UNIT 1: Grade 8 Review

This unit I will…

- **Add, subtract, multiply and divide integers**

- **Evaluate expressions following the correct order of operations**

- **Add, subtract, multiply and divide rational numbers**

- **Correctly apply the Pythagorean Theorem**

UNIT 2: Polynomials

This unit I will…

- Use exponent laws appropriately
- Collect like terms
- Add and subtract polynomials
- Expand (using distributive property) and simplify polynomial expressions

UNIT 3: Solving Equations

This unit I will…

- Solve simple and multi-step equations (including equations with fractions)

- Solve problems applying per cent, ratio, rate and proportion

- Rearrange formulas involving variables in the first degree

- Solve word problems that can be modelled with an equation with one variable

UNIT 4: Linear Relations

This unit I will…

- interpret the meanings of points on a scatter plot
- describe trends and relationships in data and make inferences from the data
- construct tables of value , graphs and equations to represent linear relations of situations
- construct tables of value, scatter plots and lines or curves of best fit for collected data
- identify properties of linear relations and apply these to determine if a relation is linear
- determine the equation of a line of best fit
- determine an unknown value of a linear relation using a table of values, the equation, or by interpolating or extrapolating from a graph
- describe a situation to explain the events illustrated on a graph or vice-versa

UNIT 5: Analytic Geometry I

This unit I will…

- Compare the properties of direct and partial variation

- Determine and use various formulas for slope

- Understand that slope is a rate of change

- Determine if a relation is linear or non-linear

UNIT 6: Analytic Geometry II
This unit I will…

- Identify the equation of a horizontal and vertical line
- Graph a line in $y = mx + b$ form
- Identify a linear equation in standard form
- Graph a line using intercepts
- Understand the properties of parallel and perpendicular lines
- Find an equation of a line given: Slope and y-intercept, Slope and a point, Two points
- Graph two lines on a grid and determine the point of intersection (POI)
- Interpret the meaning of the POI in a real world context

UNIT 7: Geometric Relations

This unit I will…

- Describe the properties and relationships of the interior and exterior angles of polygons
- Describe the properties of polygons (eg, midpoints, diagonals, etc.)
- Illustrate a statement about a geometric property by demonstrating with multiple examples OR deny the statement based on a counter example.
- Solve problems involving the above situations

UNIT 8: 2-D Measurements

This unit I will…

- Solve problems involving the areas and perimeters of composite and 2-D shapes

- Determine maximum area and minimum perimeter of a rectangle given fixed information

UNIT 9: 3-D Measurements

This unit I will…

- Use the formulas for the volume and surface area of a prism, pyramid, cone and sphere
- Solve problems involving the surface areas and volumes prisms, pyramids, cylinders, cones, and spheres including composite figures
- Determine minimum surface area and maximum volume of a square-based prisms
- Solve word problems involving the max/min of geometric shapes