Erindale College

MATHEMATICS, SCIENCE AND INFORMATION TECHNOLOGY ACADEMY
UNIT OUTLINE

MATHEMATICS FACULTY

SEMESTER 1 2019

Course Title	Year 10 Mathematics
Term 1 Unit	Algebra Measurement
Term 2 Unit	Financial Mathematics Linear Relationships

Curriculum Content

- Factorise algebraic expressions by taking out a common algebraic factor (ACMNA230)
- Expand binomial products and factorise monic quadratic expressions using a variety of strategies (ACMNA233)
- Apply the four operations to simple algebraic fractions with numerical denominators (ACMNA232)
- Substitute values into formulas to determine an unknown (ACMNA234)
- Solve problems involving surface area and volume for a range of prisms, cylinders and composite solids (ACMMG242)
- Solve problems involving linear equations, including those derived from formulas (ACMNA235)
- Solve linear inequalities and graph their solutions on a number line (ACMNA236)
- Solve linear simultaneous equations, using algebraic and graphical techniques including using digital technology (ACMNA237)
- Solve linear equations involving simple algebraic fractions (ACMNA240)
- Connect the compound interest formula to repeated applications of simple interest using appropriate digital technologies (ACMNA229)
- Formulate proofs involving congruent triangles and angle properties (ACMMG243)
- Apply logical reasoning, including the use of congruence and similarity, to proofs and numerical exercises involving plane shapes (ACMMG244)

Subject levies and equipment
Students must bring an exercise book (lined, with or without a margin), writing equipment including pens (blue or black), HB pencil, ruler, and a scientific calculator. An additional 5mm grid book is useful for some topics.

Year 10 Achievement Standard

By the end of Year 10, students recognise the connection between simple and compound interest. They solve problems involving linear equations and inequalities. They make the connections between algebraic and graphical representations of relations. Students solve surface area and volume problems relating to composite solids. They recognise the relationships between parallel and perpendicular lines. Students apply deductive reasoning to proofs and numerical exercises involving plane shapes. They compare data sets by referring to the shapes of the various data displays. They describe bivariate data where the independent variable is time. Students describe statistical relationships between two continuous variables. They evaluate statistical reports.

Students expand binomial expressions and factorise monic quadratic expressions. They find unknown values after substitution into formulas. They perform the four operations with simple algebraic fractions. Students solve simple quadratic equations and pairs of simultaneous equations. They use triangle and angle properties to prove congruence and similarity. Students use trigonometry to calculate unknown angles in right-angled triangles. Students list outcomes for multi-step chance experiments and assign probabilities for these experiments. They calculate quartiles and inter-quartile ranges.

Assessment

TASK	DUE DATE
Factors and Products test	Week 5 (Term 1)
Measurement test	Week 10 (Term 1)
Indices and Financial Maths assignment	Week 13 (Term 2)
Linear relationships test	Week 18 (Term 2)
Class Participation and Homework	Ongoing

Assessment criteria and reporting of student achievement
The following assessment criteria are a focus for assessment and reporting in this unit. Criteria are the essential qualities that teachers look for in student work. These criteria must be used by teachers to assess student's performance, however not all of them need to be used on each task. Assessment criteria are to be used holistically on a given task and in determining the unit grade. Students will be assessed on the degree to which they demonstrate:

- **Knowledge** of mathematical facts, techniques and formulas presented in the unit;
- Appropriate selection and **application** of mathematical skills in mathematical modelling and problem solving;
- **Communication,** interpretation and presentation of mathematical ideas;
- The development of logical **arguments** to support solutions; and
- Appropriate use of **technology**.

Unit grades for Mathematics
The following A-E descriptors will appear on the report:
A demonstrating excellent achievement of what is expected
B demonstrating a high achievement of what is expected
C demonstrating satisfactory achievement of what is expected
D demonstrating partial achievement of what is expected
E demonstrating limited achievement of what is expected

Attendance and participation
Students are expected to submit all assessment items and attend all classes, participate in a positive manner and seek support whenever it is required. It is your responsibility to catch up on missed work when absent from class.

Late submission of work
Students are encouraged to submit work on time, as it is a valuable organisational skill. Students are encouraged to complete work even if it is late, as there are educational benefits in doing so. If you do not submit your work to your class teacher, make sure that it is signed and dated by either another member of staff in the faculty staffroom, or a member of the front office staff.

No work will be accepted after marked work has been returned, or accepted after the unit has completed. Computer and/or printer failure will not be accepted as a valid reason for late work. Make sure you backup, keep hard copies and rough notes.

Cheating and dishonest practice
The integrity of the College's assessment system relies upon all involved acting in accordance with the highest standards of honesty and fairness. Any departure from such standards will be viewed very seriously. Accordingly:
- Plagiarism - claiming authorship of someone else's work (intentionally or otherwise) - is a serious misdemeanour, and attracts severe penalties.
- Students are required to acknowledge the source of all material that is incorporated into their own work.
- Students may not submit the same item for assessment in more than one unit, unless specific agreement has been reached with the class teacher.

RIGHT TO APPEAL
You can appeal against your assessment if you feel that the result you obtained is not fair. You should first talk to your class teacher, and if you are not satisfied with the explanation you must discuss the situation with the Executive Teacher of the faculty concerned. If you still do not feel that your result is fair you should talk to the Deputy Principal Programs for further advice on the 'appeal process'.

Executive Teacher: Ruth Edge **Class Teacher:** Tracey Marris
Date: **5th February 2019**