

Competency Statements for Wm. E. Hay Mathematics for grades 7 through 12:

Upon completion of grade 12 a student will have developed a combination of some/all of the following competencies depending upon the stream of math they should be able to...

1. Use proportion to solve real-life problems.
2. Use algebra to solve real-life problems.
3. Connect numbers to real-life experiences
4. Communicate ideas effectively using graphs.
5. Use shapes and objects to solve real-life problems.
6. Use tools and estimation to determine measurements.
7. Use trigonometry to solve real-life problems.
8. Use logic and critical thinking to solve real-life problems.
9. Use statistics to display information regarding real-life scenarios.
10. Develop an appreciation of mathematics in society.

Competency breakdown by course...

K&E Math 8&9

C3 - Connect numbers to real-life experiences

Units of study **50%**

Whole Numbers,

Decimals

Number Theory

Ratio and Proportion

Fractions

Percent

Algebra

- *C4 - Communicate ideas effectively using graphs.* **5%**

Units of Study

- Coordinate Graphing

- *C6 - Use tools and estimation to determine measurements.* **25%**

Units of Study

- Metric Measurement
- Customary Measurement
- Circle, Cylinders, and Time

- *C5 - Use shapes and objects to solve real-life problems.* **15%**

Units of Study

- Draw and Classify Triangles
- Transformations
- Intro to Geometry
- Scale drawing
- Symmetry (+ tessellations in 8)

- *C9 - Use statistics to display information regarding real-life scenarios.* **5%**

Units of Study

- Graphs (supplement with Spreadsheets tech)

Math 7

- *C2 - Use algebra to solve real-life problems* **10%**
 - Units of Study:
 - Chapter 9: Linear Relations and Linear Equations
- *C3 - Connect numbers to real-life experiences* **50%**
 - Units of Study:
 - Chapter 1: Number Relationships
 - Chapter 2: Fraction
 - Chapter 3: Decimal Numbers
 - Chapter 4: Percents
 - Chapter 6: Addition and Subtraction of Integers
 - Chapter 10: Probability
- *C4 - Communicate ideas effectively using graphs* **5%**
 - Units of Study:
 - Chapter 11: Circle Graphs
- *C6 - Use tools and estimation to determine measurements* **15%**
 - Units of Study:
 - Chapter 5: Measurement
 - Chapter 7: 2-D Geometry
- *C9 - Use statistics to display information regarding real-life scenarios.* **5%**
 - Units of Study:
 - Chapter 8: Statistics
- *C11 - Final Exam* **15%**

Math 8

- *C1 - Use proportion to solve real-life problems* **15%**
 - Units of Study:
 - Chapter 3: Ratios and Rates
 - Chapter 4: Percents
- *C2 - Use algebra to solve real-life problems* **15%**
 - Units of Study:
 - Chapter 9: Linear Relations and Linear Equations
- *C3 - Connect numbers to real-life experiences* **30%**
 - Units of Study:
 - Chapter 1: Number Relationships
 - Chapter 2: Fraction Operations
 - Chapter 6: Integers
- *C4 - Communicate ideas effectively using graphs* **5%**
 - Units of Study:
 - Chapter 8: Data Analysis
- *C5 - Use shapes and objects to solve real-life problems* **5%**
 - Units of Study:
 - Chapter 7: Tessellations
 - Chapter 11: 3-D Geometry
- *C6 - Use tools and estimation to determine measurements* **10%**
 - Units of Study:
 - Chapter 5: Measurement
- *C8 - Use logic and critical thinking to solve real-life problems* **5%**
 - Units of Study:
 - Chapter 10: Probability
- *C11 - Final Exam* **15%**

Math 9

C3 - Connect numbers to real-life experiences **30%**

- o Units of Study
 - Rational Numbers
 - Powers and Square Roots
 - *Spreadsheets*

● *C2 - Use algebra to solve real-life problems.* **20%**

- o Units of Study
 - Linear Relations
 - Polynomials

Notes: Focus on Specific Outcome 3 under General Outcome: Represent algebraic expressions in multiple ways.

● *C6 - Use tools and estimation to determine measurements.* **30%**

- o Units of Study
 - Measurement
 - Similar Polygons
 - Symmetry
 - Circle Geometry

● *C9 - Use statistics to display information regarding real-life scenarios.* **10%**

- o Units of Study
 - Data Collection and Analysis
 - Probability
 - Spreadsheets

● *Provincial Achievement Test* **10%**

Math 9-3

- *C3 - Connect numbers to real-life experiences* **50%**

Units of Study

Whole Numbers

Decimals

Number Theory

Ratio and Proportion

Fractions

Percent

Algebra

- *C4 - Communicate ideas effectively using graphs.* **5%**

Units of Study

- Coordinate Graphing (*supplement*)

