

CLARKSON SECONDARY SCHOOL

Course Code: MFM 2P

Course Name: Foundations of Mathematics
Grade 10 Applied

Prerequisite: Grade 9 Academic or
Grade 9 Applied Mathematics

Material Required:

Foundations of Mathematics 10
Scientific Calculator, Graph Paper

Textbook Replacement Cost: \$100

Course Description

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.

Overall Course Expectations

By the end of this course, students will:

MEASUREMENT AND TRIGONOMETRY

1. Use their knowledge of ratio and proportion to investigate similar triangles and solve problems related to similarity.
2. Solve problems involving right triangles, using the primary trig ratios and the Pythagorean Theorem.
3. Solve problems involving the surface areas and volumes of three-dimensional figures, and use the imperial and metric systems of measurement.

LINEAR RELATIONS

1. Manipulate and solve algebraic equations, as needed to solve problems.
2. Graph a line and write the equation of a line from given information.
3. Solve systems of two linear equations, and solve related problems that arise from realistic solutions.

QUADRATIC FUNCTIONS

1. Manipulate algebraic expressions, as needed to understand quadratic relations.
2. Identify characteristics of quadratic relations.
3. Solve problems by interpreting graphs of quadratic relations.

ASSESSMENT BREAKDOWN INCLUDING CATEGORIES AND WEIGHTINGS.

Formative assessments are learning practices that provide important feedback to student progress and include homework checks, exit tickets, self assessments to name a few.

Summative assessments form the foundation for final mark allocation at the end of a unit, term and exam.

CATEGORIES	% WEIGHT OF FINAL GRADE
Knowledge	30
Application	20
Thinking	10
Communication	10
Final Examination	30
TOTAL	100

Unit	Unit Breakdown	Assessments
Similar Triangles	Conversion of measurements within metric/ imperial, Pythagorean's theorem, proving and solving involving similar triangle, problems using ratios, perimeter of triangles, relationship of the ratios of sides of similar triangles to the areas.	Quiz/ Worksheets/ Outdoor Activities and tests
Right-Angled Triangles and Trigonometry	Pythagorean's theorem revisited, trig. ratios to solve angles and sides using the calculator, word problems	Worksheets, Quizzes and Tests.
Lines	Slope, graphing lines knowing slope(s) and y-intercepts, interpreting relationships using graphs, changing from standard form to slope-intercept form and vice versa, intercepts, finding the equation given 2 points	Worksheets, Quizzes and Tests
Solving Systems of Linear Equations	Solving equations with a single variable/Finding intersection lines by graphing/substitution/elimination, applications, applications using the graphing calculator	Quizzes, worksheets, technology activities and Tests
Quadratic Relations	Graphing quadratics using table of values, first and second differences, quadratic regressions using the graphing calculator, modeling data, finding vertices, minimum / maximum values, axes of symmetry, x- and y- intercepts, zeros	Quizzes, worksheets, technology activities and Tests
Quadratic Equations	Multiplying Binomials, finding y- and x-intercepts algebraically and/or algebra tiles, standard and factored form, simple trinomial and difference of squares factoring, graphing using intercepts, applications.	Manipulatives, worksheets, quizzes and tests.
Surface Area and Volume	Conversions from imperial to metric and vice versa, calculating surface area and/or volume of prisms, pyramids and cylinders, cones and spheres, applications, perimeter and area of various shapes	Worksheets, quizzes and tests

Additional Information:

- Students are reminded to have a scientific calculator, graphing paper and other appropriate materials for the course.
- Additional help is available through your teacher.
- Access to the Ontario Educational Resource Bank (OERB) is at <http://resources.elearningontario.ca/>
The login for use by the Peel District School Board's students is
Student Login: pdsbstudent
Student Password: oerbs
- Visit <http://www.khanacademy.org/> for mini lessons on topics covered in class.
- Mathematics Contests for students in Grade 10:
 - CHAMP Contest
 - Cayley Contest : register during the first week in January; contest written in February.
 - Galois Contest : register during the first week in March; contest written in April.
Visit www.cemc.uwaterloo.ca for additional details.

LEARNING SKILLS Learning Skills will be reported on the student's report card. The following chart indicates the skills and look-fors for each student.

