Course of Study

1. Course Details

Lawrence Park C.I

TDSB

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Faculty : Mathematics

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Textbook :

MATHEMATICS:
Applying the Concepts
(McGraw-Hill Ryerson)

Date revised : September 2019

Course Name : Foundations of Mathematics

Course Code : MFM2P1

Prerequisite Course Code :

Gr. 9 Academic Mathematics
(MPM 1D1 or MPM 1D4/5),

or Gr. 9 Applied Mathematics
(MFM 1P1)

Credit Value : 1

Essential Resource Materials :

(1) Scientific Calculator
(2) Standard Geometry Set

2. Overall Goals

Overall Expectations for the Course & Course Units:

This course enables students to consolidate their understanding of linear relations and to extend their problem-solving & algebraic skills through investigation, the effective use of technology, & hands-on activities. Students will develop & graph equations in analytic geometry; solve & apply linear systems, using real-life examples; & 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 & communicate their thinking.

Measurement and Trigonometry

By the end of this course, students will:

- … use their knowledge of ratio and proportion to investigate similar triangles and solve problems related to similarity;
- … solve problems involving right triangles, using the primary trigonometric ratios and the Pythagorean theorem;
- … solve problems involving the surface areas and volumes of three-dimensional figures, and use the imperial and metric systems of measurement.

Modelling Linear Relations

By the end of this course, students will:

- … manipulate and solve algebraic equations, as needed to solve problems;
- … graph a line and write the equation of a line from given information;
- … solve systems of two linear equations, and solve related problems that arise from realistic situations.

Quadratic Relations of the Form $y = ax^2 + bx + c$

By the end of this course, students will:

- … manipulate algebraic expressions, as needed, to understand quadratic relations;
- … identify characteristics of quadratic relations;
- … solve problems by interpreting graphs of quadratic equations.

3. Learning Skills and Work Habits

Evaluated on Report Card as:
E (*excellent*); G (*good*); S (*satisfactory*); or N (*needs improvement*)

The *Learning Skills* demonstrated by students are evaluated in every course in the following six categories:

RESPONSIBILITY, ORGANIZATION, INDEPENDENT WORK, COLLABORATION, INITIATIVE, and SELF-REGULATION.

These *Learning Skills* are evaluated using a four-point scale. The goal that this evaluation process is intended to promote, is for each student to seek to improve their *Learning Skills*, as this will translate into improvement in each student's overall success in every high school course as well as prepare them for success in later studies.

Students' completion of all homework & timely submission of assignments will also contribute to their success.

Finally, as is very well known, students' regular attendance at all classes in every course is critical to their academic success. Therefore, so far as possible, please avoid scheduling other appointments during school time.

Responsibility	The student: • fulfils responsibilities and commitments within the learning environment; • completes and submits class work, homework, and assignments according to agreed-upon timelines; • takes responsibility for and manages own behaviour.
Organization	The student: • devises and follows a plan and process for completing work and tasks; • establishes priorities and manages time to complete tasks and achieve goals; • identifies, gathers, evaluates, and uses information, technology, and resources • to complete tasks.
Independent Work	The student: • independently monitors, assesses, and revises plans to complete tasks and meet goals; • uses class time appropriately to complete tasks; • follows instructions with minimal supervision.
Collaboration	The student: • accepts various roles and an equitable share of work in a group; • responds positively to the ideas, opinions, values, and traditions of others; • builds healthy peer-to-peer relationships through personal and media-assisted • interactions; • works with others to resolve conflicts and build consensus to achieve group goals; • shares information, resources, expertise and promotes critical thinking to solve • problems and make decisions.
Initiative	The student: • looks for and acts on new ideas and opportunities for learning; • demonstrates the capacity for innovation and a willingness to take risks; • demonstrates curiosity and interest in learning; • approaches new tasks with a positive attitude; • recognizes and advocates appropriately for the rights of self and others.
Self-regulation	The student: • sets own individual goals and monitors progress towards achieving them • seeks clarification or assistance when needed • assesses and reflects critically on own strengths, needs, and interests; • identifies learning opportunities, choices, and strategies to meet personal goals.

