

Unit	Numbers Unit	Fractions Unit	Rates, Ratios, and Proportions Unit	Plane Geometry Unit
Essential Question	In what ways is math a survival skill?	In what ways is math a survival skill?	In what ways is math a survival skill?	In what ways is math a survival skill?
Grade Level Content Expectations	<p><b>Number and Operations: Meaning and Notation</b>  <b>NME 0605</b> – Order rational numbers and place them on the number line.  <b>NME 0617</b> –Locate negative rational numbers (including integers) on the number line; know that numbers and their negatives add to 0 and are on opposite sides and at equal distance from 0, on a number line.  <b>NME 0606</b> – Represent rational numbers as fractions or terminating decimals when possible and translate between there representations.  <b>NME 0618</b> – Understand that rational numbers are quotients of integers (nonzero denominators), e.g., a rational number is either a fraction or a negative fraction.  <b>NME 0616</b> – Understand and use integer exponents, excluding powers of negative numbers; express numbers in scientific notation.  <b>NME 0619</b> – Understand that 0 is an integer that is neither negative or positive.  <b>NME 0620</b> – Know that the absolute value of a number is the value of the number, ignoring the sign; or is the distance of the number from 0.</p>	<p><b>Number and Operations: Meaning and Notation</b>  <b>NME 0607</b> – Understand that a fraction or a negative fraction is a quotient of two integers.  <b>Number and Operations: Number relationships and meaning of operations</b>  <b>NMR 0601</b>– Understand division of fractions as the inverse of multiplication  <b>Number and Operations: Fluency with operations and estimation</b>  <b>NFL 0604</b> – Multiply and divide any two fractions, including mixed numbers, fluently  <b>NFL 0602</b> – Given an applied situation involving dividing fractions, write a mathematical statement to represent the situation.  <b>NFL 0614</b> – For applied situations, estimate the answers to calculations involving operations with rational numbers  <b>NFL 0610</b> – Add, subtract, multiply, and divide positive rational numbers fluently.</p>	<p><b>Number and Operations: Meaning and Notation</b>  <b>NME 0611</b> – Find equivalent ratios by scaling up or scaling down.  <b>Number and Operations: Fluency with operations and estimation</b>  <b>NFL 0612</b> – Calculate part of a number given the percentage and the number.  <b>NFL 0613</b> – Solve word problems involving percentages in such contexts as sales taxes and tips and involving positive rational numbers.  <b>NFL 0614</b> – For applied situations, estimate the answers to calculations involving operations with rational numbers  <b>NFL 0610</b> – Add, subtract, multiply, and divide positive rational numbers fluently.  <b>Algebra: Patterns, relations, functions, and change</b>  <b>APA 0601</b> – Solve applied problems involving rates including speed, e.g., if a car is going 50 mph, how far will it go in 3.5 hours?  <b>Measurement: Units and systems of measurement</b>  <b>MUN 0601</b> – Convert between basic units of measurement within a single measurement system, e.g., square inches to</p>	<p><b>Geometry: Geometric shape and properties and mathematical arguments</b>  <b>GGS 0602</b> – Understand that for polygons, congruence means corresponding sides and angles have equal measures.  <b>GGS 0601</b> – Understand and apply basic properties of lines, angles, and triangles, including:  —triangle inequality  —relationships of vertical angles, complementary angles, supplementary angles  —congruence of corresponding and alternate interior angles when parallel lines are cut by a transversal, and that such congruencies imply parallel lines  —locate interior and exterior angles of any triangle, and use the property that an exterior angle of a triangle is equal to the sum of the remote (opposite) interior angles  —know that the sum of the exterior angles of a convex polygon is 360°.  <b>Geometry: Spatial reasoning and geometric modeling</b>  <b>GSR 0605</b> – Use paper folding to perform basic geometric constructions of perpendicular lines, midpoints of line segments and angle bisectors; justify informally.</p>

