SA Mathematics R -10 Curriculum Objectives Addressed Within Numbers Up! 2 Baggin' the Dragon

Age	Level	SA Level	Spatial Sense & Geometric Reasoning	Measurement
4-6	1-2	R-1	Recognises that different objects have the same shape. Sorts objects by shape. Uses simple descriptive language to describe shapes. Uses mathematical language to describe shapes. Identifies and names shapes within built structures. Explores arrangements of shapes related to turning, flipping and rearranging. Matches shapes one to one. Recognises linear and rotational symmetry. Uses everyday language to describe the movement of shapes. Uses everyday spatial terminology.	Uses everyday measurement language. Describes familiar events and routines/periods of time in everyday language. Estimates to select, match and order groups by single attributes. Uses trial and error to match and order.
6-7	2-3	1-2	Constructs models following a plan. Recognises and labels simple geometric figures. uses mathematical language to describe and label figures and objects. Identifies 3D objects in the environment. Describes arrangements of shapes as flipping, sliding and rotating. Understands 'left', 'right'.	Use direct comparison to match, sort and order attributes. orders according to length, angle, volume, capacity, time, area, mass. Identifies the need for a baseline. Responds to and uses everyday comparative and descriptive language of time. Sorts and orders events within a day, a week or

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			Explores pathways through mazes.	a month. Compares lengths of time. Investigates features of a variety of clocks. Estimates and uses units to match and measure.
7-8	3-4	2-3	Identifies and describes figures and objects according to their properties. Uses language to differentiate 2D and 3D shapes. Explores views of 3D shapes. Determines lines of symmetry in a design. Uses mathematical language to describe transformations. Finds paths between particular points. Interprets simple maps. Experiments with simple co-ordinates. Understands and uses spatial terminology.	Uses uniform units to measure attributes of figures and objects, such as area, length, mass, capacity and perimeter. Uses everyday language to compare distances. Constructs devices to message passing of time. Compares and orders standard measurements of time. Uses appropriate standard units to estimate and measure figures and objects. Understands and uses terms appropriately. Uses standard measures to estimate and compare. Relates measurements to base 10 number systems and number patterns.

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Age	Level	SA Level	Spatial Sense & Geometric Reasoning	Measurement
8	5	Year 3	Recognises right angles in everyday objects. Understands and uses terms *smaller than a right angle* and *larger than a right angle* Recognises parallel, horizontal, vertical, oblique, diagonal and intersecting lines. Identifies and names 2D regular shapes. Describes irregular polygons. Works with shapes to find the lines of symmetry. Recognises, sorts and names familiar 3D objects. Recognises nets for 3D objects. Uses and understands the terms flip, slide and rotate. Locates features when interpreting simple maps. Identifies view of a model (side and plan view). Marks given positions on a grid. Marks given co-ordinates on a grid.	Estimates and compares mass using kilograms and grams up to 2kg. Sorts, classifies, orders and describes objects by mass using grams and kilograms. Chooses most appropriate units to measure mass. Understands and recalls 1000g = 1kg Uses comparative language to describe mass. Uses 'to' and 'past' in time terminology. Reads and writes clock time on the hour, quarter hour, and 5 minute intervals in analogue and digital time. Converts digital time to 'to' and 'past' the hour. Records times as 'a.m.' or 'p.m.' Understands and applies time frames (minute, hour, day, week, year, leap year) Reads and interprets a year calendar. Estimates and compares volume and capacity using litres and mL. Knows that 1L = 1000mL Sorts and classifies objects by length using standard and non-

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Age	Level	SA Level	Spatial Sense & Geometric Reasoning	Measurement
				standard units. Chooses appropriate metric units for measuring. Understands and recalls length measurement. (mm, cm, m) Estimates area in cm^2. Calculates perimeters of regular and irregular shapes.
9	5	Year 4	Compares a variety of angles. Recognises angles in the environment. Uses a square to measure angles. Understands that angle is a measure of turn and can be measured in degrees. Describes and compares properties of polygons, prisms and pyramids and other 3D objects. Interprets, recognises and names 3D objects and shapes. Uses and understands the terms flip (as reflection), slide (as translation) and turn (as rotation). Identifies different views of a model. Follows directions to locate objects.	Sorts, classifies, orders and describes objects by mass using grams and kilograms. Converts between tonnes to kilograms and kilograms and grams. Uses common mass measurements in decimal form. Reads and writes clock time in 5 minute and 1 minute intervals. Converts analogue to digital time. Estimates and compares volume and capacity using litres and mL. Knows that 1L = 1000mL. Compares fractional amounts. Writes common volume measurements in decimal form. Recognises and uses standard metric units (mm, cm, m, km) Chooses appropriate

