

# Grimsby District Secondary School

## Mathematics

### Foundations of Mathematics

**MFM1P1**

This course enables students to develop an understanding of mathematical concepts related to introductory algebra, proportional reasoning, and measurement and geometry through investigation, the effective use of technology, and hands-on activities. Students will investigate real-life examples to develop various representations of linear relations, and will determine the connections between the representations. They will also explore certain relationships that emerge from the measurement of three-dimensional figures and two-dimensional shapes. Students will consolidate their mathematical skills as they solve problems and communicate their thinking. Successful completion of this course prepares students for Foundations of Mathematics, Grade 10, Applied (MFM2P). (Note: Students who wish to take Principles of Mathematics, Grade 10, Academic [MPM2D] after completing this course will need to take a transfer course.) Learning through hands-on activities and the use of concrete examples is an important aspect of this course.

**CREDIT:** 1

**TYPE:** Applied

**GRADE:** 9

### Principles of Mathematics

**MPM1D1**

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. Successful completion of this course prepares students for Principles of Mathematics, Grade 10, Academic (MPM2D) or Foundations of Mathematics, Grade 10, Applied (MFM2P). Learning through abstract reasoning is an important aspect of this course.

**CREDIT:** 1

**TYPE:** Academic

**GRADE:** 9

### Mathématiques

**MPM1DF**

This course is part of the Extended French Package. This course is delivered in French and is the same curriculum as the Grade 9 Principles of Mathematics - Academic course. For a more details review MPM1D's course description.

**COURSE NOTE:** This courses is part of a package for students in the Extended French Program.

**CREDIT:** 1

**TYPE:** Academic

**GRADE:** 9

**COREQUISITES:** If you take this course, you must also take FEF1D1 - Extended French

If you take this course, you must also take SNC1DF - Sciences

If you take this course, you must also take CGC1DF - Géographie du Canada

If you take this course, you must also take ENG1D1 - English

### Foundations of Mathematics

**MFM2P1**

This course enables students to consolidate their understanding of linear relations and extend their problem-solving and algebraic skills through investigation, the effective use of technology, and hands-on activities. Students will develop and graph equations in analytic geometry; solve and apply linear systems, using real-life examples; and explore and interpret graphs of quadratic relations. Students will investigate similar triangles, the trigonometry of right triangles, and the measurement of three-dimensional figures. Students will consolidate their mathematical skills as they solve problems and communicate their thinking.

**CREDIT:** 1

**TYPE:** Applied

**GRADE:** 10

**PREREQUISITE:** MFM1P1 - Foundations of Mathematics **or** MPM1D1 - Principles of Mathematics

### Principles of Mathematics

**MPM2D1**

This course enables students to broaden their understanding of relationships and extend their problem-solving and algebraic skills through investigation, the effective use of technology, and abstract reasoning. Students will explore quadratic relations and their applications; solve and apply linear systems; verify properties of geometric figures using analytic geometry; and investigate the trigonometry of right and acute triangles. Students will reason mathematically and communicate their thinking as they solve multi-step problems.

**CREDIT:** 1

**TYPE:** Academic

**GRADE:** 10

**PREREQUISITE:** MPM1D1 - Principles of Mathematics **or** MFM1P1 - Foundations of Mathematics

---

## **Mathématiques**

**MPM2DF**

This course is part of the Extended French Package. This course is delivered in French and is the same curriculum as the Grade 10 Principles of Mathematics - Academic course. For a more details review MPM2D1's course description.

