

## Course Description Grade 8 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. Number Relationships</b>	Identifying Prime and Composite Numbers Prime Factorization Common Factors and Common Multiples Calculating Powers Expanded Form and Scientific Notation Square Roots Order of Operations Communication about Number Problems
<b>2. Proportional Relationships</b>	Expressing Fractions as Decimals Multiplying and Dividing Decimals Ratios Rates Representing Percent Solving Percent Problems Solving Percent Problems Using Decimals Solve Problems by Changing Your Point of View
<b>3. Collecting, Organizing, and Displaying Data</b>	Organizing and Presenting Data Histograms Mean, Median, and Mode
<b>4. Patterns and Relationships</b>	Creating Pattern Rules from Models The General Term of a Sequence Relating Number Sequences to Graphs
<b>5. Measurement of Circles</b>	Calculating Circumference Calculating Area Solve Problems by Working Backward
<b>6. Integer Operations</b>	Relating Integer Subtraction to Addition Multiplying Integers Dividing Integers Order of Operations with Integers

<p><b>7. Transformations</b></p>	<p>Coordinates of Points on a Grid          Translations on a Coordinate System          Reflections and Rotations</p>
<p><b>8. Variables, Expressions and</b></p>	<p>Solving Equations by Graphing          Creating and Evaluating Algebraic Expressions          Solving Equations I          Solving Equations II          Communicating about Equations</p>
<p><b>9. Fraction Operations</b></p>	<p>Adding and Subtracting Fractions Less Than 1          Adding and Subtracting Fractions Greater Than 1          Fractions of Fractions          Multiplying Fractions          Multiplying Fractions Greater Than 1          Dividing Fractions I          Dividing Fractions II          Order of Operations</p>
<p><b>10. 3-D Geometry</b></p>	<p>Intersecting Lines, Parallel Lines, and Transversals          Angles in a Triangle          Applying the Pythagorean Theorem          Solve Problems Using Logical Reasoning</p>
<p><b>11. Surface Area and Volume</b></p>	<p>Surface Area of a Cylinder          Volume of a Cylinder          Solve Problems Using Diagrams          Polyhedron Faces, Edges, and Vertices</p>
<p><b>12. Probability</b></p>	<p>Theoretical and Experimental Probabilities          Calculating Probabilities          Solve Problems Using Organized Lists          Using Simulations to Determine Probability</p>