

**Trinity Area School District  
Curriculum Mapping**

<b>Course: Elementary Math</b> <b>Grade: 5</b> <b>Designer(s): Math Committee</b>	<b>Overview of Course: Students will understand whole numbers, addition, subtraction, multiplication, division, geometry, fractions, and measurement and be able to solve real world problems using these concepts and procedures.</b>		
<b>Overarching Big Ideas, Enduring Understandings, and Essential Questions</b>			
<ul style="list-style-type: none"> <li>• Make sense of problems and persevere in solving them.</li> <li>• Reason abstractly and quantitatively.</li> <li>• Construct viable arguments and critique the reasoning of others.</li> <li>• Model with mathematics.</li> <li>• Use appropriate tools strategically.</li> <li>• Attend to precision.</li> <li>• Look for and make use of structure.</li> <li>• Look for and express regularity in repeated reasoning.</li> </ul>			
<b>Big Idea Connections</b>	<b>Standard(s) Addressed</b>	<b>Enduring Understanding(s)</b>	<b>Essential Question(s)</b>
Problem Solving	<b>CC.2.2.3.A.4 Solve problems involving the four operations, and identify and explain patterns in arithmetic</b> <b>M03.B-O.3.1.1, 2, 3, 4, 5, 6, and 7</b>	Doing mathematics involves a variety of processes including problem solving, reasoning, communicating, connecting, and representing.	How can words and phrases be translated into numerical expressions?  How can information and computation be shown visually using pictures or diagrams?
Writing to Explain	<b>CC.2.2.3.A.4 Solve problems involving the four operations, and identify and explain patterns in arithmetic</b> <b>M03.B-O.3.1.1, 2, 3, 4, 5, 6, and 7</b>	Mathematical explanations can be given using words, pictures, numbers, or symbols. A good explanation should be correct, simple, complete, and easy to understand.	How can computational steps be explained to demonstrate understanding of mathematical thinking and processes?

**Big Ideas, Enduring Understandings, and Essential Questions Per Unit of Study**

**2.4.5 Measurement, Data and Probability-** Mathematical models are used to predict and make inferences about data.

Month of Instruction	Title of Unit	Big Idea(s)	Standard(s) Addressed	Enduring Understanding(s)	Essential Question(s)	Common Assessment(s)*	Common Resource(s)*
This concept should be <b>embedded</b> into instruction throughout the year.	<b>Graphing &amp; Data Analysis</b>	<p><b>Questions, Data Collection, and Data Analysis</b></p> <ul style="list-style-type: none"> <li>Analyze a question to determine relevant and irrelevant components</li> <li>Make a hypothesis or prediction</li> <li>Decide whether data will be collected through observation, survey, or experiment</li> <li>Determine the best way to organize data</li> <li>Choose the target population</li> <li>Determine when to collect data</li> <li>Conclude how the methods used affect the data set</li> <li>Compare data sets collected in different ways</li> </ul>	<p><b>CC.2.4.5.A.2 Represent and interpret data using appropriate scale.</b>  <b>M05.D-M.2.1.2</b></p> <p>2.6.5.A.  <i>Gather data from surveys and observations from sources outside the classroom or home.</i></p>	<p>Data analysis involves the formulation of questions that can be addressed, explored, and synthesized with relevant information.</p> <p>Data can be collected, organized, and displayed in purposeful ways</p> <p>Some questions can be answered by using a survey.</p> <p>An appropriately selected sample can be used to make predictions.</p>	<p>What is data and what can we learn from it?</p> <p>How can you display the data collected in a survey?</p>	None required	<p><b>Common Vocabulary:</b></p> <ul style="list-style-type: none"> <li><i>axis</i></li> <li><i>ordered pair</i></li> <li><i>point</i></li> <li><i>survey</i></li> <li><i>data</i></li> <li><i>sample</i></li> <li><i>frequency table</i></li> <li><i>line plot</i></li> <li><i>bar graph</i></li> <li><i>double-bar-graph</i></li> <li><i>picture graph</i></li> <li><i>scale</i></li> <li><i>stem-and-leaf plot</i></li> </ul>

