

## Year 8 Mathematics

### UNIT GOALS

The specific goals of this unit are for students to:

- Carry out the four operations with rational numbers and integers, using efficient mental and written strategies and appropriate digital technologies
- Define congruence of plane shapes using transformations
- Develop the conditions for congruence of triangles
- Establish properties of quadrilaterals using congruent triangles and angle properties, and solve related numerical problems using reasoning
- Investigate terminating and recurring decimals
- Solve problems involving the use of percentages, including percentage increases and decreases, with and without digital technologies
- Solve problems involving profit and loss, with and without digital technologies
- Investigate the concept of irrational numbers, including  $\pi$
- Choose appropriate units of measurement for area and volume and convert from one unit to another
- Find perimeters and areas of parallelograms, trapeziums, rhombuses and kites
- Investigate the relationship between features of circles such as circumference, area, radius and diameter. Use formulas to solve problems involving circumference and area
- Develop the formulas for volumes of rectangular and triangular prisms and prisms in general. Use formulas to solve problems involving volume
- Solve problems involving duration, including using 12- and 24-hour time within a single time zone
- Use index notation with numbers to establish the index laws with positive integral indices and the zero index
- Extend and apply the distributive law to the expansion of algebraic expressions
- Factorise algebraic expressions by identifying numerical factors
- Simplify algebraic expressions involving the four operations

### UNIT OVERVIEW

#### Topic 1: Integers

- Number and Algebra: Number and place value

#### Topic 2: Lines, shapes and solids

- Measurement and Geometry: Geometric reasoning

#### Topic 3: Fractions, decimals and percentages

- Number and Algebra: Real numbers
- Number and Algebra: Money and financial mathematics

#### Topic 4: Measurement and introduction to Pythagoras' theorem

- Number and Algebra: Real numbers
- Measurement and Geometry: Using units of measurement

#### Topic 5: Algebra

- Number and Algebra: Number and place value
- Number and Algebra: Patterns and algebra

### ASSESSMENT DETAILS

	Assessment Task	Week Due
<b>Term 1</b>		
AT1	Test	4
AT2	Test	7
AT3	Assignment	10
<b>Term 2</b>		
AT4	Test	14
AT5	Test	18