**COURSE NOTE:** This courses is part of a package for students in the Extended French Program.

**CREDIT:** 1

**TYPE:** Academic

**GRADE:** 10

**PREREQUISITE:** MPM1DF - Mathématiques

**COREQUISITES:** If you take this course, you must also take FEF2D1 - Extended French

If you take this course, you must also take CHC2DF - Histoire du Canada au XXe siècle

If you take this course, you must also take SNC2DF - Sciences

If you take this course, you must also take ENG2D1 - English

If you take this course, you must also take CHV2OH - Civics

If you take this course, you must also take GLC2OH - Career Studies

---

## **Mathematics of Personal Finance**

**MBF3C1**

This course enables students to broaden their understanding of mathematics as a problem solving tool in the real world. Students will extend their understanding of quadratic relations; investigate situations involving exponential growth; solve problems involving compound interest; solve financial problems connected with vehicle ownership; develop their ability to reason by collecting, analysing, and evaluating data involving one variable; connect probability and statistics; and solve problems in geometry and trigonometry. Students will consolidate their mathematical skills as they solve problems and communicate their thinking.

**CREDIT:** 1

**TYPE:** College

**GRADE:** 11

**PREREQUISITE:** MFM2P1 - Foundations of Mathematics **or** MPM2D1 - Principles of Mathematics **or** MPM2DF - Mathématiques

---

## **Functions**

**MCF3M1**

This course introduces basic features of the function by extending students' experiences with quadratic relations. It focuses on quadratic, trigonometric, and exponential functions and their use in modelling real-world situations. Students will represent functions numerically, graphically, and algebraically; simplify expressions; solve equations; and solve problems relating to applications. Students will reason mathematically and communicate their thinking as they solve multi-step problems.

**CREDIT:** 1

**TYPE:** University/College

**GRADE:** 11

**PREREQUISITE:** MFM2P1 - Foundations of Mathematics **or** MPM2D1 - Principles of Mathematics **or** MPM2DF - Mathématiques

---

## **Functions and Relations**

**MCR3U1**

This course introduces the mathematical concept of the function by extending students' experiences with linear and quadratic relations. Students will investigate properties of discrete and continuous functions, including trigonometric and exponential functions; represent functions numerically, algebraically, and graphically; solve problems involving applications of functions; investigate inverse functions; and develop facility in determining equivalent algebraic expressions. Students will reason mathematically and communicate their thinking as they solve multi-step problems.

**COURSE NOTE:** Grade 11 University Physics (SPH3U1) would be recommended if a student plans to take Calculus and Vectors (MCV4U1) in the future. It is recommended that students studying Grade 11 Functions (MCR3U1) would have achieved B+ in Grade 10 Academic Mathematics (MPM2D1).

**CREDIT:** 1

**TYPE:** University

**GRADE:** 11

**PREREQUISITE:** MPM2D1 - Principles of Mathematics **or** MPM2DF - Mathématiques

---

## **Mathematics for Work and Everyday Life**

**MEL3E1**

This course enables students to broaden their understanding of mathematics as it is applied in the workplace and daily life. Students will solve problems associated with earning money, paying taxes, and making purchases; apply calculations of simple and compound interest in saving, investing, and borrowing; and calculate the costs of transportation and travel in a variety of situations. Students will consolidate their mathematical skills as they solve problems and communicate their thinking. This course will be available 2010 - 2011 at Grimsby Secondary School. It is available every other year and is alternated with Grade 12 Mathematics for Work and Everyday Life(MEL4E1).

**CREDIT:** 1

**TYPE:** Workplace

**GRADE:** 11

**PREREQUISITE:** MFM1P1 - Foundations of Mathematics

---

## **College and Apprenticeship Mathematics**

**MAP4C1**

This course enables students to broaden their understanding of real-world applications of mathematics. Students will analyse data using statistical methods; solve problems involving applications of geometry and trigonometry; solve financial problems connected with annuities, budgets, and renting or owning accommodation; simplify expressions; and solve equations. Students will reason mathematically and communicate their thinking as they solve multi-step problems. This course prepares students for college programs in areas such as business, health sciences, and human services, and for certain skilled trades.