- *C6 - Use tools and estimation to determine measurements* **25%**

Units of Study

- Metric Measurement
- Customary Measurement
- Circle, Cylinders, and Time

- *C5 - Use shapes and objects to solve real-life problems.* **15%**

Units of Study

- Draw and Classify Triangles (*supp.*)
- Transformations (*supp.*)
- Intro to Geometry
- Scale drawing
- Symmetry

- *C9 - Use statistics to display information regarding real-life scenarios.* **5%**

Units of Study; Graphs (supplement with Spreadsheets tech)

Math 10 Common:

- *C2 – Use algebra to solve real-life problems* **35%**
 - Units of Study (20%)
 - Linear Relations and Functions
 - Linear Equations and Graphs
 - Solving Systems of Linear Equations Algebraically
 - Units of Study (15%)
 - Polynomials
 - Focus – Factoring
- *C4 – Communicate ideas effectively using graphs* **20%**
 - Units of Study
 - Linear Relations and Functions
 - Linear Equations and Graphs
 - Solving Systems of Linear Equations Graphically
- *C3 - Connect numbers to real-life problems.* **20%**
 - Units of Study
 - Exponents and Radicals
 - Focus – Scientific notation
- *C6 - Use tools and estimation to determine measurements.* **16%**
 - Units of Study
 - Measurement
 - Surface Area and Volume
- *C7 – Use trigonometry to solve real-life problems.* **9%**
 - Units of Study
 - Right Triangle Trigonometry

Math 10-3:

- *C6 - Use tools and estimation to determine measurements.* **45%**
 - Units of Study (40%)
 - Length, Area and Volume
 - Mass, Temperature and Volume
 - Units of Study (5%)
 - Angles and Parallel Lines

- *C1 - Use proportion to solve real-life.* **10%**
 - Units of Study
 - Similarity of Figures

- *C7 - Use trigonometry to solve real-life problems.* **20%**
 - Units of Study
 - Trigonometry of Right Triangles

- *C3 – Connect numbers to real-life experiences.* **25%**
 - Units of Study
 - Unit Pricing and Currency Exchange
 - Earning an Income

Math 20-1:

- *C2 - Use algebra to solve real-life problems.* **65%**
 - Units of Study
 - Sequence and Series
 - Quadratic Functions
 - Quadratic Equations
 - Radical Expressions and Equations
 - Rational Expressions and Equations
 - Absolute Value and Reciprocal Functions
 - Systems of Equations
 - Systems of Linear and Quadratic Inequalities
 - Focus - Factoring Review

- *C4 - Communicate ideas effectively using graphs.* **20%**
 - Unit of Study
 - Quadratic Functions
 - Quadratic Equations
 - Absolute Value and Reciprocal Functions
 - Systems of Equations
 - Systems of Linear and Quadratic Inequalities

- *C7 - Use trigonometry to solve real-life problems.* **15%**
 - Units of Study
 - Trigonometry

Math 20-2:

- *C2 - Use algebra to solve real-life problems.* **15%**
 - Units of Study
 - Quadratic Functions
 - Quadratic Equations
- *C4 - Communicate ideas effectively using graphs.* **15%**
 - Units of Study
 - Quadratic Functions
 - Quadratic Equations
- *C8 – Use logic and critical thinking to solve real-life problems* **10%**
 - Units of Study
 - Inductive and Deductive Reasoning
- *C3 – Connect numbers to real-life experiences.* **15%**
 - Units of Study
 - Radicals
- *C6 - Use tools and estimation to determine measurements.* **10%**
 - Units of Study
 - Properties of Angles and Triangles
- *C7 - Use trigonometry to solve real life problems.* **10%**
 - Units of Study
 - Acute Triangle Trigonometry
- *C1 - Use proportion to solve real-life problems.* **10%**
 - Units of Study
 - Proportional Reasoning

- *C9 - Use statistics to display information regarding real-life scenarios.* **15%**
 - Units of Study
 - Statistical Reasoning

Math 20-3:

- *C3 - Connect numbers to real-life experiences.* **30%**
 - Units of Study
 - Financial Services
 - Personal Budgets
- *C2 - Use algebra to solve real-life problems.* **15%**
 - Units of Study
 - Slope and Rate of Change
- *C1 - Use proportion to solve real-life problems* **10%**
 - Units of Study
 - Scale Representation
- *C7 - Use trigonometry to solve real-life problems* **15%**
 - Units of Study
 - Trigonometry of Right Triangles
- *C6 - Use tools and estimation to determine measurements.* **20%**
 - Units of Study
 - Surface Area, Volume and Capacity
- *C9 - Use statistics to display information regarding real-life scenarios.* **10%**
 - Units of Study
 - Graphical Representations

Math 30-1

- *C2 - Use algebra to solve real-life problems.* **30%**
 - Units of Study
 - Function Transformations
 - Polynomial Functions
 - Exponential Functions
 - Logarithmic Functions
 - Rational Functions
 - Function Operations

