



**D. Harding**

Math 9A                      Math 9B

Periods 1, 2 & 3              Period 4

A cartoon illustration of a brown cat with large, expressive eyes, sitting and looking towards the viewer.

CLASSROOM  
RULES



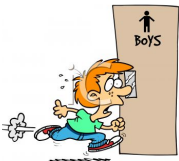
#1

Absolutely no cell phones, ipods,  
while I am teaching...



#2

Limited bathroom/drink  
break during class time.



#3

Respectful

**Respect Yourself**  
be honest, set goals, do your best, believe in yourself, be prepared, make a difference, have a positive attitude, participate

**Respect Others**  
work together, be understanding, wait your turn, be nice, stay on task, work quietly, listen

**Respect Our School**  
be safe, raise your hand, pick up after yourself, follow directions, follow school rules





#4

Come to class prepared,  
willing and able to work.



1) Students should bring  
their own Water Bottle



2) Students **MUST** clean off  
their desk before leaving  
class





# Microsoft Teams

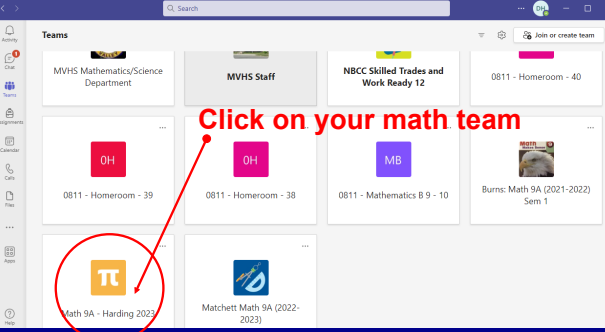
An electronic device and Internet access is needed for this. You will also need your student e-mail and password.

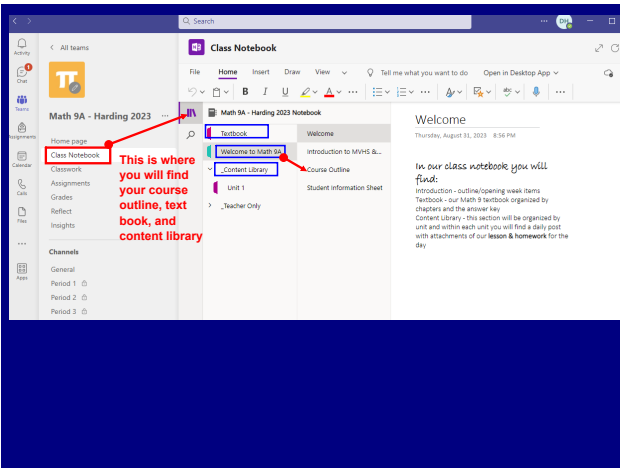
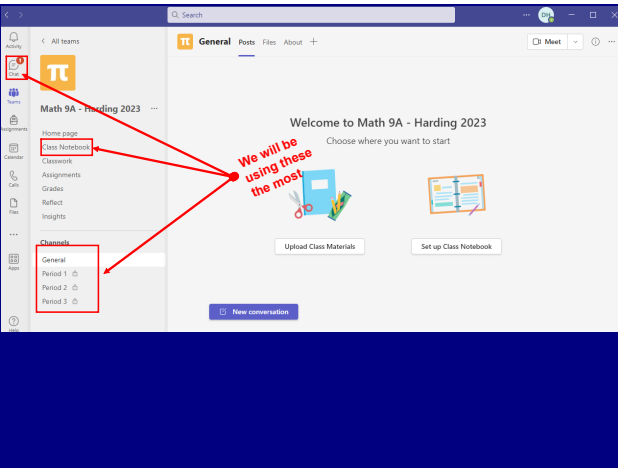
Steps:

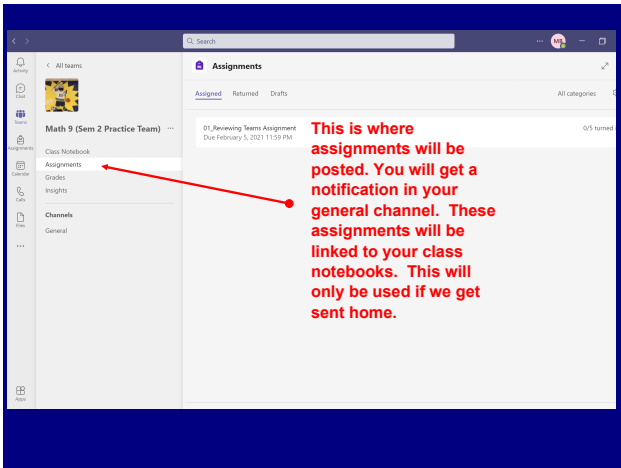
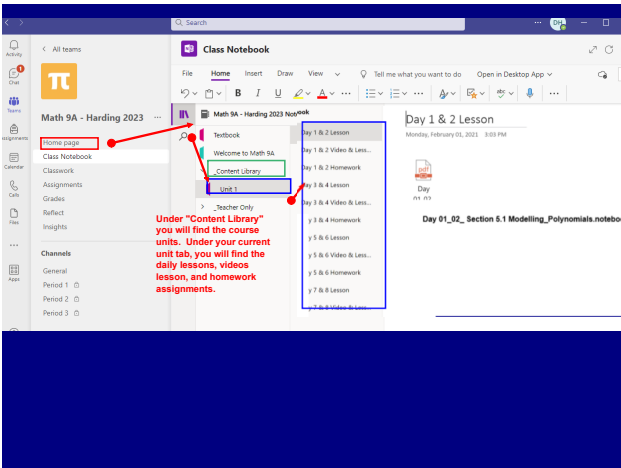
- 1) Sign into Microsoft Office
- 2) If you have a iPhone, download the "Teams" app
- 3) Also download the "OneNote" app


If you can bring your device to school, we will have a training session on this!

## TEAMS & CLASS NOTEBOOK LOOKS LIKE THIS










**Bring Your Own Device**  
(BYOD)




**IPHONE & Android**


Select mNB in your WIFI selection  
Enter {Active Directory username} in Username field  
Enter {Active Directory Password} in Password field

**Android 11 Google Pixel 3 and UP**

Select mNB in your WIFI selection  
Enter {gnb.ca} for domain name (NBED & NBSS do the same)  
Enter {Active Directory username} in Identity field  
Enter {Active Directory Password} in Password field



Course Outline  
Mathematics 9  
Semester 1



**Chapter 3:**  
**Rational Numbers**

What is a Rational number? - decimal / fraction form  
Compare and order  
Irrational number

Adding Rational Numbers - decimal, improper and mixed form  
Problem solving

Subtracting Rational Numbers - decimal, improper and mixed form  
Problem solving


Mid-Unit Review


Multiplying Rational Numbers - decimal, improper and mixed form  
Problem solving

Dividing Rational Numbers - decimal, improper and mixed form  
Problem solving


Order of Operations - decimals, improper and mixed form  
Problem Solving

Review/Test



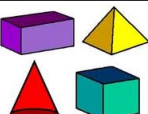



Course Outline  
Mathematics 9  
Semester 1




**Chapter 1:**  
**Square Roots and Surface Area:**

Perfect Squares - including rational numbers  
Non-Perfect Squares - estimate (number line) / calculator  
Pythagorean Theorem  
Surface Area - cubes, rectangular prisms, cylinders, triangular prisms  
Combinations of above objects  
Review/Test






Course Outline  
Mathematics 9  
Semester 1





**Chapter 2:**  
**Powers and Exponent Laws:**

What is a Power?  
Powers of 10 and Zero Exponents  
Order of Operations with Powers  
Mid-Unit Review  
Strategies to help simplify expressions with Powers  
Exponent Laws 1 - Product of powers  
Quotient of powers  
Order of Operations  
Exponent Laws 2 - Power of a Power  
Power of a product  
Power of a quotient  
Order of Operations


Review/Test









Course Outline  
Mathematics 9  
Semester 2







**Polynomials:** Chapter 5:

- Modeling Polynomials - (Algebra tiles)  
term/coefficient/degree/constant/monomial/binomial/trinomial
- Like Terms & Unlike Terms - simplified form/zero pairs/perimeter with polynomials
- Adding Polynomials - sum of binomials/perimeter
- Subtracting Polynomials - subtract monomials/binomials/trinomials
- Mid-Unit Review
- Multiplying and Dividing a Polynomial by a Constant - binomial or trinomial by constant
- Multiplying and Dividing a Polynomial by a Monomial
- Review/Test