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This concept should be <b>embedded</b> into instruction throughout the year.	<b>Graphing &amp; Data Analysis</b>	<p><b>Graph Construction</b></p> <ul style="list-style-type: none"> <li>• Recognize how interpretation of the question impacts the data</li> <li>• Be familiar with how asking the question impacts the data</li> <li>• Figure out how the method of measurement impacts the data</li> <li>• Determine how the method of recording impacts the data</li> <li>• Realize how the selection of a sample population impacts the data</li> <li>• Compare data sets collected</li> <li>• Display and interpret data shown in tallies, tables, charts, pictographs, and bar graphs using a title, appropriate and scale and labels</li> </ul>	<p><b>CC.2.4.5.A.2 Represent and interpret data using appropriate scale.</b>  <b>M05.D-M.2.1.2</b></p> <p><i>2.6.5.B. Use pictures, tallies, tables, charts, bar graphs, line graphs, diagrams, and graphs to organize, display, and analyze data.</i></p> <p><i>2.6.5.D. Compare data using multiple categories displayed in a graph.</i></p> <p><i>2.6.5.E. Determine the reasonableness of a statement based on a comparison to data displayed in a graph and summarized by numerical measures.</i></p>	<p>Various statistical methods can be used to observe, analyze, predict, and make inferences about data.</p> <p>Each type of graph is most appropriate for certain kinds of data.</p>	<p>How do you choose the best graph to display the data?</p> <p>How do you selection a population?</p>	<b>None required</b>	<ul style="list-style-type: none"> <li>• <i>axis</i></li> <li>• <i>ordered pair</i></li> <li>• <i>point</i></li> <li>• <i>survey</i></li> <li>• <i>data</i></li> <li>• <i>sample</i></li> <li>• <i>frequency table</i></li> <li>• <i>line plot</i></li> <li>• <i>bar graph</i></li> <li>• <i>double-bar-graph</i></li> <li>• <i>picture graph</i></li> <li>• <i>scale</i></li> <li>• <i>stem-and-leaf plot</i></li> </ul> <p><u>Tiger Math: Learning to Graph from a Baby Tiger</u> by Ann Whitehead Nagda</p> <p><u>Lemonade for Sale</u> by Stuart J. Murphy</p>
This concept should be <b>embedded</b> into instruction throughout the year.	<b>Graphing &amp; Data Analysis</b>	<p><b>Change over time</b></p> <ul style="list-style-type: none"> <li>• Understand change over time</li> <li>• Determine if change over time has occurred</li> <li>• Describe the concept of increasing, decreasing and trends</li> </ul>	<p><b>CC.2.4.5.A.2 Represent and interpret data using appropriate scale.</b>  <b>M05.D-M.2.1.2</b></p>	<p>Each type of graph is most appropriate for certain kinds of data.</p> <p>Line graphs made from ordered pairs can be used to show a relationship between two sets of data.</p>	<p>How can data be represented on a line graph?</p> <p>How can you read data from line graphs?</p> <p>How does a line graph show a change of data over time?</p>	<b>None required</b>	<ul style="list-style-type: none"> <li>• <i>interval</i></li> <li>• <i>line graph</i></li> <li>• <i>trend</i></li> </ul>

**Big Ideas, Enduring Understandings, and Essential Questions Per Unit of Study**

**2.1.5 Numbers and Operations** -Relationships among numbers and number systems form the foundations of number sense and mathematics communication.

Month of Instruction	Title of Unit	Big Idea(s)	Standard(s) Addressed	Enduring Understanding(s)	Essential Question(s)	Common Assessment(s)*	Common Resource(s)* <i>Topic 1</i>
Start of School Year	<b>Place Value (Checkbook Challenge)</b>	<p><b>Representations and Order</b></p> <ul style="list-style-type: none"> <li>Describe numbers according to place value characteristics.</li> <li>Use manipulatives, charts, and diagrams to demonstrate understanding of decimal places.</li> <li>Read, write, compare and order whole numbers to hundred million and decimals to the thousandths.</li> <li>Round whole numbers and decimals through the nearest 0.001.</li> </ul>	<p><b>CC.2.1.5.B.1 Apply place value concepts to show an understanding of operations and rounding as they pertain to whole numbers and decimals.</b>  <b>M05.A-T.1.1.1</b>  <b>M05.A-T.1.1.2</b>  <b>M05.A-T.1.1.3</b>  <b>M05.A-T.1.1.4</b>  <b>M05.A-T.1.1.5</b>  <i>2.1.5.D. Apply place value concepts to order and compare decimals and to express whole numbers and decimals in expanded notation.</i></p>	<p>A number can extend infinitely in both directions from a decimal point.</p> <p>The number line extends infinitely in both directions from zero.</p> <p>Our number system is a pattern of tens where each place is ten times the value of the place to its right.</p> <p>A digit's location in a number determines its worth.</p> <p>Estimation serves as a tool for judging reasonableness of computations.</p> <p>Rounding numbers can be used to estimate when exact numbers are not needed.</p> <p>Decimals are rounded in a way that is similar to the way whole numbers are rounded.</p>	<p>How can you read and write large numbers?</p> <p>How can you represent decimals?</p> <p>How can you compare and order whole numbers and decimals?</p>	<p><b>*see below</b></p>	<ul style="list-style-type: none"> <li><i>Digits</i></li> <li><i>period</i></li> <li><i>place value</i></li> <li><i>whole numbers</i></li> <li><i>tenth</i></li> <li><i>hundredth</i></li> <li><i>thousandth</i></li> <li><i>standard form</i></li> <li><i>value</i></li> <li><i>expanded form</i></li> <li><i>word form</i></li> <li><i>equivalent decimals</i></li> </ul> <p><u>How Much is a Million?</u> by David M. Schwartz  <u>The King's Commissioners</u> by Aileen Friedman  <u>Sir Cumference and All the King's Tens</u> by Cindy Neuschwander  <u>One Grain of Rice: A Mathematical Folktale</u> by Demi  <u>A Place for Zero: A Math Adventure</u> by Angeline Sparagna LoPresti</p>

