

Rationale:

The Apprenticeship and Work Place Mathematics program is designed to prepare you for the mathematical understandings and critical-thinking skills required for successful entry into the work force and the majority of trades, and prepares you for Apprenticeship and Workplace Mathematics 11.

Material Covered:

The Apprenticeship and Workplace Mathematics course is divided into four main sections:

Money

- Earning income
- Working with money

Measurement

- Linear measurement
- Measurement problems
- Area measurement
- Capacity, mass, volume & temperature

Lines, Angles, Shapes, and Transformations

- Lines and angles
- Relationships in right triangles
- Similar polygons
- Transformations

Textbook:

The course uses the workbook text *Mathematics for Apprenticeship and Workplace 10*.

(ISBN 978-0-17-650271-3, Nelson Education)

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 page the information comes from so you can look it up again easily. There are three pages of formula sheets you are allowed to use on all tests.

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 class mark for the course is based 60% on the mastery unit tests and 40% on the cumulative tests. Students are reminded that this course has a provincial exam that counts for 20% of the final mark while your class mark counts for 80%. **Be sure to write a practice provincial exam by going to the B.C. Ministry of Education website: www.bced.gov.bc.ca/exams, before you take the real thing.**

Goal:

The goal of this unit is learn of the ways income is earned and to calculate the ways income is paid.

Objectives:

By the end of this unit you should be able to:

- Identify ways of earning income
- Calculate hourly wages, including overtime
- Calculate commission income
- Calculate piecework income
- Calculate net income

What to Do in this Unit:

- This Unit uses **Chapter 1** in the Mathematics for Apprenticeship and Workplace workbook.
- Read and follow the example problems at the beginning of each section, then do the practice problems listed for each section in the table below. Be sure to tick off each section as you complete it.

Chapter 1		
	Getting Started	All questions
	1.1	All questions
	1.2	All questions
	1.3	All questions
	1.4	All questions
	Mid-Chapter Review	All questions
	1.5	Omit!
	1.6	All questions
	1.7	All questions
	1.8	All questions
	1.9	Omit!
	Chapter Review	All questions

- 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 improve your skills working with money.

Objectives:

By the end of this unit you should be able to:

- Calculate unit price and determine best buy
- Calculate discounts and increases
- Analyze sales promotions
- Calculate currency exchanges

What to Do in this Unit:

- This Unit uses **Chapter 6** in the Mathematics for Apprenticeship and Workplace workbook.
- 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.

Chapter 6		
	Getting Started	All questions
	6.1	All questions
	6.2	All questions
	6.3	All questions
	Mid-Chapter Review	All questions
	6.4	All questions
	6.5	Omit!
	6.6	All questions
	6.7	All questions
	Chapter Review	All questions

- 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.
- Go over your work from Units 1 and 2 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 increase your skills working with linear measurements in the metric and Imperial systems.

Objectives:

By the end of this unit you should be able to:

- Use Imperial and metric units for length
- Estimate and measure length
- Determine the midpoint of a line
- Express Imperial units as metric
- Express metric units for Imperial

What to Do in this Unit:

- This Unit uses **Chapter 2** in the Mathematics for Apprenticeship and Workplace workbook.
- 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.

Chapter 2		
	Getting Started	All questions
	2.1	All questions
	2.2	All questions
	2.3	All questions
	Mid-Chapter Review	All questions
	2.4	All questions
	2.5	All questions
	2.6	Omit!
	2.7	All questions
	Chapter Review	All questions

- 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.

Goal:

The goal of this unit is to increase your skills with measurement problems.

Objectives:

By the end of this unit you should be able to:

- Solve problems with fractions and decimals
- Convert measurements within the Imperial system and within the metric system.
- Convert measurements from the Imperial system to the metric system and vice versa.
- Solve perimeter and circumference problems.

What to Do in this Unit:

- This Unit uses **Chapter 3** in the Mathematics for Apprenticeship and Workplace workbook.
- 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.

Chapter 3		
	Getting Started	All questions
	3.1	All questions
	3.2	All questions
	3.3	All questions
	Mid-Chapter Review	All questions
	3.4	All questions
	3.5	All questions
	3.6	Omit!
	Chapter Review	All questions

- 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 increase your skills at calculating area.

Objectives:

By the end of this unit you should be able to:

- Estimate areas using referents and grids
- Calculate the area of 2-D shapes
- Express area in different systems
- Calculate the area of regular polygons
- Calculate the area of irregular polygons
- Calculate the area of composite shapes
- Calculate the area of 3-D objects

What to Do in this Unit:

- This Unit uses **Chapter 4** in the Mathematics for Apprenticeship and Workplace workbook.
- 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.

