

## Course Description Grade 7 Mathematics

This course enables students to develop generalizations of mathematical ideas and methods through the exploration of applications, problem solving, the effective use of technology, and abstract reasoning.

Unit Titles	Overall Expectations
<b>1. Factors and Exponents</b>	Using Multiples Factoring Powers Square Roots Order of Operations
<b>2. Ratio, Rate, and Percent</b>	Solving Ratio Problems Solving Rate Problems Communicating about Ratio and Rate Problems Ratios as Percents Solving Percent Problems Decimal Multiplication
<b>3. Data Management</b>	Avoiding Bias in Data Collection Using a Database Using a Spreadsheet Frequency Tables and Stem-and-Leaf Plots Median, Mean, and Mode Communicating about Graphs
<b>4. Patterns and Relationships</b>	Applying Pattern Rules Using a Table of Values to Represent a Sequence Solve Problems Using a Table of Values Using a Scatter Plot to Represent a Sequence
<b>5. Addition and Subtraction of Integers</b>	Comparing Positive and Negative Numbers Adding Integers Using the Zero Principle Adding Integers That Are Far from Zero Integer Addition Strategies Using Counters to Subtract Integers Using Number Lines to Subtract Integers
<b>6. Variables Expressions and Equations</b>	Using Variables to Write Pattern Rules Creating and Evaluating Expressions Solving Equations by Inspections Solving Equations by Systematic Trial

<p><b>7. Fractions Operations</b></p>	<p>Adding Fractions with Models          Multiplying a Whole Number by a Fraction          Subtracting Fractions with Models          Subtracting Fractions with Grids          Adding and Subtracting Mixed Numbers          Communicating about Estimation Strategies          Adding and Subtracting Using Equivalent Fractions</p>
<p><b>8. 2-D Measurement</b></p>	<p>Area of a Parallelogram          Area of a Triangle          Area of a Trapezoid          Calculating the Area of a Complex Shape          Communicating about Measurement</p>
<p><b>9. 2-D Geometry</b></p>	<p>Comparing Positions on a Grid          Translations          Reflections          Rotations          Communicating about Geometrical Patterns          Tessellating Designs</p>
<p><b>10. 3-D Geometry</b></p>	<p>Building Objects from Nets          Top, Front, and Side Views of Cube Structures          Top, Front, and Side Views of 3-D Objects          Isometric Drawings of Cube Structures</p>
<p><b>11. Surface Area and Volumes</b></p>	<p>Surface Area of a Rectangular Prism          Volume of a Rectangular Prism          Solve Problems by Guessing and Testing          Relating the Dimensions of a Rectangular Prism to Its Volume</p>
<p><b>12. Probability</b></p>	<p>Calculating Probability          Solve Problems Using Organized Lists          Using Tree Diagrams to Calculate Probability          Applying Probabilities</p>