A/M/T</p> <p>Acquisition</p> <p>Meaning Making</p> <p>Transfer</p> | <p><i>What criteria will be used in each assessment to evaluate attainment of the desired results?</i></p> | <p>OTHER EVIDENCE</p> <p>[Unit Test]</p> <ul style="list-style-type: none"> • [Multiple Choice] • Explain why or why not you would be able to compare 7 feet and 15 inches. • How is a fraction represented as a percent? • What causes a decimal to become a percent? • What strategy do you use to find the percent of a quantity? | <p>Differentiation Considerations:</p> <p>Modifications are made for ESL and support students. Questions testing similar skills are modified. Work needs to be shown. Advanced students can write high level sentences utilizing math vocabulary and include examples when responding to the written responses. Partial credit is provided to students that demonstrate steps even if their answer is not correct. The assessment can be read to students. Encouragement is given to highlight certain instructions.</p> |

