

# Erindale College

<b>Assessment Period:</b>	<b>2021 S2</b>
<b>Course:</b>	<b>CONTEMPORARY MATHEMATICS</b>
<b>Unit:</b>	<b>Unit 4: Contemporary Mathematics (1.0)</b>
<b>Accreditation:</b>	<b>A</b>
<b>Year:</b>	<b>12</b>

## Unit Goals

- calculate the energy value of various foods and the energy needed for various activities
- interpret graphs and statistics
- collect and analyse mathematical data

## Content Description

- interprets and comprehends a range of everyday mathematical information that is embedded in familiar and routine texts
- interprets and comprehends:
  - whole numbers and familiar or routine fractions, decimals and percentages
  - familiar and routine measurement (for example, dates and time, including 24 hour times, 2D and 3D shapes, including pyramids and cylinders, length, mass, volume/capacity, temperature and simple area measures, maps and plans, data, tables, graphs and charts, and common chance events)
- draws on a combination of hands-on, in-context materials, personal experience, mathematical and other prior knowledge to:
  - select appropriate methods of solution from a limited range of mathematical processes
  - use developing estimation, and other assessment skills, to check and reflect on the outcome and its appropriateness to the context and task
- uses a blend of personal 'in-the-head' methods and formal pen and paper methods to calculate and uses calculator/technological processes and tools to undertake the problem solving process
- selects and uses appropriate tools, hand-held devices, computers and technological processes, e.g. uses a tape measure to measure the dimensions of a window in mm or creates a personal weekly budget in a spreadsheet
- calculates with whole numbers and everyday or routine fractions, decimals and percentages, and where appropriate converting between equivalent forms (includes dividing by small whole numbers only, with division by decimal values and long division worked out on a calculator; calculations with simple fractions to be multiplication of whole number values only, e.g. 20% or 1/5 of \$250
- uses and applies order of arithmetical operations to solve multi-step calculations
- uses and applies rates in familiar or routine situations, e.g. km/hr, \$/kg or \$/m
- perform measurements, estimates and calculations using for example, 2D and 3D shapes, constructing common 3D shapes, length, perimeter, mass, capacity/volume, time, temperature and simple area (for rectangular areas only, using  $A = L \times W$ , or estimates area of a non-rectangular shape by counting squares), distance, direction, coordinates, simple scales, labels, symbols and keys to read and use everyday maps and plans
- converts between routine metric units by applying understanding of common prefixes, e.g. milli, centi

or kilo

- collects and organises familiar data and constructs tables, graphs and charts, manually or with spreadsheets, using simple and familiar or routine scales and axes
- describes, compares and interprets the likelihood of everyday chance events (e.g. rolling a six on a dice or the chance of rain) using qualitative terms such as certain, likely, impossible and relates these to everyday or routine fractions, decimals or percentages
- uses a combination of both informal and formal written mathematical language and symbols and general language to document and report on the mathematical and problem solving process and results
- uses a combination of both informal and formal oral mathematical and general language to present and discuss the mathematical and problem solving process and result
- uses a combination of both formal and informal symbolism, diagrams, graphs and conventions relevant to the mathematical knowledge of the level, e.g.
  - o  $1/100$ , 12.5%
  - o km/hr, \$/kg
  - o  $1.25\text{ m} = 1250\text{ mm}$

## Assessment Tasks

Name	Due Date	Weighting
Test 1	17 August	25%
Assignment 1	9 September	25%
Test 2	26 October	25%
Assignment 2	11 November	25%

## School Assessment Information

### For penalties for late and non-submission of work

See [BSSS Policy and Procedure Manual 4.3.10](#) for further information.

### For academic integrity

See [BSSS Policy and Procedure Manual 4.3.12](#) for further information.

### For appeals processes

See [BSSS Policy and Procedure Manual 7.2](#) for further information.

### For moderation procedures (internal and external)

See [BSSS Policy and Procedure Manual 5](#) for further information.