Month of Instruction	Title of Unit	Big Idea(s)	Standard(s) Addressed	Enduring Understanding(s)	Essential Question(s)	Common Assessment(s)*	Common Resource(s) <i>Topics 2, 3, 4, 5, &amp; 7</i>
Beginning of School through end of October	<p><b>Computation: Addition Subtraction Multiplication Division (Checkbook Challenge)</b></p> <p><b>Perimeter, Area, &amp; Volume must be incorporated into addition / multiplication instruction during this time frame.</b></p>	<p><b>Computation and Estimation of Whole Numbers and Decimals</b></p> <ul style="list-style-type: none"> <li>Solve real-world mathematical problems.</li> <li>Add and subtract whole numbers to 10,000; decimals to hundredths.</li> <li>Multiply up to two 3-digit whole numbers and decimals by whole numbers and decimals.</li> <li>Divide 4-digit whole numbers by 2-digit divisor and decimals by a whole number divisor.</li> <li>Use various strategies, (including the use of inverse relationships) between operations to check for accuracy.</li> <li>Use a variety of estimation strategies, and know when it is appropriate to estimate and when an exact answer is needed.</li> <li>Evaluate the reasonableness of the solution.</li> </ul>	<p><b>CC.2.1.5.B.2 Extend an understanding of operations with whole numbers to perform operations including decimals.</b>  <b>M05.A-T.2.1.1</b>  <b>M05.A-T.2.1.2</b>  <b>M05.A-T.2.1.3</b></p> <p><i>2.1.5.E. Develop and apply number theory concepts (e.g., primes, factors, multiples, composites) to represent numbers in various ways.</i></p> <p><i>2.1.5.F. Understand the concepts of multiplication and division and use the inverse relationships between multiplication and division, to determine unknown quantities in equations.</i></p>	<p>Our number system is a pattern of tens where each place is ten times the value of the place to its right.</p> <p>Patterns and relationships among operations are essential to making estimates and computing fluently.</p> <p>Computational fluency requires efficient, accurate and flexible methods for computing.</p> <p>Estimation serves as a tool for judging reasonableness of computations.</p> <p>Every numerical operation has an inverse.</p>	<p>What does it mean to be “computationally fluent”?</p> <p>How does understanding the structure of the number system help you solve problems?</p> <p>How do you solve problems with whole numbers and decimals?</p> <p>Why is it important to estimate?</p> <p>How can you estimate whole numbers and decimals?</p> <p>How can you estimate to find sums and differences?</p>	<p><b>TASD Common Assessment – 5<sup>th</sup> Grade Numbers and Operations in Base Ten Addition and Subtraction Required Assessment</b> Ski Shop Task</p> <p><b>TASD Common Assessment – 5<sup>th</sup> Grade Numbers and Operations in Base Ten Multiplication and Division Required Assessment</b> Lemonade Sale Task</p>	<ul style="list-style-type: none"> <li>addend</li> <li>difference</li> <li>sum</li> <li>Commutative Property</li> <li>Associative Property</li> <li>compensation</li> <li>rounding</li> <li>compatible numbers</li> <li>equation</li> <li>Commutative Prop. of Mult</li> <li>Associative Prop. of Mult</li> <li>Identity Property of Multiplication</li> <li>Zero Property of Multiplication</li> <li>factors</li> <li>product</li> <li>multiple</li> <li>overestimate/ underestimate</li> <li>partial product</li> <li>base</li> <li>exponent</li> <li>exponential notation</li> <li>squared</li> <li>cubed</li> <li>compatible numbers</li> <li>inverse</li> <li>remainder</li> <li>prime number</li> <li>composite number</li> <li>prime factorization</li> <li>factor free</li> <li>dividend</li> </ul>