**CREDIT:** 1

**TYPE:** College

**GRADE:** 12

**PREREQUISITE:** MBF3C1 - Mathematics of Personal Finance **or** MCF3M1 - Functions **or** MCR3U1 - Functions and Relations

---

## **Mathematics for College Technology**

**MCT4C1**

This course enables students to extend their knowledge of functions. Students will investigate and apply properties of polynomial, exponential, and trigonometric functions; continue to represent functions numerically, graphically, and algebraically; develop facility in simplifying expressions and solving equations; and solve problems that address applications of algebra, trigonometry, vectors, and geometry. Students will reason mathematically and communicate their thinking as they solve multi-step problems. This course prepares students for a variety of college technology programs.

**CREDIT:** 1

**TYPE:** College

**GRADE:** 12

**PREREQUISITE:** MCF3M1 - Functions **or** MCR3U1 - Functions and Relations

---

## **Calculus and Vectors**

**MCV4U1**

This course builds on students' previous experience with functions and their developing understanding of rates of change. Students will solve problems involving geometric and algebraic representations of vectors and representations of lines and planes in three-dimensional space; broaden their understanding of rates of change to include the derivatives of polynomial, sinusoidal, exponential, rational, and radical functions; and apply these concepts and skills to the modelling of real-world relationships. Students will also refine their use of the mathematical processes necessary for success in senior mathematics. This course is intended for students who choose to pursue careers in fields such as science, engineering, economics, and some areas of business, including those students who will be required to take a university-level calculus, linear algebra, or physics course.

**COURSE NOTE:** The Advanced Functions course (MHF4U) must be taken prior to or concurrently with Calculus and Vectors (MCV4U).

**CREDIT:** 1

**TYPE:** University

**GRADE:** 12

**PREREQUISITE:** MHF4U1 - Advanced Functions

**COREQUISITES:** If you take this course, you must also take MHF4U1 - Advanced Functions

---

## **Mathematics of Data Management**

**MDM4U1**

This course broadens students' understanding of mathematics as it relates to managing data. Students will apply methods for organizing and analysing large amounts of information; solve problems involving probability and statistics; and carry out a culminating investigation that integrates statistical concepts and skills. Students will also refine their use of the mathematical processes necessary for success in senior mathematics. Students planning to enter university programs in business, the social sciences, and the humanities will find this course of particular interest.

**CREDIT:** 1

**TYPE:** University

**GRADE:** 12

**PREREQUISITE:** MCF3M1 - Functions **or** MCR3U1 - Functions and Relations

---

## **Mathematics for Work and Everyday Life**

**MEL4E1**

This course enables students to broaden their understanding of mathematics as it is applied in the workplace and daily life. Students will investigate questions involving the use of statistics; apply the concept of probability to solve problems involving familiar situations; investigate accommodation costs, create household budgets, and prepare a personal income tax return; use proportional reasoning; estimate and measure; and apply geometric concepts to create designs. Students will consolidate their mathematical skills as they solve problems and communicate their thinking.

**CREDIT:** 1

**TYPE:** Workplace

**GRADE:** 12

**PREREQUISITE:** MEL3E1 - Mathematics for Work and Everyday Life **or** MFM1P1 - Foundations of Mathematics **or** Not available 2010-2011. This course will be available again in 2011-2012.

---

## **Advanced Functions**

**MHF4U1**

This course extends students' experience with functions. Students will investigate the properties of polynomial, rational, logarithmic, and trigonometric functions; develop techniques for combining functions; broaden their understanding of rates of change; and develop facility in applying these concepts and skills. Students will also refine their use of the mathematical processes necessary for success in senior mathematics. This course is intended both for students taking the Calculus and Vectors course as a prerequisite for a university program and for those wishing to consolidate their understanding of mathematics before proceeding to any one of a variety of university programs.

**CREDIT:** 1

**TYPE:** University

**GRADE:** 12

**PREREQUISITE:** MCR3U1 - Functions and Relations **or** MCT4C1 - Mathematics for College Technology