	<p><b>Number and Operations: Number relationships and meaning of operations</b>  <b>NMR 0608</b> – Understand integer subtraction as the inverse of integer addition, add and subtract integers, using integers from 10 to -10.</p> <p><b>Number and Operations: Fluency with operations and estimation</b>  <b>NFL 0609</b> – Add, subtract, multiply, and divide integers between 10 and -10. Use the number line and strip models for addition and subtraction.  <b>NFL 0614</b> – For applied situations, estimate the answers to calculations involving operations with rational numbers  <b>NFL 0615</b> – Solve applied problems that use the four operations with appropriate decimal numbers.  <b>NFL 0610</b> – Add, subtract, multiply, and divide positive rational numbers fluently.</p>		square feet.	<p><b>Geometry: Transformation and symmetry</b>  <b>GTR 0603</b> – Understand the basic rigid motions in the plane (reflections, rotations, translations), relate these to congruence, and apply them to solve problems.  <b>GTR 0604</b> – Understand and use simple compositions of basic rigid transformations, e.g., a translation followed by a reflection.</p> <p><b>Number and Operations: Fluency with operations and estimation</b>  <b>NFL 0614</b> – For applied situations, estimate the answers to calculations involving operations with rational numbers  <b>NFL 0610</b> – Add, subtract, multiply, and divide positive rational numbers fluently.</p>
Skills	<ul style="list-style-type: none"> <li>• Ordering positive/negative numbers on a number line</li> <li>• Positive/negative number relationship to zero</li> <li>• Converting fractions, decimals, and whole numbers</li> <li>• Scientific Notation</li> <li>• Using Exponents</li> <li>• Property of Zero</li> </ul>	<ul style="list-style-type: none"> <li>• Quotient of 2 integers</li> <li>• Multiplication/division of fractions &amp; mixed numbers</li> <li>• Writing mathematical statements for applied situations</li> <li>• Estimation of word problems</li> </ul>	<ul style="list-style-type: none"> <li>• Equivalent Ratios</li> <li>• Part of a number using percentages &amp; the number</li> <li>• Solving problems with percentages, sales tax, and tips</li> <li>• Estimation of word problems</li> <li>• Conversion between units within a single measurement system</li> </ul>	<ul style="list-style-type: none"> <li>• Similar Figures</li> <li>• Congruent Figures</li> <li>• Basic properties of lines, angles, &amp; triangles</li> <li>• Triangle Inequality</li> <li>• Specialty Angles</li> <li>• Congruent Angles</li> <li>• Interior/Exterior Angles</li> <li>• Basic Geometric Constructions</li> <li>• Basic Rigid Transformations</li> </ul>

	<ul style="list-style-type: none"> <li>• Absolute Value</li> <li>• Adding/Subtracting integers -10 to 10</li> <li>• Using four major operations with integers -10 to 10</li> <li>• Estimation of word problems</li> <li>• Solving word problems</li> </ul>			<ul style="list-style-type: none"> <li>• Using multiple rigid transformations</li> </ul>
Assessment	Human number line activity Quizzes Unit Test	Quizzes Unit Test	Shopping Journal Quizzes Unit Test	Transformation Project Geometric Constructions Quizzes Unit Test
Time Frame	August to September	October to November	November to December	January to February

