Progression in Mathematics at Banks Lane Junior School—Measurement, Geometry and Statistics

Year 3

Measurement

- I can compare durations of events, for example to calculate the time taken by particular events or tasks
- I can estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight
- I can measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)
- I can measure the perimeter of simple 2-D shapes
- I can add and subtract amounts of money to give change, using both £ and p in practical contexts
- 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 know the number of seconds in a minute and the number of days in each month, year and leap year

Geometry—Shape

- I can 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 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 identify horizontal and vertical lines and pairs of perpendicular and parallel line

Statistics

- I can interpret and present data using bar charts, pictograms and tables
- I can solve one-step and two-step questions [e.g. 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables.

Vocabulary: ninety, degrees, orientation, horizontal, vertical, perpendicular, parallel, leap year, roman numerals, chart, bar chart, frequency table, Carroll diagram, Venn diagram, axis,

Year 4

Measurement

- I can estimate, compare and calculate different measures, including money in pounds and pence (also included in Measuring)
- I can measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres
- I can find the area of rectilinear shapes by counting squares
- I can solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days (appears also in Converting)
- I can convert between different units of measure (e.g. kilometre to metre; hour to minute)
- I can read, write and convert time between analogue and digital 12 and 24-hour clocks

Geometry—Position and Directions

- I can describe positions on a 2D grid as coordinates in the first quadrant
- I can describe movements between positions as translations of a given unit to the left/right and up/down
- I can plot specified points and draw sides to complete a given polygon

Geometry - Shape

- I can identify lines of symmetry in 2-D shapes presented in different orientations
- I can complete a simple symmetric figure with respect to a specific line of symmetry
- I can compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes
- I can identify acute and obtuse angles and compare and order angles up to two right angles by size

Statistics

- I can interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs
- I can solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.

Vocabulary: convert, quadrilateral, triangle, properties, symmetry right angle, acute, obtuse , continuous data, line graph, coordinate, translation, quadrant, x/y axis, perimeter, area, kilometre , metre, rectilinear.

Year 5

Measurement

- I can calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm 2) and square metres (m 2) and estimate the area of irregular shapes
- I can estimate volume (e.g. using 1 cm 3 blocks to build cubes and cuboids) and capacity (e.g. using water)
- I can use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling.
- I can measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres
- I can convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)
- I can solve problems involving converting between units of time
- I can understand and use equivalences between metric units and common imperial units such as inches, pounds and pints

Geometry—Position and Directions

- 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

Geometry—Shape

- I can identify 3D shapes, including cubes and other cuboids, from 2D representations
- I can draw given angles, and measure them in degrees (o)
- I can use the properties of rectangles to deduce related facts and find missing lengths and angles
- I can distinguish between regular and irregular polygons based on reasoning about equal sides and angles
- I know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
- I can identify: angles at a point and one whole turn (total 360 o), angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180 o) and other multiples of 90

Statistics

- I can complete, read and interpret information in tables, including timetables
- I can solve comparison, sum and difference problems using information presented in a line graph

Vocabulary: volume, imperial, metric, reflex, dimensions, regular and irregular, reflection, translation , degrees.

Year 6

Measurement

- I can calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm 3) and cubic metres (m 3), and extending to other units such as mm 3 and km 3 .
- 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 recognise that shapes with the same areas can have different perimeters and vice versa
- I can calculate the area of parallelograms and triangles
- I can recognise when it is possible to use formulae for area and volume of shapes
- 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 convert between miles and kilometres

Geometry—Position and Directions

- I can describe positions on the full coordinate grid (all four quadrants)
- I can draw and translate simple shapes on the coordinate plane, and reflect them in the axes.

Geometry - Shape

- I can recognise, describe and build simple 3D shapes, including making nets
- I can illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
- I can draw 2D shapes using given dimensions and angles
- 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 recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles

Statistics

- I can interpret and construct pie charts and line graphs and use these to solve problems
- I can calculate and interpret the mean as an average

Vocabulary: four quadrants, vertically opposite, circumference, radius, diameter, linear, substitute, variable, symbol, know values, mean, pie hart, construct, conversion.