

Scope and sequence identifies what should be taught and what is important for students to have opportunities to learn. It describes the *knowledge* that students need for ongoing learning in Mathematics. This knowledge is presented as *Concepts and facts* and *Procedures*.

The scope and sequence:

- is provided for each year of schooling
- should be used together with the *Essential Learnings*
- provides additional detail in each Organiser
- informs the focus of Mathematics in assessment
- is a key document for school curriculum planning.

Prep	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
<p>Concepts and facts</p> <ul style="list-style-type: none"> Attributes of objects for measuring Familiar daily routines, activity and alternative sequences Familiar points in time Times of day 	<p>Concepts and facts</p> <ul style="list-style-type: none"> Non-standard units: <ul style="list-style-type: none"> personal referents Ways to measure: <ul style="list-style-type: none"> length area volume, mass time Standards units: <ul style="list-style-type: none"> days and weeks o'clock times on 12-hour displays that link to familiar points in time of the day Points in time: start and finish time Duration of time Seasons 	<p>Concepts and facts</p> <ul style="list-style-type: none"> Non-standard units Ways to measure with no gaps, overlaps or spillage when measuring Ways to measure: <ul style="list-style-type: none"> mass: hefting, measuring instruments Standard units: <ul style="list-style-type: none"> centimetre (cm) metre (m) kilogram (kg) litre (L) hour, half-hour on analogue clocks hour (h) minute (min) months of the year seasons of the year Sequence of events Duration of time in minutes 	<p>Concepts and facts</p> <ul style="list-style-type: none"> Non-standard units <ul style="list-style-type: none"> square unit grids Standard units: <ul style="list-style-type: none"> year (yr) half and quarter of: <ul style="list-style-type: none"> metre (m), kilogram (kg), litres (L), hour on analogue clocks Ways to measure: <ul style="list-style-type: none"> area: rows volume: layers Duration of events 	<p>Concepts and facts</p> <ul style="list-style-type: none"> Non-standard units: <ul style="list-style-type: none"> grids floor tiles paces hand spans Standard units: <ul style="list-style-type: none"> degree (°) metre (m) centimetre (cm) kilogram (kg), gram (g) litres (L), millilitre (mL) minute (min) century, decade Time conventions: <ul style="list-style-type: none"> ante meridiem (am) post meridiem (pm) Duration of time in minutes and seconds Timelines 	<p>Concepts and facts</p> <ul style="list-style-type: none"> Non-standard units Standard units: <ul style="list-style-type: none"> degree (°) square metre (m²), square centimetre (cm²) metre (m), centimetre (cm) kilogram (kg), gram (g) litres (L), millilitre (mL) minute (min) century, decade Time conventions: <ul style="list-style-type: none"> ante meridiem (am) post meridiem (pm) Duration of time in minutes and seconds Timelines 	<p>Concepts and facts</p> <ul style="list-style-type: none"> Standard units: <ul style="list-style-type: none"> millimetre (mm), kilometre (km) square metre (m²), square centimetre (cm²) cubic metre (m³), cubic centimetre (cm³) tonne (t), kilogram (kg) 12-hour, 24-hour time Rules for calculations of area, e.g. counting squares and part squares Duration of events: timetables 	<p>Concepts and facts</p> <ul style="list-style-type: none"> Standard units: <ul style="list-style-type: none"> International System (SI) has seven base units Rules for perimeter, area and volume based on relationships between attributes of regular 2D (regular polygons, triangles, circles) and 3D objects (rectangular prism) Scale and gradations Error in measurements Australian time zones Australian daylight savings times Duration of time in fractions of a minute, or a second. 	<p>Concepts and facts</p> <ul style="list-style-type: none"> Standard units: <ul style="list-style-type: none"> square kilometre (km²) hectare (ha) Formula for area, volume and perimeter for regular shapes Rate: familiar units in context, e.g. bananas \$3 per kilogram Time zones and longitude Duration of events and time 	<p>Concepts and facts</p> <ul style="list-style-type: none"> Standard units Formulas for volume of prism and area of parallelogram Accumulation of measurement errors Lengths and angles using: <ul style="list-style-type: none"> scale similarity trigonometry Pythagoras' Theorem Rate: familiar context, e.g. water usage mL/hr, speed km/hr Duration of events and time