WORKS INDEPENDENTLY	TEAMWORK	ORGANIZATION	WORK HABITS/HOMEWORK	INITIATIVE	SELF-REGULATION
<p>The student:</p> <ul style="list-style-type: none"> ▪ accomplishes tasks independently ▪ accepts responsibility for accomplishing tasks ▪ follows instructions ▪ regularly completes assignments on time and with care ▪ uses time effectively 	<p>The student:</p> <ul style="list-style-type: none"> ▪ works willingly and cooperatively with others ▪ listens attentively, without interrupting ▪ takes responsibility for his/her share of the work to be done ▪ helps to motivate others, encouraging them to participate ▪ shows respect for the ideas and opinions of others 	<p>The student:</p> <ul style="list-style-type: none"> ▪ organizes work when faced with a number of tasks ▪ devises and follows a coherent plan to complete a task ▪ demonstrates ability to organize and manage information ▪ follows an effective process for inquiry and research 	<p>The student:</p> <ul style="list-style-type: none"> ▪ completes homework on time and with care ▪ follows directions ▪ shows attention to detail ▪ perseveres with complex projects that require sustained effort ▪ applies effective study practices 	<p>The student:</p> <ul style="list-style-type: none"> ▪ seeks out new opportunities for learning ▪ seeks necessary and additional information ▪ requires little prompting to complete a task, ▪ approaches new learning situations with confidence and a positive attitude ▪ seeks assistance when needed 	<p>The student:</p> <ul style="list-style-type: none"> ▪ sets individual goals and monitors own progress ▪ seeks clarification or assistance when needed ▪ reflects and assesses critically own strengths, needs and interests ▪ perseveres and makes an effort when responding to challenges

Clarkson S.S. Assessment & Evaluation Policy

CHEATING:

Students are expected to demonstrate **HONESTY** and integrity and submit assessments that are reflective of their own work. Cheating is defined as completing an assessment in a dishonest way through improper access to the answers. Examples include, but are not limited to; using another student's work as your own, using an unauthorized reference sheet during an assessment, receiving / sending an electronic message to another student with test questions / answers, etc.

In order to ensure that all assessments are free from cheating,

Students will:

- review school policy with regards to academic honesty
- submit their own work for evaluation to show evidence of skill and knowledge
- use only teacher approved materials during an evaluation
- demonstrate the qualities of good character and good intention (honesty, caring, respectful, responsibility,) when preparing evidence of their learning.

If a student cheats on an assessment,

Students may be:

- required to complete an alternate evaluation under direct supervision in a timely manner
- required to write a reflective piece which demonstrates an understanding of the character attribute of honesty.
- assigned a mark deduction
- referred to a vice-principal
- assigned a zero.

Plagiarism:

Students are expected to demonstrate **HONESTY** and use proper citations and referencing when completing assessments. Plagiarism is defined as the unauthorized use or close imitation of the language and thoughts of another author and the representation of them as one's own original work. Examples include, but are not limited to; copying another's project (portions or whole) and paraphrasing parts of a book or article without reference or citation.

In order to ensure that all assessments are free from plagiarism,

Students will:

- Be required to complete a workshop in correct documentation
- produce their own work
- give credit through appropriate citations and referencing when quoting or paraphrasing the work of others
- be diligent in maintaining and protecting their own work
- seek clarification or assistance from teachers or other available resources

If an assessment is plagiarized,

Students may be:

- required to rewrite or resubmit all or parts of the assignment
- referred for remedial lessons on proper citation and references
- required to do a reflection on the character attribute of honesty
- referred to a vice-principal
- required to sign a contract with the administration and teacher about commitment to academic honesty
- assigned a zero.

LATE ASSIGNMENTS – assignments submitted after the due date and before the absolute deadline.

Students are expected to demonstrate **RESPONSIBILITY** and submit all assessments by the established due date. Students are responsible for providing evidence of their achievement of the overall course expectations within the time frame specified by the teacher and in a form approved by the teacher. There are consequences for not completing assignments for evaluation or for submitting those assignments late.

In order to ensure that all evaluations are submitted by the established due date,

Students will:

- record due dates in personal organizers
- consider other commitments including co-curricular activities in planning assignment completion
- negotiate alternate due date well before due date, not last minute (a minimum of 24 hours in advance or at teachers discretion)
- find out what they missed during absences
- use school support systems (i.e. special education, counselors, extra help, ...)

If an evaluation is submitted **after** the due date

Students :

- must notify the teacher and explain why the assignment was not submitted on the due date – in grades 9 & 10 a note from a parent/guardian may be required
- marks may be deducted for late assignments
- may be required to complete the assignment with supervision
- may be referred to a school based support team or a vice-principal
- may be placed on a contract for assignment completion

MISSED ASSIGNMENTS – assignments either not submitted or submitted after the absolute deadline

Excerpt from Policy 14.

In order to ensure that all evaluations are submitted,

Students will:

- be responsible for meeting and knowing absolute deadlines for missed assignments
- use personal organizers to manage time and meet deadlines
- be responsible for maintaining on- going communication with their teacher
- take responsibility for missed work during all absences.

If an evaluation is submitted **after** the **absolute** deadline,

Students:

- must notify the teacher and explain why the assignment was not submitted
- students may be asked to provide a note from a parent/guardian
- may be required to complete the assignment or an alternate assignment under supervision
- may be referred to a school based support team or a vice-principal
- may be placed on a contract for assignment completion
- may be involved in an action plan to complete the required assignment within a given time frame
- may be assigned a zero.

Course Code: MFM 2P

Course Name: Foundations of Mathematics
Grade 10 Applied

Parent/Guardian Signature

Student Signature

Date