Year 6 - Geometry and Measures

	Emerging	Expected	Exceeding
Measures	**Sufficient evidence shows the ability to:** ❑ Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre). ❑ Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. ❑ Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. ❑ 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. ❑ Estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]. ❑ Solve problems involving converting between units of time. ❑ Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.	**Sufficient evidence shows the ability to:** ❑ Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. ❑ 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. ❑ Convert between miles and kilometres. ❑ Recognise that shapes with the same areas can have different perimeters and vice versa. ❑ Recognise when it is possible to use formulae for area and volume of shapes. ❑ Calculate the area of parallelograms and triangles. ❑ 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].	**Sufficient evidence shows the ability to:** **All aspects of measurement at the national standard are embedded** ❑ Apply knowledge of other areas of the curriculum to their understanding of and problem solving with measures. E.g. squares, cubes, fractions, multiplication decimals. ❑ Convert fluently and efficiently between different units of measures and be able to reason about the multiplicative relationship between related measures. ❑ Use their understanding of the concepts related to measures to solve increasingly complex problems. ❑ Communicate reasoning and talk about mathematics using sophisticated mathematical language. ❑ Apply knowledge of measures to other areas of the curriculum such as science.
Geometry - Properties of shapes	**Sufficient evidence shows the ability to:** ❑ Identify 3-D shapes, including cubes and other cuboids, from 2-D representations. ❑ Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. ❑ Draw given angles, and measure them in degrees (°). ❑ Identify: angles at a point and one whole turn (total 360°) angles at a point on a straight line and 2 1 a turn (total 180°) other multiples of 90°. ❑ Use the properties of rectangles to deduce related facts and find missing lengths and angles. ❑ Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	**Sufficient evidence shows the ability to:** ❑ Draw 2-D shapes using given dimensions and angles. ❑ Recognise, describe and build simple 3-D shapes, including making nets. ❑ Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons. ❑ Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.	**Sufficient evidence shows the ability to:** **All aspects of shape at the national standard are embedded** ❑ Sort and classify shapes using a wide range of criterion using increasingly sophisticated mathematically appropriate vocabulary. ❑ Creatively apply knowledge of shapes to solving problems with increasing complexity and be able to justify reasoning and communicate their thinking. ❑ Make links and connections with other areas of the curriculum and be able to generalise their understanding.

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Geometry - Position and movement	**Sufficient evidence shows the ability to:** ❑ 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.	**Sufficient evidence shows the ability to:** ❑ Describe positions on the full coordinate grid (all four quadrants) ❑ Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.	**Sufficient evidence shows the ability to: All aspects of position and movement at the national standard are embedded.** ❑ Solve increasingly complex problems involving position and movement. ❑ Apply knowledge and understanding of position and movement to other curriculum areas such as geography and science.
Statistics	**Sufficient evidence shows the ability to:** ❑ Solve comparison, sum and difference problems using information presented in a line graph. ❑ Complete, read and interpret information in tables, including timetables.	**Sufficient evidence shows the ability to:** ❑ Interpret and construct pie charts and line graphs and use these to solve problems. ❑ Calculate and interpret the mean as an average.	**Sufficient evidence shows the ability to: All aspects of statistics at the national standard are embedded.** ❑ Use knowledge of data handling to pose hypothesis and answer questions through the analysis and interpretation of data. ❑ Draw conclusions based on data and be able to communicate reasoning. Be able to look for alternative explanations and hypothesis. ❑ Use understanding of statistics in other curriculum areas.