- *C7 - Use trigonometry to solve real-life problems.* **29%**
 - Units of Study
 - Trigonometry and the Unit Circle
 - Trigonometric functions and Graphs
 - Trigonometric Identities

- *C4 - Communicate ideas effectively using graphs.* **25%**
 - Units of Study
 - Function Transformations
 - Radical Functions
 - Polynomial Functions
 - Exponential Functions
 - Logarithmic Functions
 - Rational Functions
 - Function Operations

- *C8 - Use logic and critical thinking to solve real-life problems.* **16%**
 - Units of Study
 - Permutations, Combinations and the Binomial Theorem

Math 30-2

- *C8 - Use logic and critical thinking to solve real-life problems.* **35%**
 - Units of Study
 - Permutations and Combinations
 - Probability
 - Set theory
 - Puzzles and Games
- *C2 - Use algebra to solve real-life problems.* **30%**
 - Units of Study
 - Rational Expressions and Equations
 - Exponential Functions
 - Logarithmic Functions
- *C4 - Communicate ideas effectively using graphs.* **25%**
 - Units of Study
 - Polynomial Functions
 - Exponential Functions
 - Logarithmic Functions
 - Sinusoidal Functions
- *C10 - Develop an appreciation of mathematics in society.* **10%**
 - Possibilities
 - Presentation
 - Presentation Review Questions

Math 30-3:

- *C5 - Use shapes and objects to solve real-life problems* **20%**
 - Units of Study
 - Properties of Geometric Figures
 - Transformations
- *C2 - Use algebra to solve real-life problems.* **20%**
 - Units of Study
 - Linear Relations
- *C3 - Connect numbers to real-life experiences.* **20%**
 - Units of Study
 - Puzzles and Games
 - Owning a Business
- *C6 - Use tools and estimation to determine measurements.* **10%**
 - Units of Study
 - Limits to Measurement
- *C7 – Use trigonometry to solve real-life problems* **10%**
 - Units of Study
 - Trigonometry
- *C9 - Use statistics to display information regarding real-life scenarios.* **10%**
 - Units of Study
 - Statistics
- *C8 - Use logic and critical thinking to solve real-life problems.* **10%**
 - Units of Study
 - Probability and Odds

Math 10 – 4, 20-4:

- *C3 - Connect numbers to real-life experiences* **30%**
 - develop and demonstrate a number sense for whole numbers, common fractions, decimals, percents and integers and apply arithmetic operations to solve everyday problems.

- *C6 - Use tools and estimation to determine measurements.* **30%**
 - estimate, measure and compare using whole numbers, decimals, fractions and metric (SI) and Imperial units of measure to solve everyday problems.

- *C8 - Use logic and critical thinking to solve real-life problems.* **10%**
 - express and use patterns, variables and expressions, including those used in business and industry, with graphs to solve problems at home, in the community and in the workplace.

- *C2 - Use algebra to solve real-life problems* **10%**
 - use variables and equations to express, summarize and apply relationships as problem-solving tools in a restricted range of contexts

- *C5 - Use shapes and objects to solve real-life problems* **10%**
 - use visualization and symmetry to:
 - extend their awareness of objects and shapes
 - create and examine patterns and designs using congruence, symmetry, translation, rotation and reflection.

- *C9 - Use statistics to display information regarding real-life scenarios.* **10%**
 - develop and implement a plan for the collection, display and examination of data and information, using technology and other strategies as required.

Math 31

- *C2 - Use algebra to solve real-life problems* **50%**
 - Units of Study
 - Limits
 - Derivatives
 - Integration

- *C4 - Communicate ideas effectively using graphs* **20%**
 - Units of Study
 - Limits
 - Curve sketching

- *C8 - Use logic and critical thinking to solve real-life problems* **15%**
 - Units of Study
 - Applications

- *C7 - Use trigonometry to solve real-life problems* **15%**
 - Units of Study
 - Trigonometry

While students are completing their competencies, some processes used in the classroom would include:

- modeling real world applications through problem solving that illustrate to students what you could do with math skills in various careers
- improving communication skills through journaling, student presentations, and written response questions
- using technology (i.e. calculators, computers, cameras and Smartboards) to enhance learning strategies
- encouraging creativity by allowing students to show/choose from more than one method to solve a problem

MATH ENHANCEMENT 9, 15, 25, 35 COMPETENCIES

- Competency #1** Students will become more proficient in math concepts
Weighting: 40%
- Competency #2** Students will learn basic organization skills that are necessary for success.
Weighting: 30%
- Competency #3** Students will be able to identify their strengths and weaknesses through journaling.
Weighting: 20%
- Competency #4** Students will track activities, assignments and assessment to see the correlation between time invested and success.
Weighting: 10%