

National Curriculum 2014 Numeracy Objectives

Number – Number and Place Value

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|--|---|--|--|---|---|
| <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number <input type="checkbox"/> count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens <input type="checkbox"/> given a number, identify one more and one less <input type="checkbox"/> identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least <input type="checkbox"/> read and write numbers from 1 to 20 in numerals and words. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward <input type="checkbox"/> recognise the place value of each digit in a two-digit number (tens, ones) <input type="checkbox"/> identify, represent and estimate numbers using different representations, including the number line <input type="checkbox"/> compare and order numbers from 0 up to 100; use <, > and = signs <input type="checkbox"/> read and write numbers to at least 100 in numerals and in words <input type="checkbox"/> use place value and number facts to solve problems. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number <input type="checkbox"/> recognise the place value of each digit in a three-digit number (hundreds, tens, ones) <input type="checkbox"/> compare and order numbers up to 1000 <input type="checkbox"/> identify, represent and estimate numbers using different representations <input type="checkbox"/> read and write numbers up to 1000 in numerals and in words <input type="checkbox"/> solve number problems and practical problems involving these ideas. | <p>Pupils should be taught to</p> <ul style="list-style-type: none"> <input type="checkbox"/> count in multiples of 6, 7, 9, 25 and 1000 <input type="checkbox"/> find 1000 more or less than a given number <input type="checkbox"/> count backwards through zero to include negative numbers <input type="checkbox"/> recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) <input type="checkbox"/> order and compare numbers beyond 1000 <input type="checkbox"/> identify, represent and estimate numbers using different representations <input type="checkbox"/> round any number to the nearest 10, 100 or 1000 <input type="checkbox"/> solve number and practical problems that involve all of the above and with increasingly large positive numbers <input type="checkbox"/> read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit <input type="checkbox"/> count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 <input type="checkbox"/> interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero <input type="checkbox"/> round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 <input type="checkbox"/> solve number problems and practical problems that involve all of the above <input type="checkbox"/> read Roman numerals to 1000 (M) and recognise years written in Roman numerals. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> read, write, order and compare numbers up to 10 000 000 and determine the value of each digit <input type="checkbox"/> round any whole number to a required degree of accuracy <input type="checkbox"/> use negative numbers in context, and calculate intervals across zero <input type="checkbox"/> solve number and practical problems that involve all of the above. |

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Number – Addition and Subtraction

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 (+ - x ÷ combined) |
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| <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs <input type="checkbox"/> represent and use number bonds and related subtraction facts within 20 <input type="checkbox"/> add and subtract one-digit and two-digit numbers to 20, including zero <input type="checkbox"/> solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> solve problems with addition and subtraction: <input type="checkbox"/> using concrete objects and pictorial representations, including those involving numbers, quantities and measures <input type="checkbox"/> applying their increasing knowledge of mental and written methods <input type="checkbox"/> recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 <input type="checkbox"/> add and subtract numbers using concrete objects, pictorial representations, and mentally, including: <ul style="list-style-type: none"> <input type="checkbox"/> a two-digit number and ones <input type="checkbox"/> a two-digit number and tens <input type="checkbox"/> two two-digit numbers <input type="checkbox"/> adding three one-digit numbers <input type="checkbox"/> show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot <input type="checkbox"/> recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> add and subtract numbers mentally, including: <ul style="list-style-type: none"> <input type="checkbox"/> a three-digit number and ones <input type="checkbox"/> a three-digit number and tens <input type="checkbox"/> a three-digit number and hundreds <input type="checkbox"/> add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction <input type="checkbox"/> estimate the answer to a calculation and use inverse operations to check answers <input type="checkbox"/> solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate <input type="checkbox"/> estimate and use inverse operations to check answers to a calculation <input type="checkbox"/> solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) <input type="checkbox"/> add and subtract numbers mentally with increasingly large numbers <input type="checkbox"/> use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy <input type="checkbox"/> solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication <input type="checkbox"/> 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 <input type="checkbox"/> 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 <input type="checkbox"/> perform mental calculations, including with mixed operations and large numbers <input type="checkbox"/> identify common factors, common multiples and prime numbers <input type="checkbox"/> use their knowledge of the order of operations to carry out calculations involving the four operations <input type="checkbox"/> solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why <input type="checkbox"/> solve problems involving addition, subtraction, multiplication and division <input type="checkbox"/> use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. |

National Curriculum 2014 Numeracy Objectives

Number – Multiplication and Division

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 (+ - x ÷ combined) |
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| <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> □ solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> □ recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers □ calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs □ show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot □ solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> □ recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables □ write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods □ solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> □ recall multiplication and division facts for multiplication tables up to 12 x 12 □ use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers □ recognise and use factor pairs and commutatively in mental calculations □ multiply two-digit and three-digit numbers by a one-digit number using formal written layout □ solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> □ identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers □ Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers □ establish whether a number up to 100 is prime and recall prime numbers up to 19 □ multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers □ multiply and divide numbers mentally drawing upon known facts □ divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context □ multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 □ recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) □ solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes □ solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign □ solve problems involving multiplication and division, including | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> □ 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. |