## Achievement Standards for CONTEMPORARY MATHEMATICS A - Year 12

	<i>A student who achieves an A grade typically</i>	<i>A student who achieves a B grade typically</i>	<i>A student who achieves a C grade typically</i>	<i>A student who achieves a D grade typically</i>	<i>A student who achieves an E grade typically</i>
<b>Reasoning and Communications</b>	<ul style="list-style-type: none"> <li>• represents complex mathematical concepts in numerical and graphical form in routine and non-routine problems in a variety of contexts</li> <li>• communicates mathematical information in oral, written and/or multimodal forms, which are logical and reasoned, using appropriate language</li> <li>• analyse the reasonableness of solutions to routine and non-routine problems in a variety of contexts</li> <li>• reflects with insight on their own thinking and that of others and evaluates planning, time management, use of appropriate strategies to work independently and collaboratively</li> <li>• evaluates the potential of Mathematics to generate knowledge in the public good</li> </ul>	<ul style="list-style-type: none"> <li>• represents mathematical concepts in numerical and graphical form in routine and non-routine problems in a variety of contexts</li> <li>• communicates mathematical information in oral, written and/or multimodal forms, which are logical and clear, using appropriate language</li> <li>• explains the reasonableness of solutions to routine and non-routine problems</li> <li>• reflects on their own thinking and analyses planning, time management, use of appropriate strategies to work independently and collaboratively</li> <li>• analyses the potential of Mathematics to generate knowledge in the public good</li> </ul>	<ul style="list-style-type: none"> <li>• represents mathematical concepts in numerical and graphical form to some routine and non-routine problems in some contexts</li> <li>• communicates mathematical judgements in oral, written and/or multimodal forms, using appropriate language</li> <li>• describes the reasonableness of solutions to some routine and non-routine problems</li> <li>• reflects on their own thinking and explains planning, time management, use of appropriate strategies to work independently and collaboratively</li> <li>• explains the potential of Mathematics to generate knowledge in the public good</li> </ul>	<ul style="list-style-type: none"> <li>• represents simple mathematical concepts in numerical or graphical form in routine problems in structured contexts</li> <li>• communicates simple mathematical judgements in oral, written and/or multimodal forms, with some use of appropriate language</li> <li>• describes the appropriateness of solutions to routine problems</li> <li>• reflects on their own thinking with some reference to planning, time management, use of appropriate strategies to work independently and collaboratively</li> <li>• describes the potential of Mathematics to generate knowledge in the public good</li> </ul>	<ul style="list-style-type: none"> <li>• represents simple mathematical concepts in numerical or graphical form in structured contexts</li> <li>• communicates simple mathematical information in oral, written and/or multimodal forms, with limited use of appropriate language</li> <li>• identifies solutions to routine problems</li> <li>• reflects on their own thinking with little or no reference to planning, time management, use of appropriate strategies to work independently and collaboratively</li> <li>• identifies some ways in which Mathematics is used to generate knowledge in the public good</li> </ul>
<b>Concepts and Techniques</b>	<ul style="list-style-type: none"> <li>• applies mathematical concepts in a variety of complex contexts to routine and non-routine problems</li> <li>• select and applies mathematical techniques to solve routine and non-routine problems in a variety of contexts</li> <li>• uses digital technologies effectively to solve routine and non-routine problems in a variety of contexts</li> </ul>	<ul style="list-style-type: none"> <li>• applies mathematical concepts in a variety of contexts to routine and non-routine problems</li> <li>• applies mathematical techniques to solve routine and non-routine problems in a variety of contexts</li> <li>• uses digital technologies appropriately to solve routine and non-routine problems in a variety of contexts</li> </ul>	<ul style="list-style-type: none"> <li>• applies mathematical concepts in some contexts to routine and non-routine problems</li> <li>• applies simple mathematical techniques to solve routine problems in some contexts</li> <li>• uses digital technologies appropriately to solve routine problems in some contexts</li> </ul>	<ul style="list-style-type: none"> <li>• applies simple mathematical concepts in limited contexts to routine problems</li> <li>• uses simple mathematical techniques to solve routine problems in limited contexts</li> <li>• uses digital technologies to solve routine problems in limited contexts</li> </ul>	<ul style="list-style-type: none"> <li>• applies simple mathematical concepts in structured contexts</li> <li>• uses simple mathematical techniques to solve routine problems in structured contexts</li> <li>• uses digital technologies to solve routine problems in structured contexts</li> </ul>