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| **Subject** | **Grade** | **Level** | **Code** | **Prerequisite** |
| Mathematics | 9 | Academic | MPM1DI | Grade 8 |

**Course Description**

This course enables students to develop an understanding of mathematical concepts related to algebra, analytic geometry, measurement, geometry and linear systems through investigation, the effective use of technology, and abstract reasoning. Students will investigate relationships, which they will then generalize as equations of lines, and will determine the connections between different representations of a linear relation. They will also explore relationships that emerge from the measurement of three-dimensional figures and two-dimensional shapes. Students will reason mathematically and communicate their thinking as they solve multi-step problems.

**Ministry Website**

<http://www.edu.gov.on.ca/eng/curriculum/secondary/math910curr.pdf>

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| **70%** | **Unit of Study** | **Overall Expectations**  **(Essential Understandings)** | **Assessment** |
| **Numeracy Skills** | * Demonstrate an understanding of the exponent rules of multiplication and division, and apply them to simplify expressions | * Variety of formative assessments in the form of quizzes and assignments (1-2%) * Summative unit test (~10%) |
| **Algebra** | * Manipulate numerical and polynomial expressions | * Variety of formative assessments in the form of quizzes and assignments (1-2%) * Summative unit test (~10%) |
| **Equations** | * Solve first-degree equations * Rearrange formulas involving variables in the first degree * Solve problems that can be modelled with first degree equations | * Variety of formative assessments in the form of quizzes and assignments (1-2%) * Summative unit test (~10%) |
| **Graphing and Linear Relations** | * Apply data-management techniques to investigate relationships between two variables * Demonstrate an understanding of the characteristics of a linear relation * Connect various representations of a linear relation * Determine the relationship between the form of an equation and the shape of its graph with respect to linearity and non-linearity | * Variety of formative assessments in the form of quizzes and assignments (1-2%) * Summative unit test (~10%) |
| **Analytic Geometry** | * Determine, through investigation, the properties of the slope and y-intercept of a linear relation * Solve problems involving linear relations | * Variety of formative assessments in the form of quizzes and assignments (1-2%) * Summative unit test (~10%) |
| **Systems of Linear Equations \*\*MPM1DW only** | * Model and solve problems involving the intersection of two straight lines. | * Variety of formative assessments in the form of quizzes and assignments (1-2%) * Summative unit test (~8%) |
| **Measurement** | * Determine, through investigation, the optimal values of various measurements * Solve problems involving the measurements of two-dimensional shapes and surface areas and volumes of three-dimensional figures | * Variety of formative assessments in the form of quizzes and assignments (1-2%) * Summative unit test (~10%) |
| **30%** | **Final Exam** | * Will include all of the overall expectations listed within the units of study | * EQAO %TBA * Summative Final Exam |