

Functions and Applications 11 • MCF3M

University/College Preparation

The Ontario Curriculum Grades 11 and 12 Mathematics 2007

Mathematics • Malvern C.I. • Toronto District School Board

Assistant Curriculum Leader: Elizabeth Barsby

Course developed by: Karan Parmar • Revised: September 2021

Credit Value: 1

Course Content

Description	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.
Prerequisite	Grade 10 Mathematics, Academic (MPM2D) or or Foundations of Mathematics, Grade 10, Applied (MPM 2P)
Resource Materials	Functions and Applications 11 (Nelson, 2007)
Overall Goals	By the end of this course, students will: <ul style="list-style-type: none">• expand and simplify quadratic expressions, solve quadratic equations, and relate the roots of a quadratic equation to the corresponding graph;• demonstrate an understanding of functions, and make connections between the numeric, graphical, and algebraic representations of quadratic functions;• solve problems involving quadratic functions, including those arising from real-world applications.• simplify and evaluate numerical expressions involving exponents, and make connections between the numeric, graphical, and algebraic representations of exponential functions;• identify and represent exponential functions, and solve problems involving exponential functions, including those arising from real-world applications;• demonstrate an understanding of compound interest and annuities, and solve related problems.• solve problems involving trigonometry in acute triangles using the sine law and the cosine law, including problems arising from real-world applications;• demonstrate an understanding of periodic relationships and the sine function, and make connections between the numeric, graphical, and algebraic representations of sine functions;• identify and represent sine functions, and solve problems involving sine functions, including those arising from real-world applications.
Major Units	<ul style="list-style-type: none">• Quadratic Functions• Exponential Functions• Trigonometric Functions

Assessment, Evaluation and Reporting

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| Strategies | <ul style="list-style-type: none">• Students will have the opportunity to learn and be assessed before evaluations.• Tests, quizzes, in-class activities and assignments will be used. |
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Achievement Category Weightings	Knowledge / Understanding	Thinking	Communication	Application
	35%	15%	15%	35%

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| Term Grades throughout the Year | <ul style="list-style-type: none">• The grade for each reporting period is based on evaluations that have been conducted to that point in the course, and will be preliminary and tentative. They will be based on the most consistent level of achievement to that point in time, but some of the overall expectations, strands, and units will not have been addressed. The student's grades will most likely change when his/her entire work is evaluated at the end of the course. |
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| Course Work
90% | <ul style="list-style-type: none">• Components of Evaluations: (refer to evaluation plan for details)<ol style="list-style-type: none">1. Tests (40%)2. Quizzes (15%)3. Assignments (15%)• Students need to demonstrate achievement of overall course expectations• Missed or incomplete assignments will have an impact on the final grade when a significant number of curriculum expectations have not been evaluated. |
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| Course-Culminating Activities
10% | <ul style="list-style-type: none">• May - June• Summative Evaluations<ul style="list-style-type: none">• Performance Task (in class)• All students must take part in the culminating activities. |
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| Learning Skills | <ul style="list-style-type: none">• Learning skills play a critical role in the achievement of curriculum expectations and student success.• Students are expected to be academically honest by submitting their own original work. The marks they receive are intended to reflect their own academic achievement.• Please refer to <i>Malvern Mathematics Policy for Learning Skills</i> for more details. |
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Communication

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| Consultation | <ul style="list-style-type: none">• The phone number for the mathematics department at Malvern is: (416)393-1480 extension 20080 |
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| Help | <ul style="list-style-type: none">• Extra help is available. Please approach your teacher to make arrangements for extra help in the morning, at lunch, or after school. |
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