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| | | | | scaling by simple fractions and problems involving simple rates. | |
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Fractions (inc decimals and percentages)

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
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| <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> recognise, find and name a half as one of two equal parts of an object, shape or quantity <input type="checkbox"/> recognise, find and name a quarter as one of four equal parts of an object, shape or quantity. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$, $\frac{3}{4}$ of a length, shape, set of objects or quantity <input type="checkbox"/> write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10 <input type="checkbox"/> recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators <input type="checkbox"/> recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators <input type="checkbox"/> recognise and show, using diagrams, equivalent fractions with small denominators <input type="checkbox"/> add and subtract fractions with the same denominator within one whole [for example, $\frac{7}{7} + \frac{1}{7} = \frac{6}{7}$] <input type="checkbox"/> compare and order unit fractions, and fractions with the same denominators <input type="checkbox"/> solve problems that involve all of the above. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> recognise and show, using diagrams, families of common equivalent fractions <input type="checkbox"/> count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. <input type="checkbox"/> solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number <input type="checkbox"/> add and subtract fractions with the same denominator <input type="checkbox"/> recognise and write decimal equivalents of any number of tenths or hundredths <input type="checkbox"/> recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ <input type="checkbox"/> find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths <input type="checkbox"/> round decimals with one decimal place to the nearest whole number <input type="checkbox"/> compare numbers with the same number of decimal places up to two decimal places <input type="checkbox"/> solve simple measure and money problems involving fractions and decimals to two decimal places. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> compare and order fractions whose denominators are all multiples of the same number <input type="checkbox"/> identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths <input type="checkbox"/> 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, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1 \frac{1}{5}$] <input type="checkbox"/> add and subtract fractions with the same denominator and denominators that are multiples of the same number <input type="checkbox"/> multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams <input type="checkbox"/> read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$] <input type="checkbox"/> recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents <input type="checkbox"/> round decimals with two decimal places to the nearest whole number and to one decimal place <input type="checkbox"/> read, write, order and compare numbers with up to three decimal places <input type="checkbox"/> solve problems involving number up to three decimal places <input type="checkbox"/> 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 | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> use common factors to simplify fractions; use common multiples to express fractions in the same denomination <input type="checkbox"/> compare and order fractions, including fractions > 1 <input type="checkbox"/> add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions <input type="checkbox"/> multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$ <input type="checkbox"/> divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$] <input type="checkbox"/> associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$] <input type="checkbox"/> identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places <input type="checkbox"/> multiply one-digit numbers with up to two decimal places by whole numbers <input type="checkbox"/> use written division methods in cases where the answer has up to two decimal places <input type="checkbox"/> solve problems which require answers to be rounded to specified degrees of accuracy <input type="checkbox"/> recall and use equivalences |

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| | | | | <input type="checkbox"/> solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25. | between simple fractions, decimals and percentages, including in different contexts. |
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Measurement

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|--|--|--|--|--|---|
| <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> compare, describe and solve practical problems for: <input type="checkbox"/> lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] <input type="checkbox"/> mass/weight [for example, heavy/light, heavier than, lighter than] <input type="checkbox"/> capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] <input type="checkbox"/> time [for example, quicker, slower, earlier, later] <input type="checkbox"/> measure and begin to record the following: <ul style="list-style-type: none"> <input type="checkbox"/> lengths and heights <input type="checkbox"/> mass/weight <input type="checkbox"/> capacity and volume <input type="checkbox"/> time (hours, minutes, seconds) <input type="checkbox"/> recognise and know the value of different denominations of coins and notes <input type="checkbox"/> sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] <input type="checkbox"/> recognise and use language relating to dates, including days of the week, weeks, months and years <input type="checkbox"/> tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature ($^{\circ}$C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels <input type="checkbox"/> compare and order lengths, mass, volume/capacity and record the results using $>$, $<$ and $=$ <input type="checkbox"/> recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value <input type="checkbox"/> find different combinations of coins that equal the same amounts of money <input type="checkbox"/> solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change <input type="checkbox"/> compare and sequence intervals of time <input type="checkbox"/> 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 <input type="checkbox"/> know the number of minutes in an hour and the number of hours in a day. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) <input type="checkbox"/> measure the perimeter of simple 2-D shapes <input type="checkbox"/> add and subtract amounts of money to give change, using both £ and p in practical contexts <input type="checkbox"/> tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks <input type="checkbox"/> 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 <input type="checkbox"/> know the number of seconds in a minute and the number of days in each month, year and leap year <input type="checkbox"/> compare durations of events [for example to calculate the time taken by particular events or tasks]. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Convert between different units of measure [for example, kilometre to metre; hour to minute] <input type="checkbox"/> measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres <input type="checkbox"/> find the area of rectilinear shapes by counting squares <input type="checkbox"/> estimate, compare and calculate different measures, including money in pounds and pence <input type="checkbox"/> read, write and convert time between analogue and digital 12- and 24-hour clocks <input type="checkbox"/> solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) <input type="checkbox"/> understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints <input type="checkbox"/> measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres <input type="checkbox"/> calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes <input type="checkbox"/> estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water] <input type="checkbox"/> solve problems involving converting between units of time <input type="checkbox"/> use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate <input type="checkbox"/> 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 <input type="checkbox"/> convert between miles and kilometres <input type="checkbox"/> recognise that shapes with the same areas can have different perimeters and vice versa <input type="checkbox"/> recognise when it is possible to use formulae for area and volume of shapes <input type="checkbox"/> calculate the area of parallelograms and triangles <input type="checkbox"/> calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3]. |