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				measurements. Estimates and compares the area of regular shapes in m^2 and cm^2 and their perimeters.
10	6	Year 5	Identifies and orders angles in everyday objects. Knows that a right angle is 90^0 and a straight angle is 180^0. Knows, uses and recognises obtuse, reflex, right and acute angles. Describes the properties of circles, regular polygons and solids. Recognises and names regular and irregular polygons and explains and compares their spatial features (faces, edges vertices). Draws symmetrical patterns. Recognises congruence of shapes. Understands the term transformation. Uses the terms reflect, translate and rotate to describe movement. Predicts the result of a combination of 2 or 3 reflections, translations or rotations. Follows directions to locate objects. Follows directions to locate objects on maps.	Reads calendars and timetables. Converts 24 hour clock time to analogue time. Calculates differences in time. Converts hours to minutes. Problem-solves using time. Estimates and compares volume and capacity using L and mL. Measures the volume of rectangular prisms using cm^3 blocks. Converts between mL and L. Constructs 3D objects using standard cubic units. Measures the volume of shapes by counting the number of centimetre cubes. Recognises the relationships between units of length and is able to write them in decimal form. Converts between measurements. Understands that the area of a square or rectangle can be found using the formula A = LxW

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			Interprets simple plans.	
11	7	Year 6	Identifies perpendicular lines. Uses formals names for prisms and pyramids. Identifies the properties of 3D shapes using terms such as base, edge, surface, vertex, face. Construct a model of a 3D shape from drawings of different views. Visualise solids from different views. Visualise nets of simple solids. Identifies and knows the side and angle properties of isosceles, equilateral and scalene triangles. Knows that the sum of the interior angles of a triangle is 180^0. Knows that the sum of the interior angles of a quadrilateral is 360^0. Identifies the centre, radius, diameter and circumference of a	Converts between units of length. Uses decimal notation to write lengths. Compares perimeters of different shapes. Describes the relationship between the length of the sides and the perimeter for squares, rectangles and triangles. Uses m2 and cm^2. Knows the formula for areas of squares and rectangles. Calculates the area of irregular shapes. Select and use appropriate units to measure capacity (mL, L, kL). Use the abbreviations for cubic centimetres and cubic metres. Find volumes of rectangular prisms. Uses appropriate units to measure mass. Converts between mg,

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			circle. Names shapes with rotational symmetry. Reads and interprets maps, plans, drawings and diagrams drawn to scale. Recognises and uses cardinal and intermediate compass points.	g, kg and tonnes. Converts from one time unit to another. Tells the time with and converts between analogue, 24-hour and digital time. Calculates the duration of events using start and finish times. Reads simple timetables. Classifies and identifies right, acute, obtuse, straight or reflex angles and a revolution.
12	8	Year 7	Labels angles using conventional terminology. Recognises common conventions to indicate right angles, parallel lines and equal angles. Identifies and names properties of polyhedra. Classify solids in terms of their geometric properties. Reflects a complex shape on a line. Translates shapes over a given distance. Uses a scale to calculate distances between points on a map. Uses a co-ordinate grid to make simple 2D shapes.	Converts between mm, cm, m and km. Calculates the perimeter of polygons using appropriate formulas. Uses formula to find area of triangles. Uses appropriate units of measurement (km^2, cm^2, mm^2, m^2, ha) Calculate the area of irregular shapes by separating them into simple parts. Converts between mL, L and kL. Demonstrates awareness that capacity is related to volume ($1cm^3 = 1mL$) Uses Speed=Distance/Time to answer problems. Makes comparisons between time zones in

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				Australia and calculates changes incorporating Daylight Saving. Uses a variety of timetables.
13-14	9+	Year 8	Determines angle properties relating to straight lines, intersecting lines, parallel lines and a transversal. Uses the angle properties of parallel lines to determine unknown angles. Calculates unknown interior and exterior angles of a triangle. Determine the sum of the angles of any polygon. Recognise the properties of quadrilaterals and determine unknown angles in the quadrilateral. Looks at relationships between faces, edges and vertices of polyhedra (Euler's Formula). Constructs a mirror image using a line of symmetry.	Establishes *pi* as the ratio of the circumference to the diameter. Calculate the perimeter of polygons and circles using the appropriate formulas. Converts between units of area. Calculates the areas of polygons using appropriate formulas (rectangles, triangles, parallelograms, trapezia). Calculates the surface area of simple 3D shapes. Uses timetables to calculate departure and arrival times. Use a standard time zone map to answer questions related to time differences. understand how time is measured in other cultures.

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			Uses symmetry to classify polygons and polyhedra. Describes the transformation that could have occurred when given the original object and the resultant image (eg moving furniture). Plots distance and direction of points using bearings.	