							<ul style="list-style-type: none"> <li>• <i>divisor</i></li> <li>• <i>quotient</i></li> <li>• <i>divisible</i></li> <li>• <i>remainder</i></li> <li>• <i>factor pair</i></li> <li>• <i>perimeter</i></li> <li>• <i>area</i></li> <li>• <i>volume</i></li> </ul>
Month of Instruction	Title of Unit	Big Idea(s)	Standard(s) Addressed	Enduring Understanding(s)	Essential Question(s)	Common Assessment(s)*	Common Resource(s)
November	<b>Graphing &amp; Data Analysis</b> <b>(Checkbook Challenge)</b>	<b>Central Tendency</b> <ul style="list-style-type: none"> <li>• Explain mean, median, and mode</li> <li>• Explain the meaning of central tendency</li> <li>• Explain that each measure of central tendency is considered an average</li> <li>• Interpret the meaning of each measure of central tendency in real world problems</li> </ul>	<b>CC.2.4.5.A.2 Represent and interpret data using appropriate scale.</b> <b>M05.D-M.2.1.2</b>  <i>2.6.5.C. Calculate mean and range, identify the median and the mode of a set of data, and use these quantities to describe the data.</i>	<p>Informed citizens and consumers use data to make inferences, sound predictions, and judgments.</p> <p>Different measures can be used to describe the center of a numerical data set.</p> <p>Each measure is most appropriate depending on the characteristics of the data.</p>	<p>How can we make predictions when we are faced with uncertainty?</p> <p>What are some ways to describe a set of data?</p>	<b>TBA</b>	<i>Topics 2, 3, 4, 5, &amp; 7</i> <ul style="list-style-type: none"> <li>• <i>mean</i></li> <li>• <i>median</i></li> <li>• <i>mode</i></li> <li>• <i>range</i></li> <li>• <i>stem</i></li> <li>• <i>leaf</i></li> <li>• <i>stem-and-leaf plot</i></li> </ul>

**Big Ideas, Enduring Understandings, and Essential Questions Per Unit of Study**

**2.2.5 Algebraic Concepts-** Situations and structures can be represented, modeled and analyzed using algebraic symbols.

Month of Instruction	Title of Unit	Big Idea(s)	Standard(s) Addressed	Enduring Understanding(s)	Essential Question(s)	Common Assessment(s)*	Common Resource(s) <i>Topic 6</i>
December	<b>Operations and Algebraic Thinking</b>	<p><b>Expressions</b></p> <ul style="list-style-type: none"> <li>Write and evaluate numerical expressions with parentheses.</li> <li>Translate verbal expressions to numerical expressions.</li> <li>Write simple numerical expressions from verbal expressions without evaluating the expression.</li> <li>Translate numerical expressions to verbal expressions.</li> </ul>	<p><b>CC.2.2.5.A.1 Interpret and evaluate numerical expressions using order of operations.</b>  <b>M05.B-O.1.1.1</b>  <b>M05.B-O.1.1.2</b></p> <p><i>2.8.5.A. Use the concept of equality to demonstrate understanding of the distributive property.</i></p> <p><i>2.8.5.B. Select and use strategies, including concrete objects, to solve number sentences (equations and inequalities) and explain the method of solution.</i></p>	<p>Some mathematical phrases can be represented using a variable in an algebraic expression.</p> <p>The value of an algebraic expression can be found by replacing the variable with given numbers.</p> <p>Numerical and algebraic expressions can involve more than one operation.</p> <p>The Distributive Property of Multiplication lets you multiply each addend separately and then find the sum of the products.</p> <p>To solve a numerical expression, first compute within parenthesis. Then do any multiplication &amp; division calculations followed by any addition &amp; subtraction calculations.</p>	<p>How can you translate words into expressions?</p> <p>How can you evaluate an algebraic expression?</p> <p>How can you use the Distributive Property to write two equal expressions?</p> <p>How can you evaluate a numerical expression containing more than one operation?</p>	*see below	<ul style="list-style-type: none"> <li><i>difference</i></li> <li><i>product</i></li> <li><i>quotient</i></li> <li><i>sum</i></li> <li><i>algebraic expression</i></li> <li><i>variable</i></li> <li><i>Distributive Property</i></li> <li><i>order of operations</i></li> </ul>

