

# Stage 3 Mathematics



## STAGE STATEMENT

### **Mathematics Stage 3**

By the end of Stage 3, students ask questions and undertake investigations, selecting appropriate technological applications and problem-solving strategies to demonstrate fluency in mathematical techniques. They use mathematical terminology and some conventions, and they give valid reasons when comparing and selecting from possible solutions, making connections with existing knowledge and understanding.

Students select and apply appropriate mental, written or calculator strategies for the four operations and check the reasonableness of answers using estimation. They solve word problems and apply the order of operations to number sentences where required. Students identify factors and multiples and recognise the properties of prime, composite, square and triangular numbers. They connect fractions, decimals and percentages as different representations of the same value. Students compare, order and perform calculations with simple fractions, decimals and percentages and apply the four operations to money in real-life situations. Students record, describe and continue geometric and number patterns, and they find missing numbers in number sentences. They locate an ordered pair in any one of the four quadrants on the Cartesian plane.

Students select and use the appropriate unit to estimate, measure and calculate length, area, volume, capacity and mass. They make connections between capacity and volume, and solve problems involving length and area. Students use 24-hour time in real-life situations, construct and interpret timelines and use timetables. They convert between units of length, units of capacity and units of mass. They construct and classify three-dimensional objects and two-dimensional shapes, and compare and describe their features, including line and rotational symmetries. Students measure and construct angles, and find unknown angles in diagrams using known angle results. They use a grid-reference system to locate landmarks and describe routes using landmarks and directional language.

Students use appropriate data collection methods to interpret and analyse sets of data and construct a range of data displays. They assign probabilities as fractions, decimals or percentages in simple chance experiments.

## OUTCOMES

Mathematics Outcomes	Stage 3
<p><b>Mathematics K-10</b></p> <p>MA3-4NA orders, reads and represents integers of any size and describes properties of whole numbers</p> <p>MA3-5NA selects and applies appropriate strategies for addition and subtraction with counting numbers of any size</p> <p>MA3-6NA selects and applies appropriate strategies for multiplication and division, and applies the order of operations to calculations involving more than one operation</p> <p>MA3-7NA compares, orders and calculates with fractions, decimals and percentages</p> <p>MA3-8NA analyses and creates geometric and number patterns, constructs and completes number sentences, and locates points on the Cartesian plane</p> <p>MA3-9MG selects and uses the appropriate unit and device to measure lengths and distances, calculates perimeters, and converts between units of length</p> <p>MA3-10MG selects and uses the appropriate unit to calculate areas, including areas of squares, rectangles and triangles</p> <p>MA3-11MG selects and uses the appropriate unit to estimate, measure and calculate volumes and capacities, and converts between units of capacity</p> <p>MA3-12MG selects and uses the appropriate unit and device to measure the masses of objects, and converts between units of mass</p> <p>MA3-13MG uses 24-hour time and am and pm notation in real-life situations, and constructs timelines</p> <p>MA3-14MG identifies three-dimensional objects, including prisms and pyramids, on the basis of their properties, and visualises, sketches and constructs them given drawings of different views</p> <p>MA3-15MG manipulates, classifies and draws two-dimensional shapes, including equilateral, isosceles and scalene triangles, and describes their properties</p> <p>MA3-16MG measures and constructs angles, and applies angle relationships to find unknown angles</p> <p>MA3-17MG locates and describes position on maps using a grid-reference system</p> <p>MA3-18SP uses appropriate methods to collect data and constructs, interprets and evaluates data displays, including dot plots, line graphs and two-way tables</p> <p>MA3-19SP conducts chance experiments and assigns probabilities as values between 0 and 1 to describe their outcomes</p>	