Year 6 Mathematics

Achievement

By the end of Year 6, students recognise the properties of prime, composite, square and triangular numbers. They describe the use of integers in everyday contexts. They solve problems involving all four operations with whole numbers. Students connect fractions, decimals and percentages as different representations of the same number. They solve problems involving the addition and subtraction of related fractions. Students make connections between the powers of 10 and the multiplication and division of decimals. They describe rules used in sequences involving whole numbers, fractions and decimals. Students connect decimal representations to the metric system and choose appropriate units of measurement to perform a calculation. They make connections between capacity and volume. They solve problems involving length and area. They interpret timetables. Students describe combinations of transformations. They solve problems using the properties of angles. Students compare observed and expected frequencies. They interpret and compare a variety of data displays including those displays for two categorical variables. They evaluate secondary data displayed in the media.

Students locate fractions and integers on a number line. They calculate a simple fraction of a quantity. They add, subtract and multiply decimals and divide decimals where the result is rational. Students calculate common percentage discounts on sale items. They write correct number sentences using brackets and order of operations. Students locate an ordered pair in any one of the four quadrants on the Cartesian plane. They construct simple prisms and pyramids. Students list and communicate probabilities using simple fractions, decimals and percentages.

Assessable Elements

An overall level of achievement in this subject is determined by the teacher's on-balance judgment of the evidence presented in students' summative assessment across the following strands:

- **Number and Algebra**
  Number and place value; Fractions and decimals; Money and financial mathematics; Patterns and algebra.

- **Measurement and Geography**
  Using units of measurement; Shape; Geometric reasoning; Location and   transformation.

- **Statistics and probability**
  Chance; Data representation and interpretation

Delivery (mode, time requirements, lessons)

Students have access to scheduled lessons each week. Lessons are delivered via our learning management system. Students are also expected to undertake independent study to complete tasks and assessments in accordance with the Work Rate Calendar.

Student Requirements

Computer, internet access, email, printer, scanner, headset with microphone, stationery, resource list and SRS list.

Year 6 Mathematics (Semester 1)

		Units and Learning Experiences, Summative Assessment, Criteria Assessed, Approximate timing/due date of Summative Assessment
Semester 1	**Term 1**	**Unit 1** **Number and place value** Identify and describe properties of prime and composite numbers, select and apply mental and written strategies to problems involving whole numbers. **Fractions and decimals** Order and compare fractions with related denominators, add and subtract fractions with related denominators, calculate the fraction of a given quantity and solve problems involving the addition and subtraction of fractions. **Data** Revise different types of data displays, interpret data displays, investigate the similarities and differences between different data displays and identify the purpose and use of different displays and identify the difference between categorical and numerical data. **Chance** Represent the probability of outcomes as a fraction or decimal and conduct chance experiments.
		Unit 2 **Using units of measurement** Solve problems involving the comparison of lengths and areas, and interpret and use timetables. **Number and place value** Apply efficient mental and written strategies to solve problems involving all four operations. **Fractions and decimals** Solve problems involving addition and subtraction of fractions with the same or related denominators, find a simple fraction of a quantity, and make connections between equivalent fractions, decimals and percentages. **Money and financial mathematics** Investigate and calculate percentage discounts of 10%, 25% and 5 0% on sale items.
		Summative Assessment, due date: • Written Assessment Task: Data decoder (Week 5) • Written Assessment Task: Rodeo round-up (Week 8)
	Term 2	**Unit 3** **Fractions and decimals** Apply mental and written strategies to add & subtract of decimals, solve problems involving decimals, make generalisations about multiplying whole numbers & decimals by 10, 100 & 1 000, apply mental and written strategies to multiply decimals by 1-digit whole numbers. **Shape** Problem solve & reason to create nets & construct models of simple prisms and pyramids Using units of measurement; make connections between volume & capacity. **Number and place value** Identify, & continue square & triangular number patterns, make generalisations about the relationship between square & triangular numbers, explore numbers below zero & position integers on a number line.
		Unit 4 **Patterns and algebra** Continue and create sequences involving whole numbers and decimals, describe the rule used to create these sequences and explore the use of order of operations to perform calculations. **Number and place value** Select and apply mental and written strategies and digital technologies to solve problems involving multiplication and division with whole numbers. **Fractions and decimals** Locate, order and compare fractions with related denominators and locate them on a number line **Geometric reasoning** — make generalisations about angles on a straight line, angles at a point and vertically opposite angles, and use these generalisations to find unknown angles.
		Summative Assessment, due date: • Written Assessment Task: Order of operations (Week 8)

Year 6 Mathematics (Semester 2)

		Units and Learning Experiences, Summative Assessment, Criteria Assessed, Approximate timing/due date of Summative Assessment
Semester 2	**Term 3**	**Unit 5** **Money and financial mathematics** Connect fractions & percentage, calculate percentages, calculate discounts of 10%, 25% & 50% on sale items. **Number and place value** Identify & describe properties of prime, composite, square & triangular numbers, multiply & divide using written methods including a written algorithm, solve problems involving all four operations; Identify the four quadrants on a Cartesian plane, plot & read points in all four quadrants, revise symmetry, reflection, rotation & translation, describe the effect of combinations of translations, reflections & rotations.
		Unit 6 **(**with whole numbers, compare & order positive & negative integers) **Location and transformation** **Fractions and decimals** Add & subtract fractions with related denominators, calculate a fraction of a quantity, multiply & divide decimals by powers of ten, add & subtract decimals, multiply decimals by whole numbers, divide numbers that result in decimal remainders, make connections between fractions, decimals & percentages, solve problems involving fractions & decimals. **Using units of measurement** Connect decimals to the metric system, convert between units of measure, solve problems involving length & area & connect volume & capacity. **Patterns and algebra** Continue & create sequences involving whole numbers, fractions & decimals, describe the rule used to create the sequence & apply the order of operations to aid calculations.
		Summative assessment, due date: • Written Assessment Task: Patterns, computation and number properties (Week 3) • Written Assessment Task: Measurement problems (Week 9)
	Term 4	**Unit 7** **Chance** Conduct chance experiments, record data in a frequency table, calculate relative frequency, write probability as a fraction, decimal or percent, explore the effect of large trials on results, compare observed and expected frequencies. **Data representation and interpretation** Compare primary and secondary data, source secondary data, explore data displays in the media, identify how displays can be misleading, problem solve and reason by manipulating secondary data. **Patterns and algebra & Number and place value** Represent number patterns in a table and graphically, write a rule to describe a pattern, apply the rule to find the value of unknown terms, solve integer problems, plot coordinates in all four quadrants, solve problems using the order of operations, solve multiplication and division problems using a written algorithm.
		Unit 8 (Optional) **Data representation and interpretation** Interpret and compare data displays, interpret secondary data, solve problems involving data, conversion of units of measure and computation. **Fractions and decimals** Add, subtract and multiply decimals, divide decimals by whole numbers, calculate a fraction of a quantity and percentage discount, compare and evaluate shopping options. **Geometric reasoning** Measure angles, apply generalisations about angles on a straight line, angles at a point and vertically opposite angles and apply in real-life contexts. **Location and transformation** Apply translations, reflections and rotations to create symmetrical shapes.
		Summative assessment, due date: • Written Assessment Task: Is the game "Dice difference" fair? (Week 2) • Written Assessment Task: Data and measurement mathematical guide inquiries (Optional, TBA)

Disclaimer All of the above information is accurate at the time of development.