

Reporting Categories	Needs Support	Close	Ready	Exceeding
<b>Ratios &amp; Proportional Relationships</b> Focus is on proportional relationships of quantities that vary together.	<i>A student performing at the Needs Support level:</i> <ul style="list-style-type: none"> <li>recognizes that proportional relationships are relationships between two equal ratios.</li> <li>makes sense of problems to compare two quantities.</li> <li>uses calculators appropriately when comparing ratios.</li> </ul>	<i>A student performing at the Close level:</i> <ul style="list-style-type: none"> <li>solves simple problems in context, given the equation of the proportional relationship that models the situation.</li> <li>makes sense of problems and perseveres in solving proportions accurately.</li> </ul>	<i>A student performing at the Ready level:</i> <ul style="list-style-type: none"> <li>solves multi-step problems in contexts that require creating an equation to model the situation, including those involving proportions, ratios, and percentages.</li> <li>uses the structure of ratios and proportions to calculate percentages.</li> <li>makes sense of problems and perseveres in solving multistep problems.</li> </ul>	<i>A student performing at the Exceeding level:</i> <ul style="list-style-type: none"> <li>uses proportional relationships to solve problems, including those involving rates, discounts, and finding percentages.</li> <li>makes sense of quantities and their relationships.</li> <li>gives results to the required level of precision.</li> <li>applies the structure of proportions to rates, percentages, and discounts.</li> </ul>
<b>The Number System</b> Focus is on completing the rational number system by extending the basic operations, and using this system to solve problems.	<i>A student performing at the Needs Support level:</i> <ul style="list-style-type: none"> <li>identifies even and odd integers.</li> <li>uses a number line to model negative and positive numbers.</li> </ul>	<i>A student performing at the Close level:</i> <ul style="list-style-type: none"> <li>describes real-world situations that involve positive and negative rational quantities.</li> <li>makes sense of a math concept in the real world.</li> </ul>	<i>A student performing at the Ready level:</i> <ul style="list-style-type: none"> <li>recognizes the set of integers as the whole numbers and their opposites, and for which opposite quantities combine by addition to make 0.</li> <li>applies the properties of operations to problems involving all four operations with rational numbers.</li> <li>makes sense of all operations of numbers and perseveres in solving problems requiring the use of the operations.</li> </ul>	<i>A student performing at the Exceeding level:</i> <ul style="list-style-type: none"> <li>uses the properties of rational numbers to explain and defend their mathematical thinking.</li> <li>solves problems involving operations with rational numbers, including those requiring the use of algebraic formulas.</li> <li>gives results to the required level of precision.</li> <li>gives an explanation demonstrating a general understanding but not generalizing to other cases.</li> </ul>
<b>Expressions and Equations</b> Focus is on understanding operations, keying in on operations that produce equivalent expressions. Students solve simple linear equations and inequalities.	<i>A student performing at the Needs Support level:</i> <ul style="list-style-type: none"> <li>solves one-step algebraic equations posed with whole numbers.</li> <li>recognizes and uses the structure of algebraic equations to know that you can use inverse operations.</li> </ul>	<i>A student performing at the Close level:</i> <ul style="list-style-type: none"> <li>solves one-step algebraic equations posed with fractions.</li> </ul>	<i>A student performing at the Ready level:</i> <ul style="list-style-type: none"> <li>solves multi-step algebraic equations posed with whole numbers, fractions, and decimals.</li> </ul>	<i>A student performing at the Exceeding level:</i> <ul style="list-style-type: none"> <li>applies the properties of addition, subtraction, and distribution to expand algebraic expressions with rational coefficients.</li> <li>uses equations and inequalities to represent and solve multi-step real-world problems, including rational numbers.</li> <li>reasons quantitatively by making sense of quantities and considering the units involved. Also decontextualizes by selecting an inequality that represents a situation symbolically.</li> <li>gives results to the required level of precision. Also identifies an inequality whose solution rounds down to the problem's solution.</li> <li>makes sense of quantities and relationships in problem situations and uses units to help solve a problem.</li> </ul>