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Geometry – Properties of Shapes

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|---|---|---|--|---|---|
| <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> recognise and name common 2-D and 3-D shapes, including: <input type="checkbox"/> 2-D shapes [for example, rectangles (including squares), circles and triangles] <input type="checkbox"/> 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line <input type="checkbox"/> identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces <input type="checkbox"/> identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] <input type="checkbox"/> compare and sort common 2-D and 3-D shapes and everyday objects. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them <input type="checkbox"/> recognise angles as a property of shape or a description of a turn <input type="checkbox"/> 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 <input type="checkbox"/> identify horizontal and vertical lines and pairs of perpendicular and parallel lines. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes <input type="checkbox"/> identify acute and obtuse angles and compare and order angles up to two right angles by size <input type="checkbox"/> identify lines of symmetry in 2-D shapes presented in different orientations <input type="checkbox"/> complete a simple symmetric figure with respect to a specific line of symmetry. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> identify 3-D shapes, including cubes and other cuboids, from 2-D representations <input type="checkbox"/> know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles <input type="checkbox"/> draw given angles, and measure them in degrees (o) <input type="checkbox"/> identify: <ul style="list-style-type: none"> <input type="checkbox"/> angles at a point and one whole turn (total 360o) <input type="checkbox"/> angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180o) <input type="checkbox"/> other multiples of 90o <input type="checkbox"/> use the properties of rectangles to deduce related facts and find missing lengths and angles <input type="checkbox"/> distinguish between regular and irregular polygons based on reasoning about equal sides and angles. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> draw 2-D shapes using given dimensions and angles <input type="checkbox"/> recognise, describe and build simple 3-D shapes, including making nets <input type="checkbox"/> compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons <input type="checkbox"/> illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius <input type="checkbox"/> recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. |

Geometry – Position and Direction

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
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| <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> describe position, direction and movement, including whole, half, quarter and three-quarter turns. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> order and arrange combinations of mathematical objects in patterns and sequences <input type="checkbox"/> use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in | | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> describe positions on a 2-D grid as coordinates in the first quadrant <input type="checkbox"/> describe movements between positions as translations of a given unit to the left/right and up/down <input type="checkbox"/> plot specified points and draw sides to complete a given polygon. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> 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. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> describe positions on the full coordinate grid (all four quadrants) <input type="checkbox"/> draw and translate simple shapes on the coordinate plane, and reflect them in the axes. |

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| | terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise). | | | | |
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Statistics

| Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
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| | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> interpret and construct simple pictograms, tally charts, block diagrams and simple tables <input type="checkbox"/> ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity <input type="checkbox"/> ask and answer questions about totalling and comparing categorical data. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> interpret and present data using bar charts, pictograms and tables <input type="checkbox"/> solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. <input type="checkbox"/> solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> solve comparison, sum and difference problems using information presented in a line graph <input type="checkbox"/> complete, read and interpret information in tables, including timetables. | <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> interpret and construct pie charts and line graphs and use these to solve problems <input type="checkbox"/> calculate and interpret the mean as an average. |

Ratio and Proportion

| Year 6 |
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| <p>Pupils should be taught to:</p> <ul style="list-style-type: none"> <input type="checkbox"/> solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts <input type="checkbox"/> solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison <input type="checkbox"/> solve problems involving similar shapes where the scale factor is known or can be found <input type="checkbox"/> solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. |

Algebra

| Year 6 |
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| |

National Curriculum 2014 Numeracy Objectives

Pupils should be taught to:

- use simple formulae
- generate and describe linear number sequences
- express missing number problems algebraically
- find pairs of numbers that satisfy an equation with two unknowns
- enumerate possibilities of combinations of two variables.