



North Vancouver Online Learning

Course Plan: *Mathematics 9*

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Course Description:

Mathematics 9 follows the BC Provincial curriculum and builds upon skills developed in previous grades. Topics in Mathematics 9 are organized into four components: Number, Patterns & Relations, Shape & Space, and Statistics & Probability. Content within this course should stem from a problem-solving approach with real-world applications leading to an understanding of the nature of mathematics through specific knowledge, skills and attitudes among and between the four components. This course requires students to communicate, demonstrate and evaluate their understanding in a variety of ways, including concretely, pictorially and symbolically.

Course Expectations:

The nature of the course demands that students manage their time effectively to complete the course by the deadline (See course completion schedule). Successful students should engage in coursework for at least one hour each day.

Students must successfully attempt all activities in the course in order to receive a passing grade, including unit quizzes, unit assignments, unit tests, review packages and the final exam.

The course material is run in Moodle, which is an interactive Learning Module System (LMS). This course teaches the material through the LMS (ie. course notes, interactive flash video lessons). Each lesson includes a learning guide that relates to the course lessons, as well as practice questions. All content, review materials and additional studying resources are found in the course in Moodle.

Students should take care that their communication with the instructor and with other students, through email, moodle-messaging, and/or forums, is course related, clear in message and respectful in tone.

This course is mainly to be completed by distance, although unit tests/exams require a password and must be completed under the supervision of a Distributed

Learning Teacher. Please follow the course completion schedule and contact your instructor in order to book a time to write a test. Lessons/notes/assignments may be completed at home.

Course work must be original; students are expected to complete their own work on an individual basis unless otherwise stated by the teacher. Any student who plagiarizes the work of another or does not do the work himself, either in test situations or on major assignments, will face disciplinary action. This may range from receiving a zero on an assignment or test to disciplinary action by the administration.

Enduring Understandings/Big Ideas:

The Math 9 program surveys a number of basic topics that lay out a foundation for further studies in Math. The enduring understandings/big ideas are:

- The principles and processes underlying operations with numbers apply equally to algebraic situations and can be described and analyzed*
- Computational fluency and flexibility with numbers extend to operations with rational numbers.*
- Continuous linear relationships can be identified and represented in many connected ways to identify regularities and make generalizations.*
- Similar shapes have proportional relationships that can be described, measured, and compared.*
- Analyzing the validity, reliability, and representation of data enables us to compare and interpret.*

Specific Learning Outcomes:

Please cut and paste the following link into your browser in order to view the Prescribed Learning Outcomes for this course:

<https://curriculum.gov.bc.ca/curriculum/mathematics/9>

Course Content:

Unit 1: Number Operations

Topics include: order of operations review, substitution, introduction to fractions, adding and subtracting fractions, multiplying and dividing fractions, computations involving decimals

Unit 2: Rational Numbers

Topics include: working with integers, comparing and ordering rational numbers, problem solving with numbers in decimal form, problem solving with numbers in fraction form, square roots of rational numbers

Unit 3: Powers and Exponents

Topics include: introduction to powers, exponent laws, exponents and order of operations, using exponents to solve problems

Unit 4: Polynomials

Topics include: math language for polynomials, like terms and equivalent polynomials, adding and subtracting polynomials, multiplying and dividing monomials, multiplying polynomials by monomials, dividing polynomials by monomials

Unit 5: Linear Relations

Topics include: interpreting patterns, interpreting graphs, and graphing linear relations

Unit 6: Solving Linear Equations

Topics include: solving simple and multi-step equations, solving equations in the form of $a(x + b) = c$ and $a(bx + c) = d(ex + f)$, solving

Unit 7: Scale Factors and Similarity

Topics include: enlargement and reductions, scale diagrams, similar triangles, and similar polygons

Unit 8: Data Analysis

Topics include: populations and samples, collecting data, statistics and probability problems

Unit 9: Language of Finance

Topics include: banking, simple interest, savings, planned purchases, and budgets

Student Learning Activities and Strategies:

- *online lessons*
- *online practice questions*
- *unit learning guides*
- *online unit practice quizzes*
- *unit exams, midterm exam and final exam*

Assessment:

Types of assessment:

Formative:

- *practice questions*
- *portfolio (note-taking supplements and practice questions)*
- *self-marking of learning guides*
- *online unit practice quizzes*
- *interactive online lessons*

Summative:

- *unit exams*
- *midterm exam*
- *final exam*

Evaluation:

Based on performance standards and criteria:

<i>Learning Activity</i>	<i>Percentage of Final Mark</i>
<i>Unit Learning Guides</i>	<i>10%</i>
<i>Portfolio *</i>	<i>10%</i>
<i>Unit Practice Quizzes</i>	<i>10%</i>
<i>Midterm Exam</i>	<i>10%</i>
<i>Unit Tests</i>	<i>45%</i>
<i>Final Exam</i>	<i>15%</i>
<i>Total</i>	<i>100%</i>

* The Portfolio is a collection of the student's completed "note-taking supplements" and "practice assignment" questions from the online interactive lessons. Note-taking supplements and practice assignments must show your neat/legible work and calculations. The portfolio must be kept in an orderly fashion in a binder. This is handed in at the end of the course for a mark of 10%. The portfolio is not optional.

Resources:

The required readings and assignments are provided online for each lesson. Students must have access to a computer with internet capabilities. The DL center at Mountainside is available for students who do not have computer access at home or who would like to meet with the teacher for support. There is no textbook/workbook required.

Other Supplies:

- *Loose leaf lined papers in a binder or a notebook*
- *Graph papers*
- *Metric ruler (centimeters)*
- *Pencils, pens, eraser*
- *Calculator (preferably scientific calculator with a square root $\sqrt{\quad}$, exponent function)*