



Principles of Mathematics, Grade 9, Academic MPM 1D

DEPARTMENT TITLE

COURSE INFORMATION

DEPARTMENT HEAD Mr. J. Hargot

CREDIT VALUE 1.0

COURSE TEACHER Mr. A. Cabilan

PREREQUISITE None

TEXTBOOK Principles of Mathematics 9
(McGraw-Hill Ryerson)

MINISTRY DOCUMENT The Ontario Curriculum, Grades 9 and 10,
Mathematics, 2005 (Revised)

COURSE DESCRIPTION

This course enables students to develop an understanding of mathematical concepts related to algebra, analytic geometry, and measurement and geometry 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.

ONTARIO CATHOLIC GRADUATE EXPECTATIONS

This course enables students to develop effective communication skills, and become reflective and creative thinkers. Self-directed learning will be promoted with the intent of producing responsible, life-long learners. Students will learn to collaborate for the contribution of good of others, in service to the classroom, school and community.

COURSE CONTENT

TEACHING STRATEGIES

- UNIT 1** Review of Grade 8 - Number Sense
- UNIT 2** Review of Grade 8 – Ratio and Proportions
- UNIT 3** Polynomials
- UNIT 4** Equations
- UNIT 5** Relations and Modelling with Graphs
- UNIT 6** Analytic Geometry
- UNIT 7** Angles and Geometrical Relationship
- UNIT 8** Measurement and Geometry
- UNIT 9** EQAO Preparation

To promote student engagement and success, a variety of instructional approaches and management strategies will be used in the delivery of this course. These methods may include, but are not limited to:

- using assessment practices that inform instruction
- establishing learning goals and success criteria
- providing descriptive feedback
- implementing direct instruction of course material
- using effective questioning techniques
- incorporating literacy and numeracy strategies across all subject areas
- employing differentiated instruction to respond to students' needs
- providing opportunities for student practice and scaffolded instruction
- using a variety of learning materials and technology that meet the needs of the learner

BOARD AND MINISTRY INITIATIVES

There are many opportunities to integrate a variety of board and ministry initiatives in the classroom. In the spirit of Each Belongs, teachers create a safe and supportive environment where all students feel included and respected. Teachers plan rich tasks, select diverse texts, and engage students in experiences that allow them to explore a variety of topics such as Environmental Education, First Nations, Metis, and Inuit Studies, Healthy Relationships, Equity and Inclusive Practices, Financial Literacy, and Career and Life Planning.

OVERALL CURRICULUM EXPECTATIONS

NUMBER SENSE AND ALGEBRA

By the end of this course, students will:

- demonstrate an understanding of the exponent rules of multiplication and division, and apply them to simplify expressions;
- manipulate numerical and polynomial expressions, and solve first-degree equations.

ANALYTIC GEOMETRY

LINEAR RELATIONS

By the end of this course, students will:

- 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.

MEASUREMENT AND GEOMETRY

By the end of this course, students will:

- determine the relationship between the form of an equation and the shape of its graph with respect to linearity and non-linearity;
- determine, through investigation, the properties of the slope and y -intercept of a linear relation;
- solve problems involving linear relations.

By the end of this course, students will:

- determine, through investigation, the optimal values of various measurements;
- solve problems involving the measurements of two-dimensional shapes and the surface areas and volumes of three-dimensional figures;
- verify, through investigation facilitated by dynamic geometry software, geometric properties and relationships involving two-dimensional shapes, and apply the results to solving problems.

ASSESSMENT AND EVALUATION

The development of learning skills and work habits are an integral part of student learning and influence student achievement. They will be included as a formal part of the assessment and evaluation process under the following categories: responsibility; organization; independent work; collaboration; initiative; self-regulation. Learning skills and work habits will be assessed through a variety of teacher strategies and will be formally reported on the Provincial Report Card according to the following scale: **E**-Excellent; **G**-Good; **S**-Satisfactory; **N**-Needs Improvement.

CATEGORY	WEIGHTING
Knowledge and Understanding	25 %
Application	25 %
Thinking	10 %
Communication	10 %
Final Exam/EQAO	30 %

ACADEMIC DISHONESTY

CHEATING AND PLAGIARISM

Learning tasks that students complete (student work-tests, quizzes, assignments, etc.) and submit for assessment and evaluation must be their own work. Cheating and plagiarism is a serious offence that will not be condoned and will result in academic consequences as outlined in the HWCDSB *Cheating and Plagiarism Policy* in the [School Agenda Book](#) and on the [School Website](#).

LATE AND MISSED ASSIGNMENTS

Students are expected to submit all work within the time frame specified by the teacher. There will be consequences for not completing assignments for evaluation, and/or for submitting assignments late, and/or for being absent on the day of tests and quizzes without proper documentation as outlined in HWCDSB *Late and Missed Assignment Policy* in the [School Agenda Book](#) and on the [School Website](#).