CLARKSON SECONDARY SCHOOL

Course Code: MFM 1P

Course Name: Foundations of Mathematics Grade 9 Applied

Prerequisite:
Grade 8 Math

Material Required:
Applied Math Workbook
(Tree House Press)
$10 for replacement

Textbook Replacement Cost:
Math 9 (Pearson) $100 if issued.

Course Description

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.

Overall Course Expectations

By the end of this course, students will:

- solve problems involving proportional reasoning; simplify numerical and polynomial expressions in one variable, and solve simple first-degree equations.
- apply data-management techniques to investigate relationships between two variables; determine the characteristics of linear relations; demonstrate an understanding of constant rate of change and its connection to linear relations; connect various representations of a linear relation, and solve problems using the representations
- determine, through investigation, the optimal values of various measurements of rectangles; solve problems involving the measurements of two-dimensional shapes and the volumes of three-dimensional figures; determine, 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. Numbers and Operations	Adding, subtracting, multiplying, and dividing of integers and rational numbers.	Unit Evaluation: Test and/or quizzes
2. Proportional Reasoning	Equivalent ratios; proportions; unit rates; scale diagrams; percent	Unit Evaluation: Test and/or quizzes
3. Simplifying Expressions	Inverse operations; algebraic expressions	Unit Evaluation: Test and/or quizzes
4. Solving Equations	Solve by inspection, modeling; balance method ; inverse operations; checking equations; rearranging formulas.	Unit Evaluation: Test and/or quizzes
5. Pythagorean Theorem	Problem solving; cones and pyramids	Unit Evaluation: Test and/or quizzes
6. Data and Relationships	Scatter plots and graphs; investigations and relationships; positive and negative correlation; trends	Unit Evaluation: Test and/or quizzes
7. Characteristics of Linear Relations	Line or curve of best fit; first differences in linear relations	Unit Evaluation: Test and/or quizzes
8. Constant rate of change	Calculate rate of change, slope; first differences; direct and partial variation; equations in the form $y=mx + b$	Unit Evaluation: Test and/or quizzes
9. Connecting Linear Relations	Interpolating and extrapolating; describe motion; linear graphs and changing conditions; intersection of two lines; find an intersection point algebraically; investigate linear relations	Unit Evaluation: Test and/or quizzes
10. Area and Volume	Area and perimeter of composite shapes; volumes of prisms and cylinders; volume of a pyramid, cone , sphere	Unit Evaluation: Test and/or quizzes
11. Optimal Values	Optimizing areas of rectangles with fixed perimeter, three sides; optimizing perimeters with a fixed area; investigating volume.	Unit Evaluation: Test and/or quizzes
12. Geometric Relationships	Parallel lines, parallelograms, trapezoids; problem solving with parallel lines; angles in triangles and polygons, exterior angles in triangles and polygons	Unit Evaluation: Test and/or quizzes

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
The student: ▪ accomplishes tasks independently ▪ accepts responsibility for accomplishing tasks ▪ follows instructions ▪ regularly completes assignments on time and with care ▪ uses time effectively	**The student:** ▪ 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	**The student:** ▪ 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	**The student:** ▪ 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	**The student:** ▪ 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	**The student:** ▪ 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

<u>MISSED ASSIGNMENTS</u> – 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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Parent/Guardian Signature **Student Signature** **Date**