Month of Instruction	Title of Unit	Big Idea(s)	Standard(s) Addressed	Enduring Understanding(s)	Essential Question(s)	Common Assessment(s)*	Common Resource(s) <i>Topic 15 &amp; 17</i>
January	<b>Patters and Functions</b>	<p><b>Patterns</b></p> <ul style="list-style-type: none"> <li>• Find, extend, and create numerical and geometric patterns showing 3 repetitions.</li> <li>• Form a rule and solve for a missing number based on given pattern.</li> <li>• Describe the relationship between two numerical patterns.</li> <li>• Construct input/output table to form ordered pairs.</li> <li>• Graph ordered pairs on a coordinate plane.</li> </ul>	<p><b>CC.2.2.5.A.4</b> <b>Analyze patterns and relationships using two rules.</b> <b>M05.B-O.2.1.1</b> <b>M05.B-O.2.1.2</b></p> <p>2.8.5.C. <i>Recognize, describe, extend, create, replicate, and form a rule for a variety of patterns, sequences, and relationships.</i></p> <p>2.8.5.D. <i>Determine a functional rule from a table or graph.</i></p> <p>2.8.5.E. <i>Use concrete objects and combinations of symbols and numbers to create expressions, equations, and inequalities that model mathematical situations.</i></p> <p>2.8.5.F. <i>Describe data represented in equations, inequalities, tables, or graphs and/or create a story that matches that data.</i></p>	<p>Mathematical relationships exist in patterns.</p> <p>The structure of a pattern is identified and described based on how it grows or changes.</p> <p>A mathematical model has both descriptive and predictive power.</p>	<p>Why is it important to look for a pattern?</p> <p>What can we learn from looking at patterns?</p> <p>How do symbols, tables of numbers and graphs help us to understand mathematics?</p> <p>How do tables help organize functions?</p>	<p><b>TASD Common Assessment – 5<sup>th</sup> Grade Operations &amp; Algebraic Thinking Required Assessment</b> Patterning Task</p>	<ul style="list-style-type: none"> <li>• <i>equality</i></li> <li>• <i>operation</i></li> <li>• <i>inverse</i></li> <li>• <i>variable</i></li> <li>• <i>algebraic expression</i></li> <li>• <i>Addition Property of Equality</i></li> <li>• <i>Subtraction Property of Equality</i></li> <li>• <i>equation</i></li> <li>• <i>Multiplication Property of Equality</i></li> <li>• <i>Division Property of Equality</i></li> <li>• <i>inequality</i></li> <li>• <i>solution of inequality</i></li> <li>• <i>inverse operations</i></li> <li>• <i>integers</i></li> <li>• <i>coordinate grid</i></li> <li>• <i>coordinate plane</i></li> <li>• <i>x-axis</i></li> <li>• <i>y-axis</i></li> <li>• <i>origin</i></li> <li>• <i>ordered pair</i></li> <li>• <i>x-coordinate</i></li> <li>• <i>y-coordinate</i></li> <li>• <i>linear equation</i></li> <li>• <i>Table of values</i></li> </ul>



## Big Ideas, Enduring Understandings, and Essential Questions Per Unit of Study

**2.3.5 Geometry-** Spatial relationships can be described using coordinate geometry and other representational systems. Analyzing characteristics and properties of two- and three-dimensional geometric figures aid in the development of mathematical arguments regarding geometric relationships.

Month of Instruction	Title of Unit	Big Idea(s)	Standard(s) Addressed	Enduring Understanding(s)	Essential Question(s)	Common Assessment(s)*	Common Resource(s) <i>Topic 17</i>
January	<b>Coordinates and the First Quadrant</b>	<p><b>Points</b></p> <ul style="list-style-type: none"> <li>Graph ordered pairs on a coordinate plane.</li> </ul>	<p><b>CC.2.3.5.A.1</b>  <b>Graph points in the first quadrant on the coordinate plane and interpret these points when solving real world and mathematical problems.</b>  <b>M05.C-G.1.1.1</b>  <b>M05.C-G.1.1.2</b></p> <p><i>2.9.5.C.</i>  <i>Identify location of points with fractional or decimal coordinates on a number line or on a 2- dimensional coordinate system.</i></p>	<p>The study of geometry requires thinking and doing.</p> <p>Geometry requires visualization, spatial reasoning, and geometric modeling to solve problems.</p>	<p>How can you describe locations and parts of space?</p>	<p><b>*see below</b></p>	<ul style="list-style-type: none"> <li><i>coordinate grid</i></li> <li><i>coordinate plane</i></li> <li><i>x-axis</i></li> <li><i>y-axis</i></li> <li><i>origin</i></li> <li><i>ordered pair</i></li> <li><i>x-coordinate</i></li> <li><i>y-coordinate</i></li> </ul>