<p>Procedures</p> <ul style="list-style-type: none"> Match Direct comparison of measurements Order and sequence 	<p>Procedures</p> <ul style="list-style-type: none"> Direct comparison Order and sequence Estimation Connection between: <ul style="list-style-type: none"> attribute and ways to measure it days and week sequence of daily events and o'clock 	<p>Procedures</p> <ul style="list-style-type: none"> Direct comparison Indirect comparison, e.g. measuring the first length with a piece of string then using the measured string and comparing it to the second length Order and sequence Estimation Connection between: <ul style="list-style-type: none"> half hour as a fraction of the hour hour and minutes minutes and 5-minute intervals days and months months, seasons and year sequence of events and times of the day Relationship between the size of the non-standard unit and the number required 	<p>Procedures</p> <ul style="list-style-type: none"> Direct comparison Indirect comparison Comparison between: <ul style="list-style-type: none"> personal referent and standard units whole, half and quarter of standard unit Order and sequence Estimation Connection between: <ul style="list-style-type: none"> days, weeks and a month and year 	<p>Procedures</p> <ul style="list-style-type: none"> Comparison Order Estimation using personal referents for all measures including for angles Scheduled sequences of events Connection between: <ul style="list-style-type: none"> seconds and a minute Links between smaller and larger standard units in length, area, volume, mass and time Links between analogue and digital time, e.g. 1:50 is the same as ten minutes to two 	<p>Procedures</p> <ul style="list-style-type: none"> Comparison Order Estimation <ul style="list-style-type: none"> stepping out grids Equivalence of measures of smaller units as larger units and vice versa, e.g. 600 mL/0.6 L, 1.5kg/1500 g Relationships between dimensions, e.g. area: length and width: volume, length, width and height 	<p>Procedures</p> <ul style="list-style-type: none"> Comparison Order Estimation of different standard units as referents Equivalent measures, e.g. 6 mm = 0.6 cm = 0.006 m Relationship between: <ul style="list-style-type: none"> length of side and perimeter length, width and area of rectangle perimeter and area kilograms and tonnes the larger the unit the fewer required to measure and vice versa units of measure, e.g. 75 minutes = 1¼ hours 	<p>Procedures</p> <ul style="list-style-type: none"> Comparison Order Estimation of reasonable value using scale Relationships between: <ul style="list-style-type: none"> hectare, square kilometre and square metre centimetre and millimetre attributes of 2D and 3D shapes units of measure, e.g. 75 minutes = 1¼ hours Equivalence of measures of smaller units as larger units and vice versa, e.g. 2500 kg = 2.5 t 	<p>Procedures</p> <ul style="list-style-type: none"> Comparison Order Relationships between: <ul style="list-style-type: none"> hectare, square kilometre and square metre kilograms and tonnes perimeter and area of rectangle diameter and circumference of circle (pi) length, width and height, and volume of a prism length of side and perimeter of irregular or composite shapes Equivalent measures and conversions 	<p>Procedures</p> <ul style="list-style-type: none"> Comparison Order Estimation Relationships between: <ul style="list-style-type: none"> millilitres and cubic centimetres diameter, radius and area of a circle length and width (height), and areas of triangles and parallelograms areas of triangles and areas of rectangles areas of rectangles and areas of parallelograms (same length, same width or height) Equivalent measures and conversions, e.g. 4.5 hectares instead of 45 000 m²
<p>Concrete materials:</p> <ul style="list-style-type: none"> computers manipulative materials analogue and digital clocks <p>Verbal:</p> <ul style="list-style-type: none"> everyday language: long/er, short/er, heavy/ier, light/er empty, full, lunchtime, going home time <p>Visual:</p> <ul style="list-style-type: none"> drawings of sequences in routines photographs of everyday objects and seasons calendars 	<p>Concrete materials:</p> <ul style="list-style-type: none"> computers manipulative materials calendars analogue and digital clocks <p>Verbal:</p> <ul style="list-style-type: none"> everyday language: long, covered, heavy, empty, slow, longer/shorter, heavier/lighter, later, earlier <p>Written:</p> <ul style="list-style-type: none"> o'clock analogue time days of week electronic sequence