Year 6
National Curriculum Maths Objectives

Place value

★ read, write, order and compare numbers up to 10 000 000 and determine the value of each digit
★ round any whole number to a required degree of accuracy
★ use negative numbers in context, and calculate intervals across zero
★ solve number and practical problems that involve all of the above

Addition, Subtraction, Multiplication and Division

★ multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
★ divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context
★ divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context
★ perform mental calculations, including with mixed operations and large numbers
★ identify common factors, common multiples and prime numbers
★ use their knowledge of the order of operations to carry out calculations involving the four operations
★ solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
★ solve problems involving addition, subtraction, multiplication and division
★ use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

Fractions

★ compare and order fractions whose denominators are all multiples of the same number
★ identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
★ recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, two fifths + four fifths = six fifths = 1one fifth]

- ★ add and subtract fractions with the same denominator and denominators that are multiples of the same number
- ★ multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
- ★ read and write decimal numbers as fractions [for example, 0.71 = seventy-one hundredths]
- ★ recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
- ★ round decimals with two decimal places to the nearest whole number and to one decimal place
- ★ read, write, order and compare numbers with up to three decimal places
- ★ solve problems involving number up to three decimal places
- ★ recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal
- ★ solve problems which require knowing percentage and decimal equivalents of a half, one quarter, one fifth, two fifths, four fifths and those fractions with a denominator of a multiple of 10 or 25

Measurement

- ★ 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

Geometry: Shapes

- ★ 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 (o)
- ★ identify: angles at a point and one whole turn (total 360)
- ★ identify: angles at a point on a straight line and a half a turn (total 180)
- ★ identify: 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

Geometry: Position and direction

- ★ 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

Statistics

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