<b>Geometry</b> Focus is on scale drawings and applying proportional reasoning. Students explore relations in geometric shapes.	<i>A student performing at the Needs Support level:</i> <ul style="list-style-type: none"> <li>selects, sketches, or draws freehand, geometric figures with given conditions.</li> <li>finds the area of a rectangle.</li> <li>identifies right prisms.</li> <li>accurately models geometric figures.</li> <li>understands the structure of the area of a rectangle formula.</li> </ul>	<i>A student performing at the Close level:</i> <ul style="list-style-type: none"> <li>recognizes particular quadrilaterals from a description of their characteristics.</li> <li>knows the difference between area and perimeter/circumference.</li> <li>finds the volume of a rectangular prism.</li> <li>recognizes the structure of quadrilaterals.</li> <li>makes sense of characteristics of quadrilaterals, area, circumference, and perimeter.</li> <li>understands the structure of the volume formula.</li> </ul>	<i>A student performing at the Ready level:</i> <ul style="list-style-type: none"> <li>uses knowledge about supplementary, complementary, vertical, and adjacent angles to solve for an unknown angle in a figure.</li> <li>solves problems involving the area and circumference of a circle and area of parallelogram, trapezoids, and triangles.</li> <li>finds the surface area of a rectangular prism.</li> <li>uses formulas to model area, circumference, surface area, and volume.</li> <li>use calculators appropriately when translating between actual length on a scale diagram and the length that it represents.</li> <li>accurately rounds to an appropriate place value when working with measurements from scale diagrams.</li> </ul>	<i>A student performing at the Exceeding level:</i> <ul style="list-style-type: none"> <li>uses properties of interior angles for polygons to determine unknown angle measures.</li> <li>uses the characteristics of two-dimensional figures to solve problems.</li> <li>solves real-world and word problems involving the area and circumference of a circle, and area of irregular figures composed of rectangles in a scale drawing.</li> <li>finds the surface area and volume of any right prism.</li> <li>uses the properties of a rectangular prism to determine the length of a side, given its surface area.</li> <li>solves problems involving scale.</li> <li>shows a range of ability in explaining or arguing how to find surface area and volume of any right prism.</li> <li>uses the structure of composite geometric shapes to see that they are composed of several shapes.</li> </ul>
<b>Statistics and Probability</b> Focus is on finding information through sampling, thinking about how sure they are of the conclusion. Probability is defined and used as a model.	<i>A student performing at the Needs Support level:</i> <ul style="list-style-type: none"> <li>recognizes that the probability of a chance event is between 0 and 1, with larger numbers indicating greater likelihood.</li> </ul>	<i>A student performing at the Close level:</i> <ul style="list-style-type: none"> <li>examines a frequency summary to determine the approximate probability of defined outcomes.</li> </ul>	<i>A student performing at the Ready level:</i> <ul style="list-style-type: none"> <li>uses a tree diagram to find the probability of compound events.</li> <li>understands the difference between experimental and theoretical probability.</li> </ul>	<i>A student performing at the Exceeding level:</i> <ul style="list-style-type: none"> <li>compares and contrasts probabilities from a frequency model with theoretical and experimental probability for the event.</li> <li>calculates probability for 2-step experiments with and without replacement/repetition of values. Example: rolling a die twice, drawing 2 cards at once.</li> <li>draws conclusions from random sampling about a population or two populations.</li> <li>uses probability models.</li> </ul>
<b>Modeling</b> Producing, interpreting, understanding, evaluating, and improving mathematical models.	<i>A student performing at the Needs Support level:</i> <ul style="list-style-type: none"> <li>sketches a diagram to represent a relationship.</li> </ul>	<i>A student performing at the Close level:</i> <ul style="list-style-type: none"> <li>identifies the quantities that are related in an equation or a table.</li> <li>selects a model of a geometric shape that meets given criteria when the shape is constructed from triangles, rectangles, and circles.</li> </ul>	<i>A student performing at the Ready level:</i> <ul style="list-style-type: none"> <li>identifies an equation to represent a relationship between quantities.</li> <li>selects a model of a geometric shape that meets given criteria.</li> <li>uses a provided geometric diagram or model to identify an angle measure.</li> <li>explains at a developing level an algebraic definition of even numbers but is unable to explain the algebraic definition of odd numbers.</li> <li>uses a provided table to make sense of data and solve a problem.</li> <li>visualizes a rectangular prism in terms of all 6 sides to facilitate determining the surface area.</li> </ul>	<i>A student performing at the Exceeding level:</i> <ul style="list-style-type: none"> <li>uses a provided geometric diagram/model to visualize how to solve a problem.</li> <li>uses a provided table to make sense of data and to help determine whether a relationship is proportional.</li> <li>uses provided formulas to convert from Kelvin to Celsius to Fahrenheit.</li> <li>translates from a contextualized problem situation to an inequality.</li> <li>visualizes or draws a model of a rectangular prism to support finding the length of a side, given a rectangular prism's surface area.</li> <li>translates from a number line diagram to a numerical expression representing the distance between 2 points.</li> <li>explains at a general level the algebraic definitions of even and odd numbers.</li> </ul>

