

MATHEMATICS DEPARTMENT

Courses:

Grade 9

- ◆ Principles of Mathematics
- ◆ Foundations of Mathematics
- ◆ Essential Mathematics

Grade 10

- ◆ Principles of Mathematics
- ◆ Foundations of Mathematics
- ◆ Essential Mathematics

Grade 11

- ◆ Functions
- ◆ Functions and Applications
- ◆ Foundations for College Mathematics
- ◆ Mathematics for Work and Everyday Life

Grade 12

- ◆ Advanced Functions
- ◆ Calculus and Vectors
- ◆ Mathematics of Data Management
- ◆ Mathematics for College Technology
- ◆ Foundations for College Mathematics
- ◆ Mathematics for Work and Everyday Life

COMPUTER STUDIES (page 23)

Grade 10

- ◆ Introduction to Computer Studies

Grade 11

- ◆ Introduction to Computer Programming
- ◆ Introduction to Computer Science

Grade 12

- ◆ Computer Programming
- ◆ Computer Science

BE A MATH TUTOR!

- Do you have knowledge to share with another person?
- Are you skilled with math?
- Can you make studying math fun?
- If you have a skill or love for math and want to help others, why not become a math tutor?

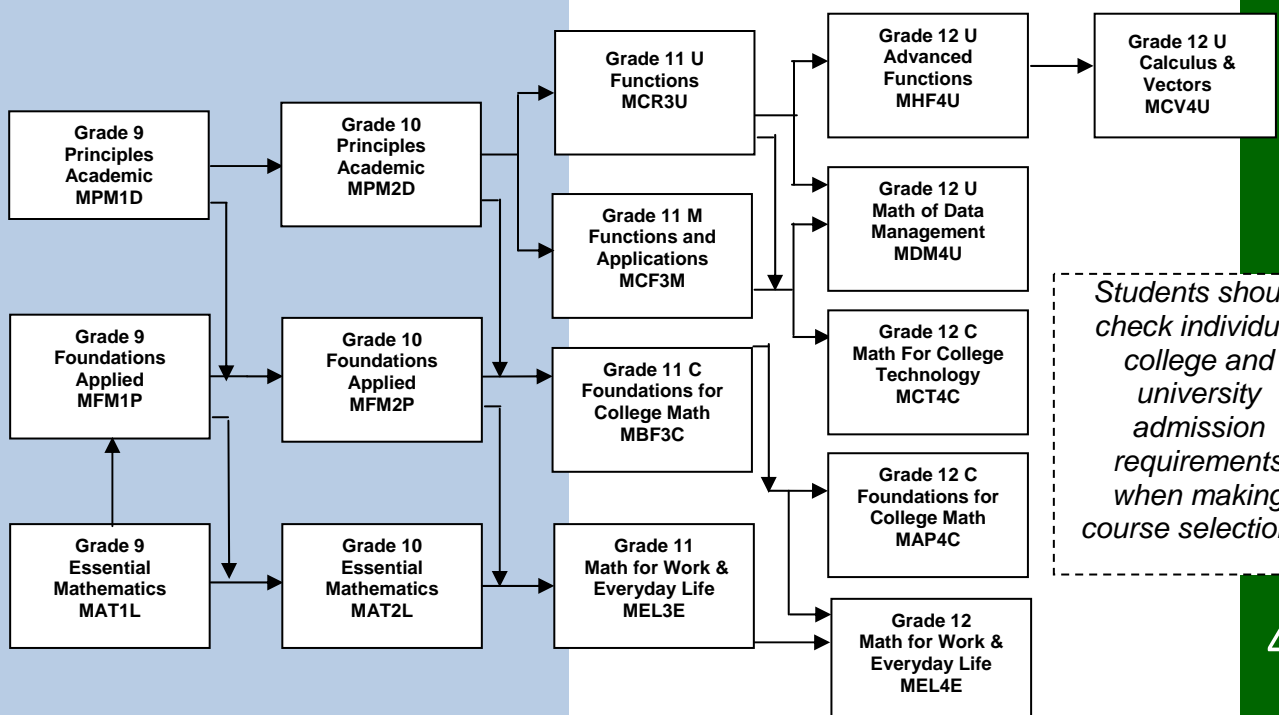
Math tutors help other students improve important math skills and earn money or volunteer hours in the process! You can tutor during the lunch hour, before or after school.

