Math 9 Course Outline

Teacher: Ms. Richmond

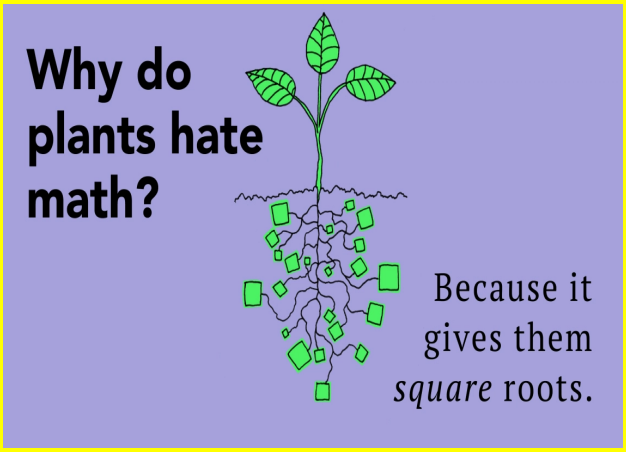
Textbook: **MathLinks 9** – *McGraw-Hill Ryerson*

Course Work: 80%
Final Exam (PAT): 20%

The **main goals of mathematics** education are to prepare students to:

- solve problems
- communicate and reason mathematically
- make connections between mathematics and its real world applications
- become mathematically literate
- appreciate and value mathematics
- make informed decisions as contributors to society

Below you will find an outline of all the outcomes that will be covered throughout the Grade 8 Mathematics course this year. This year, instead of focusing on each unit until it is completed in its entirety, we will focus on one outcome each week, cycling through outcomes in each unit. In this way, students will see the same outcomes multiple times as we build on them throughout the year.



Unit	Subsections	Topics
Numbers	• Review of Number Concepts	• Factors & Multiples • Prime & Composite Numbers • Greatest Common Factor (GCF) • Least Common Multiple (LCM) • Order of Operations (BEDMAS)
	• Integers	• Review of Integers (+/-/x/÷)
	• Rational Numbers	• Fractions (+/-/x/÷) • Decimals • Percents • Rational versus Irrational Numbers
	• Exponents	• Powers with Integral Bases and Whole Number Exponents • Exponent Laws • Square Roots
Patterns	• Polynomials	• Terminology & Definitions • Adding & Subtracting Polynomials • Multiply & Divide Polynomials
	• Equations	• Solve Equations

	• Linear Relations	• Review of Graphing • Writing Linear Equations from a Table of Values • Substitution • Graphing Linear Relations • Interpolation & Extrapolation
	• Inequalities	• Solve & Display on a Number Line
Shape and Space	• Geometry	• Review of Area • Surface Area of Composite 3D Shapes
	• Circle Geometry	• Circle Properties • Chords – Perpendicular Bisector Theorem • Angles – Central & Inscribed Angles • Tangents – Radius Theorem
	• Transformations on Graphs	• Line & Rotation Symmetry • Similarity of Polygons • Scale Diagrams of 2D Shapes
Statistics	• Data Collections	• Bias, ethics • Language use • Cost, Time
	• Population & Samples	• PROJECT: collections, display, and analysis of Data
	• Probability	• Role in society

You will Need:

- A calculator – *with exponent and integer (+/-) functions*
- Pencil
- Paper
- Textbook
- 5 subject coil notebook

Assessment:

❖ **Formative Assessment** (***Assessment for Learning***) – These types of assessments are to guide teaching and learning, and will not be used in the calculation of the final course mark

- ➢ bell work
- ➢ practice sheets
- ➢ self corrections

- ➢ group assignments
- ➢ project conferences with teacher
- ➢ vocabulary work included/embedded in lesson structures
- ➢ self-assessments using learning outcomes

❖ **Formative Assessment** (***Assessment as Learning***) – These types of assessments are also to guide teaching and learning, and will also not be used in the calculation of the final course mark

- ➢ diagnostic assessments
- ➢ practice quizzes
- ➢ practice tests as individuals or with group
- ➢ self-assessment

❖ **Summative Assessment** (***Assessment of Learning***) – These are the assessments for which the marks will be recorded and used to calculate the final course mark. The weight of each of these types of assessments on the final mark is indicated below:

- ➢ weekly/bi-weekly mini check-ins 10%
- ➢ outcome exams (4) - 40%
- ➢ projects (2) - 30%
- ➢ Provincial Achievement Test (final exam) - 20%

Topic	Rationale
Numbers	Numbers unit is the backbone of all math learning. Students focus towards mastery of the concepts of exponents and rational numbers as they are the basis of decimals, division, and later on equations and geometry and statistics.
Patterns	Teaching polynomials usually occurs quickly. Solving equations and understanding inequalities takes more time to ensure learning and understanding.
Shape and Space	Measurement is a hands-on unit and involves a lot of manipulatives and interactive. Students usually enjoy this unit and the study Circle Properties.
Statistics	Graphing reinforces previous learning with patterns. Looking at bias and language use in statistics incorporates reading and comprehension skills.

Expectations:

1. Be in class on time with all necessary materials : ready to work

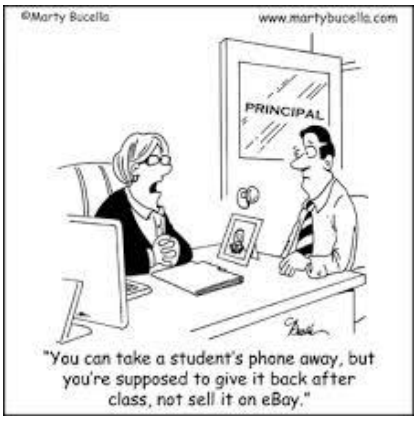
2. Students are expected to complete work on time. Homework is due at the beginning of the class, on the assigned date. Homework assignments should be copied from the board into your agenda.

3. Absences. When absent it is the students responsibility to catch up on work or tests missed. Check with the teacher. If you know you are going to be absent, work can be given ahead of time. Tests and quizzes that are missed are usually made up at lunch or after school.

4. Binders are to be kept neat, organized and dated. **Students are expected to show their work in answering questions.**

5. Assignments are to be handed in on time. All assignments must be completed.

6. If you are having any difficulty with the course please arrange a time for extra help. Do not let yourself slip behind. Help is available, please ask before it is time for the final at the end of the year.



Cell Phone Policy: There is a time and place for the use of cell phone technology in class. The teacher will inform the student when that time is. Cell phones will be parked during class time, with the exception of times that it is required to enhance learning as dictated by the teacher. It is not to be used in replacement of a calculator or a source of music. Thank-you for your support in this area!