Principles of Mathematics, Grade 9, Academic (MPM1D)

Prerequisite: 80% or greater in Grade 8 Math

Text Book: None Available

Unit 1 – Numbers and Operations
- ❑ Numbers
- ❑ Factors & Multiples
- ❑ Operation with Integers and Rational Numbers in Decimal Form
- ❑ Operations with Rational Numbers in Fractional Form
- ❑ Inverse Operations
- ❑ Exponent Laws and Properties
- ❑ Evaluating Expressions with Multiple Operations

Unit 2 – Algebra
- ❑ Algebraic Expressions
- ❑ Polynomials, Multiplying and Dividing Monomials
- ❑ Powers of Monomials, Simplifying Algebraic Expressions Involving Products
- ❑ Quotients and Powers of Monomials
- ❑ Multiplying and Dividing a Polynomial by a Monomial
- ❑ Simplifying Polynomial Expressions, Factoring

Unit 3 – Equations
- ❑ Solving Simple Equations
- ❑ Solving Equations with Brackets
- ❑ Solving Equations with Fractions
- ❑ Using and Rearranging Formulas
- ❑ Solving Problems Involving One Variable Using Equations
- ❑ Solving Ratio, Rate and Percent Problems Using Equations

Unit 4 – Euclidean Geometry
- ❑ Deductive Reasoning
- ❑ Geometric Terminology and Notation
- ❑ Postulates and Theorems
- ❑ Applying Postulates and Theorems
- ❑ Proofs and Counterexamples
- ❑ Properties of Midsegments and Diagonals in Quadrilaterals

Unit 5– Analytic Geometry
- ❑ The Coordinate Plane
- ❑ Sets of Points and Lines on the Coordinate Planes
- ❑ Key Properties of Lines: Slopes and Intercepts
- ❑ Equations of Lines: Slope y-Intercept Form, Point-Slope Form and Standard Form
- ❑ Changing Between Forms and Formulas for Slope and Intercepts for Equations in Standard Form
- ❑ Parallel and Perpendicular Lines
- ❑ Finding the Equation of a Line
- ❑ Graphing a Line Given Its Equation
- ❑ Finding the Point of Intersection of Two Lines

Unit 6 – Relations and Statistics
- ❑ Defining, Representing and Analyzing Relations
- ❑ Determining the Type of a Relation Given Its Table of Values or Equations
- ❑ Describing a relation Given Its Graph or Equation
- ❑ Comparing Relations
- ❑ Finding the Point of Intersection of Two Linear Relations
- ❑ Scatter Plots and Line of Best Fit

Unit 7 – Measurement of Plane and Solid Figures
- ❑ Terms and Formulas
- ❑ Developing Formulas
- ❑ Perimeter and Area of Composite Plane Figures
- ❑ Surface Area and Volume of Solid Figures
- ❑ Effect on Surface Area and Volume of Solid Figures When Varying the Dimensions
- ❑ Optimizing Geometric Figures

Evaluation:

	Achievement Categories				
Assessment Method	Knowledge/ Understanding	Thinking/Inquiry/ Problem Solving	Communication	Application	Total
Unit Tests	25.0%	10.0%	10.0%	10.0%	55.0%
Assignments	10.0%			5.0%	15.0%
Exam - EQAO		5.0%			5.0%
Exam - School	10.0%	5.0%	5.0%	5.0%	25.0%
Total	45.0%	20.0%	15.0%	20.0%	100.0%

Test Policy: Refer to the Banting Memorial High School Mathematics Department test Policy