of daily events <p>Visual:</p> <ul style="list-style-type: none"> drawings analogue clock personal referent for different measures 	<p>Concrete materials:</p> <ul style="list-style-type: none"> computers and other electronic devices manipulative materials appropriate measuring instruments, e.g. metre ruler, trundle wheel, tape measure, balance, kitchen and bathroom scales, area grids, litre jugs calendars analogue and digital clocks <p>Verbal:</p> <ul style="list-style-type: none"> appropriate measuring instruments, e.g. metre ruler, trundle wheel, tape measure, balance, kitchen and bathroom scales, area grids, litre jugs calendars analogue and digital clocks <p>Written:</p> <ul style="list-style-type: none"> months and dates abbreviations for days simple plans for events class calendars <p>Visual:</p> <ul style="list-style-type: none"> analogue and digital clocks personal referent for different measures 	<p>Concrete materials:</p> <ul style="list-style-type: none"> computers and other electronic devices manipulative materials appropriate measuring instruments, e.g. stopwatch, 360° protractor calendars diaries analogue and digital clocks <p>Verbal:</p> <ul style="list-style-type: none"> strategies for estimation and calculations mathematical language: metric prefixes (milli-, centi-, kilo-) <p>Written:</p> <ul style="list-style-type: none"> days and dates abbreviations for months, e.g. Jan and J digital representation of analogue time time in words, e.g. nine-thirty calendars <p>Visual:</p> <ul style="list-style-type: none"> analogue and digital clocks personal referent for different measures 	<p>Concrete materials:</p> <ul style="list-style-type: none"> computers and other electronic devices manipulative materials appropriate measuring instruments, e.g. 360° protractor train or bus timetables diaries analogue and digital clocks <p>Verbal:</p> <ul style="list-style-type: none"> strategies for estimation and calculations to the nearest minute <p>Written:</p> <ul style="list-style-type: none"> decimal of measurements calculations of duration schedules timetables timelines <p>Visual:</p> <ul style="list-style-type: none"> analogue and digital clocks calendar personal referent for different measures 	<p>Concrete materials:</p> <ul style="list-style-type: none"> computers and other electronic devices (measuring instruments and technologies) manipulative materials appropriate measuring instruments for precision, e.g. 150 mL on a cup measure with 50 mL markings, 360° protractor <p>Verbal:</p> <ul style="list-style-type: none"> strategies for estimation and calculations <p>Written:</p> <ul style="list-style-type: none"> calculations of duration <p>Visual:</p> <ul style="list-style-type: none"> timetables personal referent for different measures 	<p>Concrete materials:</p> <ul style="list-style-type: none"> computers and other electronic devices (measuring instruments and technologies, e.g. speedometer) manipulative materials appropriate measuring instruments for precision <p>Verbal:</p> <ul style="list-style-type: none"> strategies for estimation and calculations mathematical language: diameter, circumference, base of triangles and prisms <p>Written:</p> <ul style="list-style-type: none"> diary entries timetables timelines calculations between and within 12-hour and 24-hour times <p>Visual:</p> <ul style="list-style-type: none"> timetables personal referent for different measures 	<p>Concrete materials:</p> <ul style="list-style-type: none"> computers and other electronic devices (measuring instruments and technologies) manipulative materials <p>Verbal:</p> <ul style="list-style-type: none"> strategies for estimation and calculations mathematical language: radius, pi <p>Written:</p> <ul style="list-style-type: none"> time calculations <p>Visual:</p> <ul style="list-style-type: none"> personal referent for different measures 	<p>Concrete materials:</p> <ul style="list-style-type: none"> computers and other electronic devices (measuring instruments and technologies) manipulative materials <p>Verbal:</p> <ul style="list-style-type: none"> strategies for estimation and calculations mathematical language: opposite, adjacent, hypotenuse, Pythagoras' Theorem, tangent, Eastern Standard Time (EST), Central Standard Time (CST), Western Standard Time (WST), daylight saving time <p>Written:</p> <ul style="list-style-type: none"> calculations of measurement calculations Australian time zone differences <p>Visual:</p> <ul style="list-style-type: none"> personal referent for different measures 	