

Year 7 Mathematics

Achievement

By the end of Year 7, students solve problems involving the comparison, addition and subtraction of integers. They make the connections between whole numbers and index notation and the relationship between perfect squares and square roots. They solve problems involving percentages and all four operations with fractions and decimals. They compare the cost of items to make financial decisions. Students represent numbers using variables. They connect the laws and properties for numbers to algebra. They interpret simple linear representations and model authentic information. Students describe different views of three-dimensional objects. They represent transformations in the Cartesian plane. They solve simple numerical problems involving angles formed by a transversal crossing two parallel lines. Students identify issues involving the collection of continuous data. They describe the relationship between the median and mean in data displays.

Students use fractions, decimals and percentages, and their equivalences. They express one quantity as a fraction or percentage of another. Students solve simple linear equations and evaluate algebraic expressions after numerical substitution. They assign ordered pairs to given points on the Cartesian plane. Students use formulas for the area and perimeter of rectangles and calculate volumes of rectangular prisms. Students classify triangles and quadrilaterals. They name the types of angles formed by a transversal crossing parallel line. Students determine the sample space for simple experiments with equally likely outcomes and assign probabilities to those outcomes. They calculate mean, mode, median and range for data sets. They construct stem-and-leaf plots and dot-plots.

Assessment Criteria

Using the marking guide provided, an overall level of achievement in this subject is determined by the teacher's judgment of the evidence presented in students' summative assessment. All assessment unless noted on task sheet completed by Math's students assess the following criteria:

- Understanding and fluency
- Problem-solving and reasoning

Delivery (mode, time requirements, lessons)

Students have access to two 45 minute 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, access to internet, email, printer, scanner, telephone or headset with microphone, audio visual software/devices, scientific calculator, exercise book, stationery.

Year 7 Mathematics (Semester 1)

Units and Learning Experiences, Summative Assessment, Criteria Assessed, Approximate timing/due date of summative assessment	
Semester 1	Term 1
	<p>Unit 1 Number and place value Investigate the relationship between index notation, square roots and square numbers, apply the associative, commutative and distributive laws to aid computation, revise prime factors, express numbers as a product of its primes using index notation.</p> <p>Real numbers Compare fractions using equivalence, locate and represent fractions on a number line, solve problems involving addition and subtraction of fractions, express one quantity as a fraction of another.</p>
	<p>Unit 2 Geometric reasoning Revise triangles, quadrilaterals and types of angles, classify triangles and quadrilaterals by comparing sides and angles, make generalisations about the sum of angles in triangles and in quadrilaterals.</p> <p>Shape Construct 3D objects, draw 3D objects from different viewpoints.</p> <p>Using units of measurement Develop a formula to find the area of a rectangle, calculate the area of rectangles, investigate the relationship between volume, the area of the base and the number of layers, calculate volume, solve problems involving area and volume.</p>
	<p>Summative Assessment, due date:</p> <ul style="list-style-type: none"> • Open book Test: Index Notation, Fractions & Integers (Week 5) • Test Understanding (Week 10)
	<p>Unit 3 Patterns and algebra Use variables to represent numbers, create algebraic expressions, evaluate algebraic expressions by substitution</p> <p>Linear and non-linear relationships Plot points on a Cartesian plane, find coordinates for points on a Cartesian plane, solve simple linear equations and create and analyse graphs from authentic data.</p>
Term 2	
<p>Unit 4 Real numbers Revise place value and rounding whole numbers and make connections to rounding decimals and multiply fractions</p> <p>Chance Construct sample spaces, assign probabilities to events and determine probabilities of events.</p>	
<p>Summative Assessment, due date:</p> <ul style="list-style-type: none"> • Assessment Task: Algebra (Week 5) • Assessment Task: Chance (Week 10) 	

Year 7 Mathematics (Semester 2)

Units and Learning Experiences, Summative Assessment, Criteria Assessed, Approximate timing/due date of summative assessment	
Semester 2	Term 3
	<p>Unit 5 Money and financial mathematics Calculate and compare unit prices, investigate and calculate best buys with and without digital technology.</p> <p>Real numbers Round, multiply and divide decimals in a money context, multiply and divide fractions, adding and subtract mixed numbers with unrelated denominators, solve problems involving decimals, fractions and the four operations and solve problems involving ratios.</p>
	<p>Unit 6 Number and Place value Compare, order, add and subtract integers using written strategies, solve problems involving addition and subtraction of integers, review index notation and standard notation, explore the powers of ten and convert numbers to expanded notation.</p> <p>Real numbers Multiply decimals using written strategies, convert between fractions, decimals and percentage and express one quantity as a fraction or percentage of another.</p> <p>Patterns and algebra Create and evaluate formulas to model relationships between two variables.</p>
	<p>Summative Assessment, due date:</p> <ul style="list-style-type: none"> • Task: Plan the catering for a class BBQ (Week 3) • Exam: Integers & Real Numbers (Week 10)
	<p>Unit 7 Data representation and interpretation Construct stem-and-leaf plots and dot-plots, calculate mean, median, mode and range, compare a range of data displays, describe and interpret data displays using mean, median and range, identify and investigate issues involving numerical data collected from primary and secondary sources.</p>
	Term 4
<p>Unit 8 Geometric reasoning Develop geometry conventions and angle relationships, explore transversals and angles associated with parallel lines and find unknown angles using angle relationships.</p> <p>Location and transformation Describe and create translations, reflections and rotations on the Cartesian plane, use appropriate conventions for naming transformed shapes, identifying a combination of transformations on the Cartesian plane, and identify line and rotational symmetry.</p>	
<p>Summative Assessment, due date:</p> <ul style="list-style-type: none"> • Exam (Week 5) 	

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