Unit	Space Geometry Unit	Algebra Unit	Graphing Unit	Probability Unit
Essential Question	In what ways is math a survival skill?	In what ways is math a survival skill?	In what ways is math a survival skill?	In what ways is math a survival skill?
Grade Level Content Expectations	<p><b>Measurement: Techniques and formulas for measurement</b>  <b>MTE 0603</b> – Compute the volume and surface area of cubes and rectangular prisms given the lengths of their sides using formulas.</p> <p><b>Measurement: Problem solving involving measurement</b>  <b>MPS 0602</b> – Draw patterns (of faces) for a cube and rectangular prism that, when cut, will cover the solid exactly (nets).</p> <p><b>Number and Operations: Fluency with operations and estimation</b>  <b>NFL 0614</b> – For applied situations, estimate the answers to calculations involving operations with rational numbers  <b>NFL 0610</b> – Add, subtract, multiply, and divide positive rational numbers fluently.</p>	<p><b>Number and Operations: Number relationships and meaning of operations</b>  <b>NMR 0603</b> – Solve for the unknown in equations</p> <p><b>Algebra: Formulas, expressions, equations, and inequalities</b>  <b>AFO 0603</b> – Use letters, with units, to represent quantities in a variety of contexts, e.g., y lbs., k minutes, x cookies.  <b>AFO 0604</b> – Distinguish between an algebraic expression and an equation.  <b>AFO 0606</b> – Represent information given in words using algebraic expressions and equations.  <b>AFO 0605</b> – Use standard conventions for writing algebraic expressions, e.g., <math>2x + 1</math> means “two times x, plus 1” and <math>2(x + 1)</math> means “two times the quantity (x + 1).”  <b>AFO 0607</b> – Simplify expressions of the first degree by combining like terms, and evaluate using specific values.  <b>AFO 0611</b> – Relate simple linear equations with integer coefficients to particular contexts, and solve, e.g., <math>3x = 8</math> or <math>x + 5 = 10</math>.  <b>AFO 0612</b> – Understand that adding or subtracting the same number to both sides of an equation creates a new equation</p>	<p><b>Algebra: Patterns, relations, functions, and change</b>  <b>APA 0609</b> – Graph and write equations for linear functions of the form <math>y = mx</math>, and solve related problems, e.g., given n chairs, the “leg function” is <math>f(n) = 4n</math>; if you have 5 chairs, how many legs?; if you have 12 legs, how many chairs?</p> <p><b>Algebra: Representation</b>  <b>ARP 0602</b> – Plot ordered pairs of integers and use ordered pairs of integers to identify points in all four quadrants of the coordinate plane.  <b>ARP 0610</b> – Represent simple relationships between quantities, using verbal descriptions, formulas or equations, tables, and graphs, e.g., perimeter-side relationship for a square, distance-time graphs, and conversions such as feet to inches.  <b>ARP 0608</b> – Understand that relationships between quantities can be suggested by graphs and tables.</p> <p><b>Number and Operations: Fluency with operations and estimation</b>  <b>NFL 0614</b> – For applied situations, estimate the answers to calculations involving operations with rational numbers  <b>NFL 0610</b> – Add, subtract,</p>	<p><b>Data and Probability: Probability</b>  <b>DPR 0601</b> – Express probabilities as fractions, decimals or percentages between 0 and 1; know that 0 probability means an event will not occur and that probability 1 means an event will occur.  <b>DPR 0602</b> – Compute probabilities of events from simple experiments with equally likely outcomes, e.g., tossing dice, flipping coins, spinning spinners, by listing all possibilities and finding the fraction that meets given conditions.</p> <p><b>Number and Operations: Fluency with operations and estimation</b>  <b>NFL 0614</b> – For applied situations, estimate the answers to calculations involving operations with rational numbers  <b>NFL 0610</b> – Add, subtract, multiply, and divide positive rational numbers fluently.</p>

		<p>that has the same solution.</p> <p><b>AFO 0613</b> – Understand that multiplying or dividing both sides of an equation by the same non-zero number creates a new equation that has the same solutions.</p> <p><b>AFO 0614</b> – Solve equations of the form <math>ax + b = c</math>, e.g., <math>3x + 8 = 15</math> by hand for positive integer coefficients less than 20, using calculators otherwise, and interpret the results.</p> <p><b>Number and Operations: Fluency with operations and estimation</b></p> <p><b>NFL 0614</b> – For applied situations, estimate the answers to calculations involving operations with rational numbers</p> <p><b>NFL 0610</b> – Add, subtract, multiply, and divide positive rational numbers fluently.</p>	multiply, and divide positive rational numbers fluently.	
Skills	<ul style="list-style-type: none"> <li>• Volume of cubes &amp; prisms</li> <li>• Surface Area of cubes &amp; prisms</li> <li>• Draw nets for cubes &amp; prisms</li> </ul>	<ul style="list-style-type: none"> <li>• Solving for unknown variable in equations</li> <li>• Using variables</li> <li>• Expressions vs. Equations</li> <li>• Create expressions &amp; equations from word statements</li> <li>• Writing algebraic expressions</li> <li>• Simplifying expressions</li> <li>• Solving 1-Step Equations</li> <li>• Inverse Operations</li> <li>• Solving 2-Step Equations</li> </ul>	<ul style="list-style-type: none"> <li>• Graphing linear equations</li> <li>• Writing linear equations</li> <li>• Plotting ordered pairs</li> <li>• Using four quadrants of coordinate plane</li> <li>• Using verbal descriptions, formulas, equations, tables or graphs to show simple relationships between quantities</li> <li>• Identify relationships within graphs &amp; tables</li> </ul>	<ul style="list-style-type: none"> <li>• Express probabilities in form of fractions, decimals, &amp; percentages</li> <li>• Determine the likelihood of an event happening</li> <li>• Equally likely outcome experiments</li> </ul>
Assessment	Drawings Quizzes Unit Test	Quizzes Unit Test	Group Graphs Quizzes Unit Test	Experiment Results Quizzes Unit Test
Time Frame	February to March	March to April	April to May	May