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January/ February	<b>Geometric Figures</b>  <b>Congruent Shapes</b>	<ul style="list-style-type: none"> <li>Identify, describe, classify, and compare similar and congruent polygons in 2 and 3-D figures.</li> <li>Describe and classify 3-D figures including cubes, prisms and pyramids by the number of edges, faces or vertices, as well as the types of faces.</li> <li>Identify, measure, draw, classify, and compare angles.</li> <li>Identify, draw and label segments, rays, points, planes and coordinates.</li> <li>Identify and draw translations, reflections, rotations and lines of symmetry.</li> <li>Classify polygons as regular or irregular.</li> </ul>	<p><b>CC.2.3.5.A.2 Classify two dimensional figures into categories based on an understanding of their properties.</b></p> <p><b>M05.C-G.2.1.1</b></p> <p><i>2.9.5.A. Identify, describe, and define 1-, 2-, and 3- dimensional shapes and their related parts, and classify and compare 2- and 3 dimensional shapes on the basis of their properties.</i></p> <p><i>2.9.5.B. Predict and describe the result of a translation (slide), rotation (turn), or reflection (flip) of a 2- dimensional shape.</i></p> <p><i>2.10.5.A. Identify and compare parts of right triangles, including right angles, acute angles, hypotenuses, and legs.</i></p>	<p>Geometry requires visualization, spatial reasoning, and geometric modeling to solve problems.</p> <p>Two and three-dimensional shapes can be described and classified by their properties.</p> <p>Simple plane figures can be combined to make more complicated figures; and, complicated figures can be subdivided into simple plane figures.</p> <p>Congruent figures remain congruent through translations, reflections, and rotations.</p> <p>The defining properties and symmetry of various plane figures are unique.</p>	<p>How do we use geometry to help us make sense of the world?</p> <p>What is unique about each geometric shape?</p> <p>How do we classify different shapes, angles, and solid figures?</p> <p>How can you use a 2-D shape to represent a 3-D solid?</p> <p>How can you show motion with geometric figures?</p>	<p><b>TASD Common Assessment – 5<sup>th</sup> Grade Geometry Required Assessment</b></p> <p>Coordinate Grid/Flip Task</p>	<ul style="list-style-type: none"> <li>line</li> <li>point</li> <li>ray</li> <li>parallel lines</li> <li>intersecting lines</li> <li>perpendicular lines</li> <li>point</li> <li>line segment</li> <li>plane</li> <li>angle</li> <li>acute angle</li> <li>right angle</li> <li>obtuse angle</li> <li>straight angle</li> <li>vertex</li> <li>protractor</li> <li>degrees</li> <li>polygon</li> <li>regular polygon</li> <li>triangle</li> <li>quadrilateral</li> <li>pentagon</li> <li>hexagon</li> <li>octagon</li> <li>equilateral triangle</li> <li>isosceles triangle</li> <li>scalene triangle</li> <li>right triangle</li> <li>acute triangle</li> <li>obtuse triangle</li> </ul>	<ul style="list-style-type: none"> <li>parallelogram</li> <li>rectangle</li> <li>rhombus</li> <li>square</li> <li>generalization</li> <li>congruent figures</li> <li>solid figure</li> <li>face</li> <li>edge</li> <li>vertex</li> <li>cube</li> <li>prism</li> <li>cylinder</li> <li>cone</li> <li>pyramid</li> <li>net</li> <li>translation</li> <li>reflection</li> <li>rotation</li> <li>congruent transformation</li> <li>line symmetry</li> <li>line of symmetry</li> <li>rotational symmetry</li> </ul>

## Big Ideas, Enduring Understandings, and Essential Questions Per Unit of Study

### 2.1.5 Numbers and Operations -Relationships among numbers and number systems form the foundations of number sense and mathematics communication.

Month of Instruction	Title of Unit	Big Idea(s)	Standard(s) Addressed	Enduring Understanding(s)	Essential Question(s)	Common Assessment(s)	Common Resource(s)
February/ March	<b>Fractions</b>	<b>Equivalency</b> <ul style="list-style-type: none"> <li>• Understand fractions as division of two whole numbers.</li> <li>• Identify fractions as part of a whole, part of a set, part of an area, and locations on the number line.</li> <li>• Read and write symbolic notation for unit fractions and common fractions.</li> <li>• Recognize and name equivalent fractions.</li> <li>• Order fractions, including improper fractions (ex:3/2) and mixed numbers (ex:1½ ).</li> <li>• Add and subtract fractional numbers with like and unlike denominators.</li> </ul>	<p><b>CC.2.1.5.C.1</b>  <b>Use the understanding of equivalency to add and subtract fractions.</b>  <b>M05.A-F.1.1.1</b></p> <p><i>2.1.5.A.</i>  <i>Apply number patterns to count and compare values of fractions.</i></p> <p><i>2.1.5.B. &amp; C</i>  <i>Use number theory concepts and models to represent or rename fractions.</i></p> <p><i>2.2.5.B.</i>  <i>Add and subtract fractions and mixed numbers.</i></p> <p><b>CC.2.4.5.A.4</b>  <b>Solve problems involving computation of fractions using information provided in a line plot.</b>  <b>M05.D-M.2.1.1</b></p>	<p>Fractions expresses the division of a whole (region, set, or segment) into equal parts.</p> <p>A fraction is relative to the size of the whole.</p> <p>Fractions greater than 1 can be named using a whole number or improper fraction.</p> <p>In order to add or subtract two fractions with different denominators, you have to rename them so that the denominators are similar.</p>	<p>How can fractions be modeled, compared, and ordered?</p> <p>How do you rename a fraction?</p> <p>How are mixed numbers and improper fractions related?</p> <p>How do you add and subtract fractions?</p>	<p><b>TASD Common Assessment-5<sup>th</sup> Grade Numbers and Operations in Fractions Required Assessment</b>                      Stuffed With PizzaTask</p>	<p style="text-align: center;"><i>Topic 9 &amp; 10</i></p> <ul style="list-style-type: none"> <li>• <i>fraction</i></li> <li>• <i>numerator</i></li> <li>• <i>denominator</i></li> <li>• <i>simplest form</i></li> <li>• <i>benchmark fraction</i></li> <li>• <i>equivalent fractions</i></li> <li>• <i>renaming</i></li> <li>• <i>mixed number</i></li> <li>• <i>improper fraction</i></li> <li>• <i>common factor</i></li> <li>• <i>greatest common factor</i></li> <li>• <i>common denominator</i></li> <li>• <i>common multiple</i></li> <li>• <i>least common multiple</i></li> <li>• <i>least common denominator</i></li> </ul>

