

Material Covered:

Mathematics 9 is an academic course which will prepare you for selecting in Grade 10 either Workplace and Apprenticeship Math 10 or Pre-Algebra Math 10 as your math choice.

The course is comprised of the following 9 units:

- Square Roots and Surface Area
- Powers and Exponent Laws
- Rational Numbers
- Linear Relations
- Polynomials
- Linear Equations and Inequalities
- Similarity and Transformations
- Circle Geometry
- Probability and Statistics

Textbook:

The course uses the text *Math Makes Sense 9*. (ISBN-10: 0321495586 ISBN-13: 9780321495587, Pearson)

Notebook:

Your notebook should be neatly organized, as this will help you study for tests. Label the unit and topic headings clearly at the top of the page. Answer questions fully, so that the information makes sense and can be used later for studying. Show which textbook and which page number the information comes from so you can look it up again easily.

Grading:

This course works on a mastery system. You must pass the mastery tests in each unit to the 80% level before you can go on. In addition, there are cumulative tests from time to time. These are tests you can only take once, so studying before them is essential to do well. Your final mark for the course is based 60% on the mastery unit tests and 40% on the cumulative tests.

Goal:

The goal of this unit is to familiarize you with square roots, and determining the surface area of composite 3-D objects.

Objectives:

While completing this unit you will investigate the following topics and practice working with

- Determining the square roots of fractions and decimals that are perfect squares.
- Approximating the square roots of fractions and decimals that are non-perfect squares.
- Determining the surface area of composite 3-D objects to solve problems.

What to Do in this Unit:

- Read and follow the example problems at the beginning of each section, then do the practice problems on the pages in the table below. Be sure to tick off each section as you complete it.

Math Makes Sense 9 Textbook		
✓	Read Unit	Practice by doing these questions
	1.1	p.11 #3-10, 13, 14
	1.2	p.18 #4-7, 9-13, 16, 20
	1.3	p.30 #4-8, 10, 11
	1.4	p.40 #3-9, 11, 13, 14
	Review	p.45 #1-10, 12, 15-17, 19

- When you are ready, ask your teacher for the Unit 1 Test. Remember, you must get 80% to pass, so studying hard is essential to do well.

Goal:

The goal of this unit is to familiarize you with using powers and exponents in solving various math problems.

Objectives:

While completing this unit you will investigate the following topics and practice working with

- Using powers to represent repeated multiplication.
- Using patterns to understand a power with exponent zero.
- Solving problems involving powers.
- Performing operations with powers.
- Explaining and applying the order of operations with exponents.

What to Do in this Unit:

- Read and follow the example problems at the beginning of each section, then do the practice problems on the pages in the table below. Be sure to tick off each section as you complete it.

Math Makes Sense 9 Textbook		
✓	Read Unit	Practice by doing these questions
	2.1	p.55 #4-9, 12-14, 16, 18, 20
	2.2	p.61 #4-6, 8-11, 13, 14
	2.3	p.66 #3-5, 8, 10, 14, 16, 20
	2.4	p.76 #4-10, 13, 17, 18
	2.5	p.84 #4-6, 8, 10, 14, 16, 17, 19
	Review	p.87 #1, 3, 5-9, 12-14, 18-20, 23, 26

- When you are ready, ask your teacher for the Unit 2 Test. Remember, you must get 80% to pass, so studying hard is essential to do well.

Goal:

The goal of this unit is to familiarize you with using rational numbers when applying order of operations.

Objectives:

While completing this unit you will investigate the following topics and practice working with

- Comparing and ordering rational numbers.
- Solving problems by adding, subtracting, multiplying and dividing rational numbers.
- Explaining and applying the order of operation with rational numbers, with and without technology.

What to Do in this Unit:

- Read and follow the example problems at the beginning of each section, then do the practice problems on the pages in the table below. Be sure to tick off each section as you complete it.

Math Makes Sense 9 Textbook		
✓	Read Unit	Practice by doing these questions
	3.1	p.101 #5-8, 10, 12-17, 21, 23, 25
	3.2	p.111 #3-5, 7-9, 11, 13, 17
	3.3	p.119 #3-5, 7-9, 11-13
	3.4	p.127 #3-9, 11, 12, 15
	3.5	p.134 #3-9, 11-14
	3.6	p.140 #3, 4, 7, 11-14, 16
	Review	p.144 #2, 4, 5, 7, 8, 14, 19, 23

- When you are ready, ask your teacher for the Unit 3 Test. Remember, you must get 80% to pass, so studying hard is essential to do well.
- Go over your work from Units 1–3 in preparation for Cumulative Test #1. When you are ready to write it, ask your teacher. Remember, this test is one chance only, so do your best.

Goal:

The goal of this unit is to familiarize you with the use of linear relations.

Objectives:

While completing this unit you will investigate the following topics and practice working with

- Using expressions and equations to generalize patterns.
- Verifying a pattern by using substitution.
- Graphing and analyzing linear relations.
- Interpolating and extrapolating to solve problems.

What to Do in this Unit:

- Read and follow the example problems at the beginning of each section, then do the practice problems on the pages in the table below. Be sure to tick off each section as you complete it.

Math Makes Sense 9 Textbook		
✓	Read Unit	Practice by doing these questions
	4.1	p.159 #4-9,11,14-17
	4.4	p.170 #4-11,13-16
	4.5	p.196 #4-9,11-14
	Review	

- When you are ready, ask your teacher for the Unit 4 Test. Remember, you must get 80% to pass, so studying hard is essential to do well.

