2026 Semester 2 - Year 8 Unit Outline

Mathematics

Teacher(s): *Eva Bugledich, Jennifer Comans, Nath Ravineel, Ping Zhang*

Faculty: *Mathematics* **Unit Duration:** Semester 2, 2026

The **Australian Curriculum Achievement Standards in** Mathematics focus on developing students' understanding, fluency, reasoning and problem-solving within the six content strands of number, algebra, measurement, space, statistics, and probability. The Achievement Standard describes a broad sequence of expected learning that students will undertake across the whole year.

Australian Curriculum Achievement Standard: By the end of Year 8, students recognise irrational numbers and terminating or recurring decimals. They apply the exponent laws to calculations with numbers involving positive integer exponents. Students solve problems involving the 4 operations with integers and positive rational numbers. They use mathematical modelling to solve practical problems involving ratios, percentages and rates in measurement and financial contexts. Students apply algebraic properties to rearrange, expand and factorise linear expressions. They graph linear relations and solve linear equations with rational solutions and one-variable inequalities, graphically and algebraically. Students use mathematical modelling to solve problems using linear relations, interpreting and reviewing the model in context. They make and test conjectures involving linear relations using digital tools. Students use appropriate metric units when solving measurement problems involving the perimeter and area of composite shapes, and volume of right prisms. They use Pythagoras' theorem to solve measurement problems involving unknown lengths of right-angle triangles. Students use formulas to solve problems involving the area and circumference of circles. They solve problems of duration involving 12- and 24-hour cycles across multiple time zones. Students use 3 dimensions to locate and describe position. They identify conditions for congruency and similarity in shapes and create and test algorithms designed to test for congruency and similarity. Students apply the properties of quadrilaterals to solve problems. They conduct statistical investigations and explain the implications of obtaining data through sampling. Students analyse and describe the distribution of data. They compare the variation in distributions of random samples of the same and different size from a given population with respect to shape, measures of central tendency and range. Students represent the possible combinations of 2 events with tables and diagrams, and determine related probabilities to solve practical problems. They conduct experiments and simulations using digital tools to determine related probabilities of compound events.

Unit Description: Learning in Mathematics builds on each student's prior learning and experiences. Students engage in a range of approaches to learning and doing mathematics that develop their understanding of and fluency with concepts, procedures and processes by making connections, reasoning, problem-solving and practice. Proficiency in mathematics enables students to respond to familiar and unfamiliar situations by employing mathematical strategies to make informed decisions and solve problems efficiently. These skills are developed through the study of number, algebra, measurement, space, statistics, and probability.

Essential Learning Outcomes developed from the Achievement Standards of the Australian Curriculum:

1. **V9.M.8.06** - *Graphs linear relations and solves linear equations with rational solutions and one-variable inequalities, graphically and algebraically*
2. **V9.M.8.07** - *Uses mathematical modelling to solve problems using linear relations, interpreting and reviewing the model in context*
3. **V9.M.8.08** - *Makes and tests conjectures involving linear relations using digital tools*
4. **V9.M.8.09** - *Uses appropriate metric units when solving measurement problems involving the perimeter and area of composite shapes, and volume of right prisms*
5. **V9.M.8.10** - *Uses Pythagoras' theorem to solve measurement problems involving unknown lengths of right-angle triangles*
6. **V9.M.8.11** - *Uses formulas to solve problems involving the area and circumference of circles*
7. **V9.M.8.12** - *Solves problems of duration involving 12- and 24-hour cycles across multiple time zones*
8. **V9.M.8.13** - Uses 3 dimensions to locate and describe position
9. **V9.M.8.14** - *Identifies conditions for congruency and similarity in shapes and creates and tests algorithms designed to test for congruency and similarity*
10. **V9.M.8.15** - *Applies the properties of quadrilaterals to solve problems*
11. **V9.M.8.16** - *Conducts statistical investigations and explains the implications of obtaining data through sampling*
12. **V9.M.8.17** - *Analyses and describes the distribution of data*
13. **V9.M.8.18** - *Compares the variation in distributions of random samples of the same and different size from a given population with respect to shape, measures of central tendency and range*

Materials and Equipment Required: Students are expected to arrive at every class with a class book/folder to write notes for that subject, a writing instrument and a Chromebook or similar, appropriate electronic device. Students may also be required to provide the following additional materials and equipment: *Scientific Calculator*

Absences from Class: Students who miss classes due to absence or excursions must negotiate with the class teacher to catch up missed work.

Use of IT in Class: A Google Classroom has been set up for this class. Students will be required to log into this Google Classroom regularly to access course material. Students must bring a personal device (not a smartphone) to all lessons, however, the use of these devices in class will be at the discretion of the teacher.

Homework: All students will be given multiple opportunities to demonstrate a proficiency level of 3 or above across all Essential Learnings during class time. Students may use time at home to complete additional enrichment and extension activities that demonstrate a proficiency above level 3, or to catch up on missed or unfinished classwork.

Late Work: Extensions may be negotiated with individual teachers before the due date.

Plagiarism: Plagiarism is copying or using another's work and claiming it as your own. This includes copying, cutting, and pasting text or using ideas directly from a text, the internet, or some other source without appropriate referencing. The use of Generative AI to produce your work or edit it so that it no longer reflects your work, is a form of plagiarism. If this happens, work may not be graded, and students will be asked to discuss the assessment with the classroom teacher and Executive Teacher for that subject. If a teacher suspects a student may have plagiarised their work they may choose to assess the student in an alternative way, such as verbally or under test conditions. Parents may be contacted as part of this process.

Assessment Portfolio: This contains evidence of work from the opportunities the students have been provided to demonstrate elements of the achievement standard.

Portfolio Assessment Tasks for this subject will include:	**Week / Date Due**	**Essential Learning**
1. Linear Equations and Graphs	**Week 4**	**1,3**
2. Measurement	**Week 7**	**4,5,6**
3. Congruent Triangles	**Week 10**	**9,10**
4. Data	**Week 13**	**11,12,13**
5. Solving Equations	**Week 16**	**2**
6. Time	**Week 19**	**7**

A-E Reporting Grade Descriptors These are the grades and grade descriptors for reporting at the end of each Semester.

A	Demonstrating **excellent** achievement of what is expected (Consistently achieving a proficiency level of 4 or above in each of the Essential Learnings)
B	Demonstrating a **high** achievement of what is expected (Consistently achieving a proficiency level of between 3 and 4 in each of the Essential Learnings)
C	Demonstrating **satisfactory** achievement of what is expected (Achieving a proficiency level of 3 across the Essential Learnings)
D	Demonstrating **partial** achievement of what is expected (Achieving a proficiency of between 1 and 3 across the Essential Learnings)
E	Demonstrating **limited** achievement of what is expected (Achieving a proficiency of 1 or less in each of the Essential Learnings)
S	**Status** is awarded where unavoidable circumstances have prevented assessment. Must be negotiated with the Principal.

Grade Descriptors and the "C" grade

In ACT public schools the Australian Curriculum Achievement Standard is aligned with a 'C' grade. The 'C' grade indicates that your child has demonstrated a satisfactory level of knowledge, understanding and skill in relation to the Achievement Standard.

Appeals

A student must initiate an appeal for any grade with their subject teacher. If a student is dissatisfied with that initial process, they must pursue further appeal through the Faculty Executive Teacher for that subject.

Executive Teacher

Colin Montgomery 30/06/2026

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