Chapter 4		
	Getting Started	All questions
	4.1	All questions
	4.2	All questions
	4.3	All questions
	4.4	All questions
	4.5	All questions
	Mid-Chapter Review	All questions
	4.6	Omit!
	4.7	All questions
	4.8	All questions
	4.9	All questions

- 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 increase your skills with capacity, volume, mass and temperature.

Objectives:

By the end of this unit you should be able to:

- identify corresponding and congruent angles
- identify corresponding and proportional sides
- determine if polygons are similar (proportional) based on side-length ratios and/or angles
- explain how you know two or more polygons are or are not similar
- draw a polygon that is similar to a given polygon
- solve problems that involve similar figures

What to Do in this Unit:

- This Unit uses **Chapter 5** in the Mathematics for Apprenticeship and Workplace workbook.
- 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.

Chapter 5		
	Getting Started	All questions
	5.1	All questions
	5.2	All questions
	5.3	All questions
	5.4	All questions
	5.5	All questions
	Mid-Chapter Review	All questions
	5.7	Omit!
	5.9	All questions
	5.9	Omit!
	5.10	All questions
	5.11	All questions
	Chapter Review	All questions

- 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 3—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 increase your skills with lines and angles.

Objectives:

By the end of this unit you should be able to:

- Estimate, measure, and describe angles
- Bisect and replicate angles
- Classify lines and angles
- Understand the relationships between parallel lines and transversals
- Calculate angles

What to Do in this Unit:

- This Unit uses **Chapter 7** in the Mathematics for Apprenticeship and Workplace workbook.
- 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.

Chapter 7		
	Getting Started	All questions
	7.1	All questions
	7.2	All questions
	7.3	All questions
	7.4	All questions
	Mid-Chapter Review	All questions
	7.5	Omit!
	7.6	All questions
	7.7	All questions
	7.8	Omit!
	Chapter Review	All questions

- 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 increase your skills with right triangles.

Objectives:

By the end of this unit you should be able to:

- Use the Pythagorean Theorem to determine side lengths of right angle triangles
- Define the sine (sin), cosine (cos) and tangent (tan) ratios
- Use the trigonometric ratios to determine the side lengths of right angle triangles
- Use the trigonometric ratios to determine the measure of angles within right angle triangles
- Solve problems that involve right triangles and trigonometric ratios

What to Do in this Unit:

- This Unit uses **Chapter 8** in the Mathematics for Apprenticeship and Workplace workbook.
- 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.

Chapter 8		
	Getting Started	All questions
	8.1	All questions
	8.2	All questions
	8.3	All questions
	Mid-Chapter Review	All questions
	8.4	All questions
	8.5	All questions
	8.6	All questions
	8.7	All questions
	8.8	Omit!
	Chapter Review	All questions

- 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 increase your skills with similar polygons.

Objectives:

By the end of this unit you should be able to:

- Identify similar polygons
- Identify similar triangles
- Draw similar polygons
- Solve similar polygon and triangle problems

What to Do in this Unit:

- This Unit uses **Chapter 9** in the Mathematics for Apprenticeship and Workplace workbook.
- 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.

Chapter 9		
✓	Unit	Practice by doing these questions
	Getting Started	All questions
	9.1	All questions
	9.2	All questions
	9.3	Omit!
	9.4	All questions
	Mid-Chapter Review	All questions
	9.5	Omit!
	9.6	All questions
	Chapter Review	All questions

- 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.

Goal:

The goal of this unit is to increase your skills with transformations.

Objectives:

By the end of this unit you should be able to:

- Identify and create translations, reflections, rotations and dilations
- Combine and apply transformations

What to Do in this Unit:

- This Unit uses Chapter 1 in the Mathematics for Apprenticeship and Workplace workbook.
- 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.

Chapter		
✓	Unit	Practice by doing these questions
	Getting Started	All questions
	10.1	All questions
	10.2	All questions
	10.3	All questions
	Mid-Chapter Review	All questions
	10.4	All questions
	10.5	All questions
	10.6	All questions
	10.7	Omit!
	Chapter Review	All questions

- When you are ready ask your teacher for the Unit 10 Test. Remember, you must get 80% to pass, so studying hard is essential to do well.
- Go over your work from Units 7—10 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.
- **Students are strongly advised to write a practice provincial exam by going to the B.C. Ministry of Education website: www.bced.gov.bc.ca/exams, before you write the real thing.**
- **Congratulations! You've finished Math 10 Apprenticeship & Workplace!**