Course Outline  
Mathematics 9  
Semester 2







**Chapter 6:**

**Linear Equations and Inequalities:**

- Solving Equations with Inverse Operations - Variables on one side
- Solving Equations by Using Balance Strategies -
- Variables on both sides/Rational Coefficients/Word Problems
- Mid -Unit Review
- Intro to Linear Inequalities - ( $<$ ,  $>$ ,  $\leq$ , and  $\geq$ ) Graphing/Finding Solutions
- Solving Linear Inequalities by Using Addition and Subtraction
- Solving Linear Inequalities by Using Multiplication and Division - One-Step or Multi-Step
- Review/Test




Course Outline  
Mathematics 9  
Semester 2



**Chapter 4:**


**Linear Relations**

- Writing Equations to Describe Patterns – Written pattern  
(Written explanation)
- Oral pattern  
(Sign/visual information)
- Technology (spreadsheet)
- Linear Relations – Analyze linear graph  
Dependent / Independent Variables  
Graphing using a table of values  
equation
- Problem Solving




Another Form of the Equation for linear equations – Horizontal lines ( $y=5$ )  
Vertical lines ( $x=7$ )  
Oblique lines ( $ax+by=c$ )

- Mid-Unit Review
- Matching Equations and Graphs
- Using Graphs to Estimate Values – interpolation  
-extrapolation
- Technology
- Review / Test



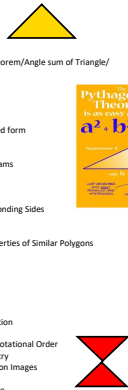
Course Outline  
Mathematics 9  
Semester 2




**Chapter 7:**


**Similarity and Transformations**

- What Should I Recall? (Page 316-317)
- Isosceles Triangle/perpendicular bisector/Pythagorean Theorem/Angle sum of Triangle/  
Congruent/line of symmetry
- Scale Diagrams and Enlargements - Scale Factor  
Drawing Scale Diagrams
- Scale Diagrams & Reductions - decimal, improper and mixed form
- Problem solving  
Subtracting Rational Numbers - Drawing Scale Diagrams  
Proportional  
Using Scales to determine missing lengths  
Similar Polygons - Similar  
Corresponding Angles & Corresponding Sides  
Properties of Similar Polygons  
Drawing Similar Polygons  
Solving Problems Using the Properties of Similar Polygons
- Similar Triangles - Properties of Similar Triangles
- Mid-Unit Review
- Reflections & Line Symmetry - Symmetry in Tessellations  
Line of Symmetry & Line Reflection
- Rotations & Rotational Symmetry - Rotational Symmetry/Rotational Order  
Angle of Rotation symmetry  
Drawing Rotation Images
- Identifying Types of Symmetry on the Cartesian Plane
- Review/Test





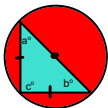
Course Outline  
Mathematics 9  
Semester 2




**Chapter 8:**


**Circle Geometry**

- Properties of Tangents to a circle - Tangent / Point of Tangency  
Tangent and Radius Property  
Pythagorean Theorem
- Properties of Chords in a Circle - Chord/Diameter/Perpendicular Bisector  
Perpendicular to Chord Property 1  
Perpendicular to Chord Property 2  
Perpendicular to Chord Property 3
- Verifying the Tangent and Chord Properties (page 400-401)
- Mid-Unit Review
- Properties of Angles in a Circle - arc/major arc/minor arc  
Inscribed angle/Central Angle/Subtended  
Central Angle and Inscribed Angle Property  
Inscribed Angles Properties  
Angles in a semicircle Property
- Review / Test





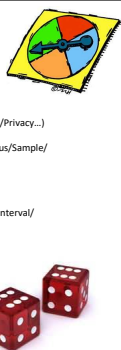
Course Outline  
Mathematics 9  
Semester 2




**Chapter 9:**

**Probability and Statistics**


- Probability in Society - Assumptions and Predicted
- Potential Problems with Collecting Data - (Bias/ Language /Timing/Privacy...)
- Using Samples and Populations to Collect Data- Populations/Census/Sample/  
Valid Conclusions
- Mid-Unit Review
- Selecting a Sample - Simple Random/Self-Selected/Systematic or interval/  
Convenience/Cluster/Stratified Random
- Designing a Project Plan - Your own survey
- Review/Test







# Course Outline Mathematics 9



**MATHEMATICS 9**  
**COURSE OUTLINE: 2023-2024**

---

**TEACHERS:** D. Harding & C. Shearman

**TEXT:** *Maths Makes Sense 9* (available in TEAMS)

**TECHNOLOGY:**

- Microsoft Teams
- All copies of lessons, homework and assignments will be posted here daily.
- School Website ([www.mchs.edu.au](https://www.mchs.edu.au)) under "Teacher Pages" click on your teacher's name
- Updates on course work & upcoming assessments will be provided here weekly.

