

CLARKSON SECONDARY SCHOOL

Course Code: MPM 1D0

Course Name: Principles of Mathematics
Grade 9 Academic

Prerequisite: None

Material Required:

1. Mathematics 9 (Addison-Wesley)

Textbook Replacement Cost: \$100

2. Principles of Mathematics 9

(Mc Graw-Hill Ryerson)

Exercise and Homework Book

Replacement Cost: \$15

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.

Overall Course Expectations

By the end of this course, students will:

Number Sense and Algebra

- 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.

Linear Relations

- 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.

Analytic Geometry

- 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.

Measurement and Geometry

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 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
EQAO	5
Final Examination	25
TOTAL	100

Unit	Unit Breakdown	Assessments
1: Numerically	Review: Integers, Decimals & Fractions, Percent, Rational Numbers, Adding and subtracting rational numbers .	Unit Evaluation: Quiz, Test
2. Powers and Roots	Multiply & Divide Powers , Powers of Powers , Squares & Square Roots , Pythagorean Theorem.	Unit Evaluation: Quiz, Test
3: Algebra - Polynomials	Definitions, collecting like terms, add & subtract polynomials, distributive law, multiply and divide monomials, monomials x polynomials, simple trinomial factoring .	Unit Evaluation: Quiz, Test
4: Algebra - Equations	Solve equations using inspection and algebraic methods. Simplify equations before solving. Solve equations with the variable on both sides. Equations with fractions. Word problems: number, geometry, money, age.	Unit Evaluation: Quiz, Test
5: Graphing Lines	The Cartesian Plane, rate of change (slope), graphing linear and non- linear relations, finding relationships in data, graphing $y=mx+b$, parallel & perpendicular lines, applications of linear relations, standard form, graph using x and y intercepts.	Unit Evaluation: Quiz, Test
6: Revisit the Line & Line of Best Fit Line	Various ways to determine the equation of a line. Intersection of lines, scatter plots and the line of best fit - by hand and using the graphing calculator.	Unit Evaluation: Quiz, Test
7: Measurement	Perimeter and area of composite figures. Surface are and volume of a prism, cylinder , pyramid, cone and sphere.	Unit Evaluation: Quiz, Test
8: Geometry	Geometer's Sketch Pad. Medians, altitudes, angle bisectors of triangles. Interior and exterior angle properties of polygons. Angles and parallel lines. Sides and diagonals of quadrilaterals.	Unit Evaluation: Quiz, Test
9: Relationships	Interpreting and creating graphs, Investigate relationships in data, relationships in proportional situations.	Unit Evaluation: Quiz, Test

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

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 9:
 - CHAMP Contest
 - Pascal Contest : register during the first week in January; contest written in February.
 - Fryer Contest : register during the first week in March; contest written in April.Visit www.cemc.uwaterloo.ca for additional details.

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.

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Grade 9 Academic

Parent/Guardian Signature

Student Signature

Date