 **Maths Stepping Stones**

**Geometry**

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|   | **Geometry** |
| **GSS 1** | * Not part of the Groveside Curriculum
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| **GSS 2** | * I can describe movement, including whole, half, quarter and three-quarter turns.
* I can read mathematical statements involving addition (+), subtraction (–) and equals (=) signs
* I can describe direction
* I can write mathematical statements involving addition (+), subtraction (–) and equals (=) signs
* I can describe position
* I can interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
* I can recognise and name common 2-D shapes [for example, rectangles (including squares), circles and triangles]
* I can recognise a half as one of two equal parts of an object
* I can compare, describe and solve practical problems for lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]
* I can find and name a half as one of two equal parts of an object
* I can recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres].
* I can recognise a half as one of two equal parts of a shape
* I can compare, describe and solve practical problems for mass/weight [for example, heavy/light, heavier than, lighter than]
* I can recognise a half as one of two equal parts of a quantity
* I can compare, describe and solve practical problems for capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]
* I can find and name a half as one of two equal parts of a shape
* I can compare, describe and solve practical problems for time [for example, quicker, slower, earlier, later]
* I can find and name a half as one of two equal parts of a quantity
* I can measure and begin to record lengths
* I can measure and begin to record heights
* I can measure and begin to record mass/weight
* I can measure and begin to record capacity and volume
* I can measure and begin to record time (hours, minutes, seconds)
* I recognise and know the value of different denominations of coins and notes
* I can sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]
* I recognise and use language relating to dates, including days of the week, weeks, months and years
* I can tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.
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| **GSS3** | * I can order and arrange combinations of mathematical objects in patterns and sequences
* I can identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line
* I can choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels
* I use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)
* I can identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces
* I can compare and order lengths and record the results using >, < and =
* I can compare and order mass and record the results using >, < and =
* I can compare and order volume/capacity and record the results using >, < and =
* I can identify 2-D shapes on the surface of 3-D shapes [for example, a circle on a cylinder and a triangle on a pyramid]
* I recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value
* I can compare and sort common 2-D and 3-D shapes and everyday objects.
* I can find different combinations of coins that equal the same amounts of money
* I can solve simple problems in a practical context involving addition of money of the same unit, including giving change
* I can solve simple problems in a practical context involving subtraction of money of the same unit, including giving change
* I can compare and sequence intervals of time
* I can tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times
* I know the number of minutes in an hour and the number of hours in a day.
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| **GSS4** | * I can measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)
* I draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them
* I can recognise angles as a property of shape or a description of a turn
* I can measure the perimeter of simple 2-D shapes
* I can identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle
* I can add and subtract amounts of money to give change, using both £ and p in practical contexts
* I can identify horizontal and vertical lines and pairs of perpendicular and parallel lines.
* I can tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks
* I can estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o’clock, a.m./p.m., morning, afternoon, noon and midnight
* I know the number of seconds in a minute and the number of days in each month, year and leap year
* I can compare durations of events [for example to calculate the time taken by particular events or tasks].
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| **GSS5** | * I can compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes
* I can describe positions on a 2-D grid as coordinates in the first quadrant
* I can convert between different units of measure [for example, kilometre to metre; hour to minute]
* I can describe movements between positions as translations of a given unit to the left/right and up/down
* I can identify acute and obtuse angles and compare and order angles up to two right angles by size
* I can measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres
* I can plot specified points and draw sides to complete a given polygon.
* I can identify lines of symmetry in 2-D shapes presented in different orientations
* I can find the area of rectilinear shapes by counting squares
* I can complete a simple symmetric figure with respect to a specific line of symmetry.
* I can estimate, compare and calculate different measures, including money in pounds and pence
* I can read, write and convert time between analogue and digital 12- and 24-hour clocks
* I solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.
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| **GSS6** | * I can identify 3-D shapes, including cubes and other cuboids, from 2-D representations
* I can identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.
* I can convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)
* I know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
* I understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints
* I can draw given angles, and measure them in degrees (o)
* I can measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres
* "I can identify:
* • angles at a point and one whole turn (total 360o)
* • angles at a point on a straight line and a turn (total 180o)
* • other multiples of 90o"
* I can calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes
* I can use the properties of rectangles to deduce related facts and find missing lengths and angles
* I can estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]
* I can distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
* I can solve problems involving converting between units of time
* I use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.
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| **GSS7** | * I can draw 2-D shapes using given dimensions and angles
* I can describe positions on the full coordinate grid (all four quadrants)
* I can solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate
* I can draw and translate simple shapes on the coordinate plane, and reflect them in the axes.
* I can recognise, describe and build simple 3-D shapes, including making nets
* I can use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places
* I can compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
* I can convert between miles and kilometres
* I can illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
* I recognise that shapes with the same areas can have different perimeters and vice versa
* I recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.
* I recognise when it is possible to use formulae for area and volume of shapes
* I can calculate the area of parallelograms and triangles
* I can calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units [for example, mm3 and km3].
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