Month of Instruction	Title of Unit	Big Idea(s)	Standard(s) Addressed	Enduring Understanding(s)	Essential Question(s)	Common Assessment(s)	Common Resource(s) <i>Topic 11</i>
March	Fractions	<p><b>Multiplying and Dividing Fractions</b></p> <p><b>*DO NOT JUST PROVIDE THE ALGORITHMS TO STUDENTS!</b></p> <p>STUDENTS MUST BE PROVIDED OPPORTUNITIES TO EXPLORE AND BUILD CONCEPTUAL DEVELOPMENT OF THIS CONCEPT.</p>	<p><b>CC.2.1.5.C.2</b>  <b>Apply and extend Previous understandings of multiplication and division to multiply and divide fractions.</b>  <b>M05.A-F.2.1.1</b>  <b>M05.A-F.2.1.2</b>  <b>M05.A-F.2.1.3</b>  <b>M05.A-F.2.1.4</b></p>	<p>Fractions can be represented visually and in written form.</p> <p>Fractional amounts can be added and/or multiplied.</p> <p>Multiplication by a fraction is similar to division of whole numbers.</p> <p>If given a whole set, we can determine fractional amounts</p> <p>If given a fractional amount we can determine the whole set</p> <p>There are a variety of everyday occurrences where it is necessary to multiply and/or divide pieces of a whole.</p>	<p>How is multiplying or dividing whole numbers similar to multiplying or dividing fractions?</p> <p>How can multiplying fractions be modeled using area, a number line, or measurement models?</p> <p>How can dividing fractions be modeled using area, sets, or a number line?</p> <p>What is the relationship between multiplication by a fraction and division?</p>	*see above	<ul style="list-style-type: none"> <li>• <i>numerator</i></li> <li>• <i>denominator</i></li> <li>• <i>least common multiple</i></li> <li>• <i>least common denominator</i></li> <li>• <i>reciprocal</i></li> </ul>

**Big Ideas, Enduring Understandings, and Essential Questions Per Unit of Study**

**2.4.5 A Measurement, Data and Probability-** Attributes of objects can be measured using processes and quantified units, and using appropriate techniques, tools, and formulas.

Month of Instruction	Title of Unit	Big Idea(s)	Standard(s) Addressed	Enduring Understanding(s)	Essential Question(s)	Common Assessment(s)	Common Resource(s)
April	<b>Measurement and Conversions</b>	<p><b>One-eighth inch/ mm</b></p> <ul style="list-style-type: none"> <li>• Use a ruler with sixteenths marks to measure to the nearest one-eighth of an inch</li> <li>• Find the nearest eighth of an inch and nearest millimeter</li> <li>• Read pictorial measurements</li> <li>• Use appropriate abbreviations for inches</li> <li>• Measure using a variety of tools</li> <li>• Understand equivalent fractions</li> </ul> <p><b>Conversions</b></p> <ul style="list-style-type: none"> <li>• Explain the meaning of the prefixes: milli, centi, and kilo</li> <li>• Generalize the process of conversion using powers of 10 (explore patterns)</li> <li>• Explain the difference between converting in the Customary system vs Metric system</li> </ul> <p><b>Temperature</b></p> <ul style="list-style-type: none"> <li>• Demonstrate how to read a thermometer</li> </ul> <p><b>Time</b></p> <ul style="list-style-type: none"> <li>• Calculate the elapsed time when given the start and end time</li> </ul>	<p><b>CC.2.4.5.A.1 Solve problems using conversions within a given measurement system.</b> <b>M05.D-M.1.1.1</b></p> <p><i>2.3.5.D. Perform basic conversions within a system.</i></p> <p><i>2.3.5.A. Use concrete objects to demonstrate the meaning of measurement quantities (e.g., perimeter, area, weight, capacity).</i></p> <p><i>2.3.5.B. Select and use appropriate instruments and units for measuring quantities to a specified level of accuracy.</i></p>	<p>Measurement processes are used in everyday life to describe and quantify the world.</p> <p>There is a need for measuring in standard units.</p> <p>Measurements in the real world are approximate, in part because of the instruments used and because of human error in reading the scales of the instruments.</p>	<p>How does measurement keep our world organized?</p> <p>What is a precise measurement?</p> <p>How might measurement errors occur?</p> <p>How do you measure an object's mass?</p> <p>How do you convert from one unit of customary length to another?</p> <p>How do you convert from one unit of metric length to another?</p>	<p><b>TASD Common Assessment- 5<sup>th</sup> Grade Data and Measurement Required Assessment Bug Task</b></p>	<p><i>Topic 12 &amp; 14</i></p> <ul style="list-style-type: none"> <li>• <i>customary units of measure</i></li> <li>• <i>metric units of measure</i></li> <li>• <i>ton</i></li> <li>• <i>capacity</i></li> <li>• <i>quart</i></li> <li>• <i>pint</i></li> <li>• <i>gallon</i></li> <li>• <i>cup</i></li> <li>• <i>fluid ounce</i></li> <li>• <i>milliliter</i></li> <li>• <i>liter</i></li> <li>• <i>weight</i></li> <li>• <i>mass</i></li> <li>• <i>milligram</i></li> <li>• <i>gram</i></li> <li>• <i>kilogram,</i></li> <li>• <i>elapsed time</i></li> <li>• <i>Fahrenheit</i></li> <li>• <i>Celsius</i></li> </ul>