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<b>Justification and Explanation</b> Giving reasons, explaining “Why?”	<i>A student performing at the Needs Support level:</i> <ul style="list-style-type: none"> <li>explains a pattern using words, algebraic expressions, or numerical operations.</li> <li>generates a sequence from a given rule.</li> <li>identifies an error in reasoning.</li> <li>uses two or more specific statements to draw a conclusion.</li> </ul>	<i>A student performing at the Close level:</i> <ul style="list-style-type: none"> <li>uses conditional statements.</li> <li>draws and labels relevant visual representations.</li> <li>explains steps of a procedure.</li> <li>provides a counterexample.</li> <li>uses a pattern or sequence to draw a conclusion.</li> <li>draws conclusions using both a specific and general statement as evidence.</li> <li>provides general support for a claim in order to reach a conclusion.</li> </ul>	<i>A student performing at the Ready level:</i> <ul style="list-style-type: none"> <li>uses and cites conditional statements, specific aspects of created visual representations, and/or computations or procedures to clarify an argument or draw a conclusion.</li> <li>justifies and defends conclusions by explaining errors in reasoning or calculations, providing counterexamples, applying relevant classification schemes, and/or verifying statements or claims used to draw a conclusion.</li> </ul>	<i>A student performing at the Exceeding level:</i> <ul style="list-style-type: none"> <li>provides a coherent, logical argument or solution pathway by providing evidence to support claims.</li> <li>provides thorough justification and defends conclusions by using multiple, connected statements and incorporating justification techniques such as explaining errors in reasoning or calculations, providing counterexamples, applying relevant classification schemes, and/or verifying statements or claims used to draw a conclusion.</li> </ul>
<b>Foundation</b> Integrate and continue to grow with topics from prior grades.	<i>A student performing at the Needs Support level:</i> <ul style="list-style-type: none"> <li>understands the concepts of rate and ratio.</li> <li>determines the sign of a product or quotient of integers based on the number of negative signs.</li> <li>adds and subtracts fractions.</li> <li>recognize the difference between expressions and equations.</li> <li>identifies a scale factor.</li> <li>finds the area of a rectangle.</li> <li>recognizes the difference between a sample and a population.</li> </ul>	<i>A student performing at the Close level:</i> <ul style="list-style-type: none"> <li>solves simple proportions.</li> <li>solves problems involving fractions.</li> <li>works with algebraic expressions and linear equations.</li> <li>solves problems involving scale factors.</li> <li>works with 2-dimensional shapes to solve problems involving area.</li> <li>describes characteristics of samples.</li> </ul>	<i>A student performing at the Ready level:</i> <ul style="list-style-type: none"> <li>understands and applies proportional relationships.</li> <li>understands and applies operations with rational numbers.</li> <li>understands and works with algebraic expressions and linear equations.</li> <li>solves problems that involve scale and informal geometric constructions.</li> <li>works with 3-dimensional shapes to solve problems involving surface area and volume.</li> <li>draws inferences about populations based on samples.</li> <li>calculates the appropriate angle measures to construct a circle graph.</li> </ul>	<i>A student performing at the Exceeding level:</i> <ul style="list-style-type: none"> <li>analyzes proportional relationships and applies them to solve multistep problems with context.</li> <li>applies and extends previous knowledge of operations with fractions to work with rational number operations.</li> <li>uses properties of operations to create equivalent numerical expressions.</li> <li>evaluates algebraic expressions or solves algebraic equations to solve problems with context.</li> <li>sketches geometric figures and describes the relationships between them.</li> <li>solves problems with context that involve angle measure, area, surface area, and volume.</li> <li>interprets a circle graph from a real-world context.</li> </ul>
