

CONTENT Standards	PRACTICE Standards
<p>PRIMARY FOCUS OF UNIT: Ratios and Proportional Relationships Critical Area 1</p> <p>CLUSTER 1: Understand ratio concepts and use ratio reasoning to solve problems.</p> <p>1. Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. <i>For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."</i></p> <p>2. Understand the concept of a unit rate a/b associated with a ratio $a:b$ with $b \neq 0$, and use rate language in the context of a ratio relationship. <i>For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $3/4$ cup of flour for each cup of sugar." "We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger." (Expectations for unit rates in this grade are limited to non-complex fractions.)</i></p> <p>3. Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.</p> <p>a. Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.</p> <p>b. Solve unit rate problems including those involving unit pricing and constant speed. <i>For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?</i></p> <p>CONNECTING FOCUS: Expressions & Equations (This is NOT a new unit. Teach the concepts as they relate to Ratios and Proportional Relationships.) Critical Area 3</p> <p>CLUSTER 6: Reason about and solve one-variable equations and inequalities.</p> <p>6. Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. Represent and analyze quantitative relationships between dependent and independent variables.</p> <p>CLUSTER 9: Represent and analyze quantitative relationships between dependent and independent variables.</p> <p>9. Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. <i>For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time.</i></p> <p>CONNECTING FOCUS: The Number System (This is NOT a new unit. Teach the concepts as they relate to Ratios and Proportional Relationships.) Critical Area 2</p> <p>CLUSTER 3: Compute fluently with multi-digit numbers and find common factors and multiples.</p> <p>4. Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. <i>For example, express $36 + 8$ as $4(9 + 2)$.</i></p>	<p>1. Make sense of problems and persevere in solving them.</p> <p>2. Reason abstractly and quantitatively.</p> <p>3. Construct viable arguments and critique the reasoning of others.</p> <p>4. Model with mathematics.</p> <p>5. Use appropriate tools strategically.</p> <p>6. Attend to precision.</p> <p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated reasoning.</p> <p>Teacher Resources</p> <p>1) JSD Conceptual Foundations & Teacher Resource Libraries</p> <ul style="list-style-type: none"> ★ Ratio and Proportional Relationships (cluster 1) ★ The Number System (cluster 3) ★ Expressions & Equations (clusters 4 and 5) <p>2) Granite Vocabulary Cards</p> <p>3) USOE Common Core Curriculum Guides</p> <p>Math Expressions TEXT</p> <p>UNIT 1</p>
<p>Potential Vocabulary: column, row, factors, multiple, rate table, unit rate, ratio, rate, constant rate, every, each, per, unit price, coordinate plane, x-axis, y-axis, ordered pair, coordinates, x-coordinate, y-coordinate, speed, distance, time, equivalent ratios, proportion, greatest common factor, scale</p>	
<p>Recommended Formative Assessment: After providing instruction and multiple exposure to learning opportunities for this content, use the Unit 1 assessment as a <i>formative</i> guide to determining which students are on a learning trajectory for proficiency and which students need additional time and support to learn the content and meaningfully engage in practice standards.</p>	

CONTENT Standards	PRACTICE Standards
<p>PRIMARY FOCUS OF UNIT: Geometry</p> <p>CLUSTER 8: Solve real-world and mathematical problems involving area, surface area, and volume.</p> <p>1. Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.</p> <p>3. Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.</p> <p>CONNECTING FOCUS: Expressions & Equations (This is NOT a new unit. Teach the concepts as they relate to Geometry.) Critical Area 3</p> <p>CLUSTER 5: Apply and extend previous understandings of arithmetic to algebraic expressions.</p> <p>2. Write, read, and evaluate expressions in which letters stand for numbers.</p> <p>c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). <i>For example, use the formulas $V = s^3$ and $A = 6s^2$ to find the volume and surface area of a cube with sides of length $s = 1/2$.</i></p> <p>3. Apply the properties of operations to generate equivalent expressions. <i>For example, apply the distributive property to the expression $3(2 + x)$ to produce the equivalent expression $6 + 3x$; apply the distributive property to the expression $24x + 18y$ to produce the equivalent expression $6(4x + 3y)$; apply properties of operations to $y + y + y$ to produce the equivalent expression $3y$.</i></p> <p>4. Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). <i>For example, the expressions $y + y + y$ and $3y$ are equivalent because they name the same number regardless of which number y stands for.</i></p> <p>CLUSTER 6: Reason about and solve one-variable equations and inequalities.</p> <p>6. Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.</p>	<p>1. Make sense of problems and persevere in solving them.</p> <p>2. Reason abstractly and quantitatively.</p> <p>3. Construct viable arguments and critique the reasoning of others.</p> <p>4. Model with mathematics.</p> <p>5. Use appropriate tools strategically.</p> <p>6. Attend to precision.</p> <p>7. Look for and make use of structure.</p> <p>8. Look for and express regularity in repeated reasoning.</p> <hr/> <p style="text-align: center;">Teacher Resources</p> <p>1) JSD Conceptual Foundations & Teacher Resource Libraries</p> <ul style="list-style-type: none"> ★ Geometry (cluster 8) ★ Expressions & Equations (clusters 5-6) <p>2) Granite Vocabulary Cards</p> <p>3) USOE Common Core Curriculum Guides</p> <hr/> <p style="text-align: center;">Math Expressions</p> <p>UNIT 2</p>
<p>Potential Vocabulary: perimeter, area, square unit, base, height, square inch (in.²), square foot (ft²), square centimeter (cm²), square unit (u²), right triangle, perpendicular, height, base, related rectangle, right angle, parallelogram, rhombus, acute triangle, obtuse triangle, vertex, dimensions, trapezoid, complex figures, pentagon, hexagon, octagon, polygon, regular polygon, tessellations, inverse operations, quadrilateral, rectangle, altitude, expression, Order of Operations, two-dimensional</p>	
<p>Recommended Formative Assessment: After providing instruction and multiple exposure to learning opportunities for this content, use the Unit 2 assessment as a <i>formative</i> guide to determining which students are on a learning trajectory for proficiency and which students need additional time and support to learn the content and meaningfully engage in practice standards.</p>	