4.	Assessment & Evaluation Strategies for **Course Work**		*(70% of final course mark)*

Students will demonstrate achievement of all the overall expectations of the course. Missed and/or incomplete assignments will have an impact on the final grade where there are a significant number of curriculum expectations that have not been evaluated because of missed assignments. Timelines and units may be adjusted to accommodate students' various needs.

Unit #	Culminating Tasks	Achievement Chart Focus (All culminating tasks measure knowledge/understanding, thinking, communication, and application categories)	Time Line No. of Periods
1	Quizzes and Tests	**Proportional Reasoning**	6
2	Quizzes and Tests	**Equations and Formulas**	10
3	Quizzes and Tests	**Linear Functions**	10
4	Quizzes and Tests	**Piecewise Linear Functions**	10
5	Quizzes and Tests	**Systems of Linear Equations**	10
6	Quizzes and Tests	**Similar Triangles**	10
7	Quizzes and Tests	**Trigonometry**	10
8	Quizzes and Tests	**Quadratic Functions**	10
9	Quizzes and Tests	**Algebraic Expressions**	10
10	Quizzes and Tests	**Solve Problems: Quadratic Functions**	5

4.	Assessment & Evaluation Strategies for **Culminating Activities**		*(30% of final course mark)*

All Students must take part in the culminating activities for each course at every grade level of study

Summative Tasks	Achievement Chart Focus	Weighting
Final Project	**The final project will explore one of the course topics in depth**	**10%**
Final Exam	**The final exam will cover all of the topics discussed in the course**	**20%**

5. Achievement Chart

Achievement Categories For Course Work	Description	Weighting
Knowledge/Understanding	• knowledge of facts and terms • understanding concepts, principles, and theories • understanding of relationships between concepts	**35** **%**
Thinking	• critical thinking skills (analyzing, detecting bias) • creative thinking (problem solving) • inquiry skills (formulating questions; conducting research; • analyzing, interpreting and evaluating information; drawing conclusions)	**15** **%**
Communication	• regular use of journaling to reflect on learning • communication of information and ideas • use of visuals and technology multimedia • oral communication (debates, discussions, listening skills, role-playing) • written communication (short essays, writing in role)	**15** **%**
Application	• application of concepts, skills, and procedures • transfer of concepts, skills, and procedures to new ideas • making logical conclusions or generalizations • making predictions and planning courses of action • making connections	**35** **%**

6. Term Grades for Provincial Reports

Term Grades for Provincial Reports throughout the Year :

The grades for each term/reporting period are based on the evaluations that have been conducted to that point in the course, and will be preliminary and tentative. They will be based on the most recent and consistent level of student achievement to that point, but some of the overall expectations, strands & units might not have been addressed by that time. A student's grades are most likely to change once that student's entire body of work has been evaluated, by the end of the course.

Reporting cycle 1: September 3rd—November 5th (Report Card: November 14th)
Reporting cycle 2: November 6th—January 24th (Report Card: February 7th)
Reporting cycle 3: January 25th—March 31st (Report Card: April 9th)
Reporting cycle 4: April 1st—June 22nd (Final Report Card pick up: June 25th)

Exam Review Day: June 22nd (9-11 am only)

7. Communication

In addition to learning during their class time, students may access the following assistance resources:

• From their subject teachers, before/after school, during lunch hour, or at any agreed time — by appointment;
• The free-for-students basic HS math skills course at :   www.youcubed.org/parents/
• The Ontario Ministry of Education's *Homework Help* site: http://www.edu.gov.on.ca/elearning/homework.html
• The EQAO guide to interpreting Gr. 9 Math Test results (2014):   http://tinyurl.com/oblvh27