**MATERIALS:**

- a scientific calculator (GMSI) have your own, NO old phones or tablet, during class
- a student with loose leaf & graph paper for notes, homework, evaluations, etc.
- pencil, eraser and a ruler

**ATTENDANCE:**

- Students will be expected to maintain excellent attendance. If a student is absent from class, they are expected to log onto Teams, PEDRO or returning to class, and ATTEMPT all lessons and assignments prior for corresponding days missed.
- If a student enters a rest, it will be the responsibility of the student to present a satisfactory written excuse and to arrange to visit their class on their own time.
- It will be eligible for academic incentives, students must not: • leave classes & have a passing grade point on the class. 3 late = 1 absence

**TOPIC:**

UNIT 1: Rational Numbers (Chapter 3)	UNIT 6: Linear Relations (Chapter 6)
UNIT 2: Square Roots and Surface Areas (Chapter 1)	UNIT 7: Similarity & Transformations (Chapter 7)
UNIT 3: Patterns and Exponents/Laws (Chapter 2)	UNIT 8: Circle Geometry (Chapter 8)
UNIT 4: Polynomials (Chapter 3)	UNIT 9: Probability & Statistics (Chapter 9)
UNIT 5: Linear Equations and Inequalities (Chapter 6)	

\*\*\*\*See Page 2 for the "Required Curriculum Outcome" for the 2023-2024 school year\*\*\*\*

**Achievement:**                      **CURRICULUM INCENTIVE EVALUATION:**

Tests / Quizzes / Assignments	70%	Tests / Quizzes / Assignments	85% OR 50%
30/24	Exam	Exam	OR 50%

\* A mark of 60% is required to receive a passing grade.\*



**MATH HELP CENTRE:**

This year help centre will be offered to all grade 9 and 10 math students in year 4142.



- Hours of operation

o Monday, Tuesday, Wednesday & Thursday    12:25 – 12:55


A blue poster for the Grade 9/10 Math Help Centre. The poster features the Miramichi Valley logo in the top corners and bottom corners. The central text reads "Grade 9/10 MATH HELP CENTRE" and "ROOM 4142". Below this, it says "(Led by Mr. Shangraw's Classroom)". The "HOURS OF OPERATION" are listed as "Monday to Thursday 12:25 - 12:55". There are three cartoon illustrations: a superhero flying with papers, a boy writing in a notebook, and a boy with glasses pointing up.

# Requirements After MVHS

[PROGRAMS & COURSES](#)
[ACADEMICS & SERVICES](#)
[STUDENT SERVICES](#)
[ADMISSIONS](#)
[ABOUT](#)



## Full-Time Programs




[Academics](#)
[Admissions](#)
[Missing Modules](#)
[Student Life](#)
[Research](#)
[Athletics](#)


### Undergraduate Admission Requirements

for Canadian students and Permanent Residents

Select your Area of Study and Program then click "Next"



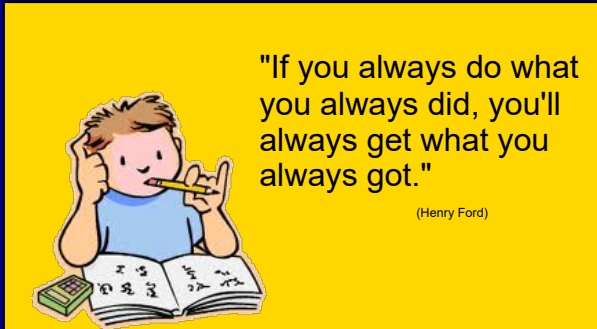
[ABOUT US](#)
[ACADEMICS](#)
[FUTURE STUDENTS](#)
[CURRENT STUDENTS](#)
[RESEARCH](#)
[ALUMNI & DONORS](#)
[ATHLETICS](#)



10 Lessons I Want  
to Instill in My Kids

- If you made a mistake, apologize.
- If you're thankful, show it.
- If you're confused, ask questions.
- If you learn something, teach others.
- If you're stuck, ask for help.
- If you're wrong, fess up.
- If you love someone, tell them.
- If you trip, get back up.
- If someone needs help, help them.
- If you see wrong, take a stance.

WORDS TO LIVE BY



"If you always do what  
you always did, you'll  
always get what you  
always got."

(Henry Ford)