<b>Mathematical Practices</b> Collected PLDs that focus on mathematical practices.	<i>A student performing at the Needs Support level:</i> <ul style="list-style-type: none"> <li>makes sense of problems to compare two quantities.</li> <li>uses calculators appropriately when comparing ratios.</li> <li>uses a number line to model negative and positive numbers.</li> <li>recognizes and uses the structure of algebraic equations to know that you can use inverse operations.</li> <li>accurately models geometric figures.</li> <li>understands the structure of the area of a rectangle formula.</li> <li>sketches a diagram to represent a relationship.</li> <li>explains a pattern using words, algebraic expressions, or numerical operations.</li> <li>generates a sequence from a given rule.</li> <li>identifies an error in reasoning.</li> <li>uses two or more specific statements to draw a conclusion.</li> </ul>	<i>A student performing at the Close level:</i> <ul style="list-style-type: none"> <li>makes sense of problems and perseveres in solving proportions accurately.</li> <li>makes sense of a math concept in the real world.</li> <li>recognizes the structure of quadrilaterals.</li> <li>makes sense of characteristics of quadrilaterals, area, circumference, and perimeter.</li> <li>understands the structure of the volume formula.</li> <li>identifies the quantities that are related in an equation or a table.</li> <li>selects a model of a geometric shape that meets given criteria when the shape is constructed from triangles, rectangles, and circles.</li> <li>uses conditional statements.</li> <li>draws and labels relevant visual representations.</li> <li>explains steps of a procedure.</li> <li>provides a counterexample.</li> <li>uses a pattern or sequence to draw a conclusion.</li> <li>draws conclusions using both a specific and general statement as evidence.</li> <li>provides general support for a claim in order to reach a conclusion.</li> </ul>	<i>A student performing at the Ready level:</i> <ul style="list-style-type: none"> <li>uses the structure of ratios and proportions to calculate percentages.</li> <li>makes sense of problems and perseveres in solving multistep problems.</li> <li>makes sense of all operations of numbers and perseveres in solving problems requiring the use of the operations.</li> <li>uses formulas to model area, circumference, surface area, and volume.</li> <li>use calculators appropriately when translating between actual length on a scale diagram and the length that it represents.</li> <li>accurately rounds to an appropriate place value when working with measurements from scale diagrams.</li> <li>identifies an equation to represent a relationship between quantities.</li> <li>selects a model of a geometric shape that meets given criteria.</li> <li>uses a provided geometric diagram or model to identify an angle measure.</li> <li>explains at a developing level an algebraic definition of even numbers but is unable to explain the algebraic definition of odd numbers.</li> <li>uses a provided table to make sense of data and solve a problem.</li> <li>visualizes a rectangular prism in terms of all 6 sides to facilitate determining the surface area.</li> <li>uses and cites conditional statements, specific aspects of created visual representations, and/or computations or procedures to clarify an argument or draw a conclusion.</li> <li>justifies and defends conclusions by explaining errors in reasoning or calculations, providing counterexamples, applying relevant classification schemes, and/or verifying statements or claims used to draw a conclusion.</li> </ul>	<i>A student performing at the Exceeding level:</i> <ul style="list-style-type: none"> <li>makes sense of quantities and their relationships.</li> <li>gives results to the required level of precision.</li> <li>applies the structure of proportions to rates, percentages, and discounts.</li> <li>gives results to the required level of precision.</li> <li>gives an explanation demonstrating a general understanding but not generalizing to other cases.</li> <li>reasons quantitatively by making sense of quantities and considering the units involved. Also decontextualizes by selecting an inequality that represents a situation symbolically.</li> <li>gives results to the required level of precision. Also identifies an inequality whose solution rounds down to the problem’s solution.</li> <li>makes sense of quantities and relationships in problem situations and uses units to help solve a problem.</li> <li>shows a range of ability in explaining or arguing how to find surface area and volume of any right prism.</li> <li>uses the structure of compound geometric shapes to see that they are composed of several shapes.</li> <li>uses a provided geometric diagram/model to visualize how to solve a problem.</li> <li>uses a provided table to make sense of data and to help determine whether a relationship is proportional.</li> <li>uses provided formulas to convert from Kelvin to Celsius to Fahrenheit.</li> <li>translates from a contextualized problem situation to an inequality.</li> <li>visualizes or draws a model of a rectangular prism to support finding the length of a side, given a rectangular prism’s surface area.</li> <li>translates from a number line diagram to a numerical expression representing the distance between 2 points.</li> <li>explains at a general level the algebraic definitions of even and odd numbers.</li> <li>provides a coherent, logical argument or solution pathway by providing evidence to support claims.</li> <li>provides thorough justification and defends conclusions by using multiple, connected statements and incorporating justification techniques such as explaining errors in reasoning or calculations, providing counterexamples, applying relevant classification schemes, and/or verifying statements or claims used to draw a conclusion.</li> </ul>