Goal:

The goal of this unit is to familiarize you with mathematical operations involving polynomials.

Objectives:

While completing this unit you will investigate the following topics and practice working with

- Recognizing, writing, describing and classifying polynomials.
- Using algebra tiles, pictures and algebraic expressions to represent polynomials.
- Strategies for adding and subtracting polynomials.
- Strategies for multiplying and dividing a polynomial by a monomial.

What to Do in this Unit:

- Read and follow the example problems at the beginning of each section, then do the practice problems on the pages in the table below. Be sure to tick off each section as you complete it.

Math Makes Sense 9 Textbook		
✓	Read Unit	Practice by doing these questions
	5.1	p.214 #4-9, 11, 13, 16
	5.2	p.222 #4-8, 11-15, 22
	5.3	p.228 #3, 5, 6, 8-10, 15, 17
	5.4	p.234 #4-9, 13, 15, 16
	5.5	p.246 #3-11, 15-17, 22, 23
	5.6	p.255 #4-12, 16, 20-22
	Review	p.259 #1-3, 5, 9, 12, 15, 19, 22, 26, 28

- When you are ready, ask your teacher for the Unit 5 Test. Remember, you must get 80% to pass, so studying hard is essential to do well.

Goal:

The goal of this unit is to familiarize you with linear equations and inequalities.

Objectives:

While completing this unit you will investigate the following topics and practice working with

- Modelling and solving problems using linear equations.
- Explaining and illustrating strategies to solve linear inequalities.

What to Do in this Unit:

- Read and follow the example problems at the beginning of each section, then do the practice problems on the pages in the table below. Be sure to tick off each section as you complete it.

Math Makes Sense 9 Textbook		
✓	Read Unit	Practice by doing these questions
	6.1	p.271 #5, 6, 8-14, 16-19
	6.2	p.280 #4-13, 17-21
	6.3	p.292 #3-9, 11-13
	6.4	p.298 #4-9, 12-15
	6.5	p.305 #3-5, 7-14, 16
	Review	p.308 #1-4,7, 8, 10-16

- When you are ready, ask your teacher for the Unit 6 Test. Remember, you must get 80% to pass, so studying hard is essential to do well.
- Go over your work from Units 4–6 in preparation for Cumulative Test #2. When you are ready to write it, ask your teacher. Remember, this test is one chance only, so do your best.

Goal:

The goal of this unit is to familiarize you with similar polygons, symmetry and transformations.

Objectives:

While completing this unit you will investigate the following topics and practice working with

- Drawing and interpreting scale diagrams.
- Applying properties of similar polygons.
- Identifying and describing line symmetry and rotational symmetry.

What to Do in this Unit:

- Read and follow the example problems at the beginning of each section, then do the practice problems on the pages in the table below. Be sure to tick off each section as you complete it.
-

Math Makes Sense 9 Textbook		
✓	Read Unit	Practice by doing these questions
	7.1	p.323 #4-9, 11, 12, 14, 15
	7.2	p.329 #4-15, 20
	7.3	p.341 #4-11, 13, 14
	7.4	p.349 #4-7, 9-15
	7.5	p.357 #3-6, 8-11
	7.6	p.365 #4-11, 13-15
	7.7	p.373 #3-13
	Review	p.377 #1-8, 10-15, 17, 18

- When you are ready, ask your teacher for the Unit 7 Test. Remember, you must get 80% to pass, so studying hard is essential to do well.

Goal:

The goal of this unit is to improve your skills working with circles and circle properties.

Objectives:

While completing this unit you will investigate the following topics and practice working with

- Circle properties that relate a tangent to a circle and to the radius of a circle.
- Circle properties that relate a chord in a circle, its perpendicular bisector, and the centre of the circle.
- Circle properties that relate the measures of angles in circles.

What to Do in this Unit:

- Read and follow the example problems at the beginning of each section, then do the practice problems on the pages in the table below. Be sure to tick off each section as you complete it.

Math Makes Sense 9 Textbook		
✓	Read Unit	Practice by doing these questions
	8.1	p.388 #3-9, 11-14, 17, 18
	8.2	p.397 #3-7, 10, 12, 14, 17
	8.3	p.410 #3-6, 9, 11, 15
	Review	p.418 #1, 2, 4-10

- When you are ready, ask your teacher for the Unit 8 Test. Remember, you must get 80% to pass, so studying hard is essential to do well.

Goal:

The goal of this unit is to improve your skills working with data, statistics and probabilities.

Objectives:

While completing this unit you will investigate the following topics and practice working with

- Understanding the role of probability in society.
- Identifying and addressing problems related to data collection.
- Using either a population or a sample to answer a question.
- Developing and implementing a plan to collect, display, and analyze data.

What to Do in this Unit:

- Read and follow the example problems at the beginning of each section, then do the practice problems on the pages in the table below. Be sure to tick off each section as you complete it.

Math Makes Sense 9 Textbook		
✓	Read Unit	Practice by doing these questions
	9.1	p.427 #3-9, 11, 14, 17
	9.2	p.435 #3-10, 13
	9.3	p.440 #3-6, 8-10
	9.4	p.448 #3-6, 8-10, 12
	9.5	p.455 #3-10
	Review	p.458 #1-3, 5-7, 10-16

- When you are ready, ask your teacher for the Unit 9 Test. Remember, you must get 80% to pass, so studying hard is essential to do well.
- Go over your work from Units 7–9 in preparation for Cumulative Test #3. When you are ready to write it, ask your teacher. Remember, this test is one chance only, so do your best.
- **Congratulations! You've finished Mathematics 9!**