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April	Measurement and Calculations	<p><b>Perimeter and Area</b></p> <ul style="list-style-type: none"> <li>• Compute perimeter and area in real world situations</li> <li>• Compute perimeter and area of irregular shapes</li> <li>• Understand and apply formulas</li> </ul> <p><b>Volume</b></p> <ul style="list-style-type: none"> <li>• Define volume</li> <li>• Illustrate examples of volume</li> <li>• Explain the relationship of area of a rectangle and volume—the volume is the area of the rectangle layered multiple times which is the height.</li> <li>• Use appropriate units</li> <li>• Use a formula</li> </ul>	<p><b>CC.2.4.5.A.5</b>  <b>Apply concepts of volume to solve problems and relate volume to multiplication and to addition.</b>  <b>M05.D-M.3.1.1</b>  <b>M05.D-M.3.1.2</b></p> <p><i>2.3.5.C.</i>  <i>Calculate perimeter and area, and sums and differences of measurements.</i></p> <p><i>2.3.5.F.</i>  <i>Estimate and verify measurements of length, perimeter, area, volume, capacity, temperature, time, weight, and angles.</i></p>	<p>Measurements are approximations and different units affect precision.</p> <p>There is a need for measuring in standard units.</p> <p>The distance around a figure is its perimeter.</p> <p>Area is the number of square units needed to cover a surface.</p> <p>Volume is the number of cubic units that fit inside a space figure.</p>	<ul style="list-style-type: none"> <li>• What is the difference between perimeter and area of a 2-D figure?</li> <li>• How is the perimeter of a rectangle determined?</li> <li>• How is the area of a rectangle determined?</li> <li>• How can area, perimeter, and volume help us to solve problems in everyday life?</li> </ul>	*see above	<ul style="list-style-type: none"> <li>• <i>meter</i></li> <li>• <i>centimeter</i></li> <li>• <i>millimeter</i></li> <li>• <i>kilometer</i></li> <li>• <i>perimeter</i></li> <li>• <i>formula</i></li> <li>• <i>area</i></li> <li>• <i>base</i></li> <li>• <i>height</i></li> </ul>

## Big Ideas, Enduring Understandings, and Essential Questions Per Unit of Study

### 2.4.6 B Measurement, Data and Probability- Mathematical models are used to predict and make inferences about data.

Month of Instruction	Title of Unit	Big Idea(s)	Standard(s) Addressed <i>*This is a 6th Grade Common Core Standard for Mathematical Content. However, PDE still has probability as a fifth grade standard.</i>	Enduring Understanding(s)	Essential Question(s)	Common Assessment(s)	Common Resource(s)  <i>Topic 20</i>
May	Probability	<b>Likelihood and Outcomes</b>  • Define probability  • Describe the connection of probability with the terms likely, unlikely, certain, impossible or equally likely  • Write a probability as a fraction and a decimal	<b>CC.2.4.6.B.1 Demonstrate an understanding of statistical variability by displaying, analyzing, and summarizing distributions.</b> <b>M06.D-S.1.1.1</b> <b>M06.D-S.1.1.2</b> <b>M06.D-S.1.1.3</b> <b>M06.D-S.1.1.4</b>  2.7.5.A. <i>Predict and calculate the likelihood of simple events.</i> 2.7.5.B. <i>Predict and determine why some outcomes of a particular event are certain, more likely, less likely, equally likely, or impossible.</i> 2.7.5.C. <i>Express probabilities as fractions and/or decimals.</i> 2.7.5.D. <i>List all possible combinations and arrangements of outcomes of an experiment (e.g., tree diagrams, matrices)</i> 2.7.5.E. <i>Compare predictions based on theoretical probability and experimental results.</i>	Probability is the measurement of the likelihood of events.  The measure of the likelihood of an event can be represented by a number from 0 to 1, with <i>zero</i> representing “impossible” and <i>one</i> representing “certain.”	How can you use probability to make predictions?  How can we make predictions when we are faced with uncertainty?	<b>None required</b>	<ul style="list-style-type: none"> <li>• <i>fraction</i></li> <li>• <i>tree diagram</i></li> <li>• <i>sample space</i></li> <li>• <i>probability</i></li> <li>• <i>equally likely</i></li> <li>• <i>prediction</i></li> </ul>