Not only will you be helping someone else but you will also be reviewing your own skills.

For more information, see a math teacher.

PATHWAYS CHART FOR MATHEMATICS

The flow chart shows typical pathways in mathematics. Other options are possible.



MPM1D**Principles of Mathematics, Grade 9, Academic**

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.

MFM1P**Foundations of Mathematics, Grade 9, Applied**

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.

MAT1L**Mathematics, Grade 9, Essential**

This course emphasizes further development of mathematical knowledge and skills to prepare students for success in their everyday lives, in the workplace, in the Grade 10 MAT2L course, and in the Mathematics Grade 11 and Grade 12 Workplace Preparation courses. The course is organized by three strands related to money sense, measurement, and proportional reasoning. In all strands, the focus is on developing and consolidating key foundational mathematical concepts and skills by solving authentic, every day problems. Students have opportunities to further develop their mathematical literacy and problem-solving skills and to continue developing their skills in reading, writing, and oral language through relevant and practical math activities.

MPM2D**Principles of Mathematics, Grade 10, Academic**

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.

Prerequisite: MPM1D (A mark of 70% is recommended.)

MFM2P**Foundations of Mathematics, Grade 10, Applied**

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.

Prerequisite: MDM1D or MFM1P (A mark of 70% is recommended.)

MAT2L**Mathematics, Grade 10, Essential**

This course emphasizes the extension of mathematical knowledge and skills to prepare students for success in their everyday lives, in the workplace, and in the Mathematics Grade 11 and Grade 12 Workplace Preparation courses. The course is organized by three strands related to money sense, measurement, and proportional reasoning. In all strands, the focus is on strengthening and extending key foundational mathematical concepts and skills by solving authentic, every day problems.

Prerequisite: A grade 9 Mathematics credit.



WRITE A MATH CONTEST!

Writing a math contest can be fun and it can also provide you with a personal challenge. There are regular practices that will help you to develop creativity, discipline, and self-confidence as you learn new things. You will expand your problem solving skills and have an opportunity to learn and be challenged.

Pascal (Gr. 9)	}	February
Cayley (Gr. 10)		
Fermat (Gr. 11)		
Fryer (Gr. 9)	}	April
Galois (Gr. 10)		
Hypatia (Gr. 11)		
Euclid (Gr. 12)	}	April
Canadian Senior And Junior Math Contests	}	November
Canadian Computing Competition	}	February

MCR3U

Functions, Grade 11, University Preparation

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; and develop facility in simplifying polynomial and rational expressions. Students will reason mathematically and communicate their thinking as they solve multi-step problems.

Prerequisite: MPM2D (A mark of 70% is recommended.)

MCF3M

Functions and Applications, Grade 11, University/College Preparation

Students in the grade 10 applied level course (MFM2P) need to have the recommendation of their teacher prior to selecting this course.

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 financial and trigonometric applications. Students will reason mathematically and communicate their thinking as they solve multi-step problems.

Prerequisite: MPM2D or MFM2P (Strong learning skills and a minimum mark of 80% is highly recommended.)

MBF3C

Foundations for College Mathematics, Grade 11, College Preparation

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; and develop their ability to reason by collecting, analysing, and evaluating data involving one and two variables. Students will consolidate their mathematical skills as they solve problems and communicate their thinking.

Prerequisite: MFM2P (A mark of 70% is recommended.)

MEL3E Mathematics for Work and Everyday Life, Grade 11, Workplace Preparation

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.

Prerequisite: MPM1D, MFM1P or MAT2L

MHF4U

Advanced Functions, Grade 12, University Preparation

This course extends students' experience with functions. Students will investigate the properties of polynomial, rational, logarithmic, and trigonometric 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 who plan to study mathematics in university and for those wishing to consolidate their understanding of mathematics before proceeding to any one of a variety of university programs.

Prerequisite: MCR3U OR MCT4C (Strong learning skills and a minimum mark of 80% is highly recommended)

