MATHS	Key Stage 1		Lower Key Stage 2		Upper Key Stage 2	
	Year1	Year 2	Year 3	Year 4	Year 5	Year 6

Number

Number and Place Value

	Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. **Count, read and write numbers to 100 in** numerals. Count in **multiples of 2's, 5's and 10's.** Identify **1 more and 1 less** of a given number. Identify and present numbers using objects and pictorial representations using the language; 'equal to, more than, less than (fewer), most, least'. **Read and write numbers from 1 to 20 in numerals and words.**	Count in steps of 2, 3 and 5 from 0. Count in 10's from any number forward and backward. Recognise the **place value of each of each 2-digit number.** Identify, represent and estimate numbers using different representations. **Compare and order numbers from 0 up to 100.** Use <, > and = signs **Read and write numbers to at least 100 in numerals and in words.** Use place value and number facts **to solve problems.**	**Count from 0 in multiples of 4, 8, 50 and 100.** **Find 10 or 100 more or less** than a given number. Recognise the **place value of each digit in a 3-digit numbe**r. **Compare and order numbers up to 1000.** Identify, represent and estimate numbers using different representations. **Read and write numbers up to 1000 in numerals and in words.** Solve number problems and practical problems involving these ideas.	**Count in multiples of 6, 7, 9, 25 and 1000.** **Find 1000 more or less than a given number.** Count backwards through zero to **include negative numbers.** Recognise the **place value of each digit in a 4-digit number.** **Order and compare numbers beyond 1000.** Identify, represent and estimate numbers using different representations. **Round any number to the nearest 10, 100 or 1000.** **Solve number and practical problems** that involve all of the above and with increasingly large positive numbers. **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.	**Read, write, order and compare numbers to at least 1 000 000** and determine the value of each digit. **Count forwards and backwards in steps of powers of 10 for any given number up to 1 000 000.** **Interpret negative numbers** in context, count forwards and backwards with positive and negative whole numbers, including through zero. **Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000.** **Solve number problems and practical problems** that involve all of the above. **Read Roman numerals to 1000 (M)** and recognise years written in Roman numerals.	**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 contex**t, and calculate intervals across zero. **Solve number and practical problems** that involve all of the above.

Addition and Subtraction

	Read, write and interpret mathematical statements involving **addition (+), subtraction(-) and equals (=)** signs. Represent and use **number bonds and related subtraction facts within 20.** Add and subtract 1-digit and 2-digit numbers to 20, including 0. **Solve 1-step problems** that involve addition and subtraction, using concrete objects and pictorial representations, and missing problems such as 7= ▢ - 9	**Solve problems using concrete objects** and pictorial representations and apply their knowledge of mental and written methods. **Recall and use addition and subtraction facts to 20 fluently,** and derive and use related facts up to 100. **Add and subtract numbers using concrete objects**, pictorial representations and mentally. Show that addition of 2 numbers can be done in any order **(commutative)** and subtraction of one number from another cannot. Recognise and use the **inverse relationship between addition and subtraction and use this to check calculations** and solve missing number problems.	**Add and subtract numbers mentally** (3 digit number and 1's, 10's, r and 100's) **Add and subtract numbers with up to 3 digits and use the inverse** operations to check the answers **Solve problems,** including missing number problems, using number facts, place value and more complex addition and subtraction.	**Add and subtract numbers with up to 4 digits** using the formal written methods of **column addition and subtraction** where appropriate. **Estimate and use inverse operations** to check answers to a calculation. **Solve addition and subtraction 2-step problems in context**s, deciding which operations and methods to use and why.	**Add and subtract whole numbers with more than 4 digits**, including using formal written methods (columnar addition and subtraction) **Add and subtract numbers mentally with increasingly large numbers.** **Use rounding to check answers** to calculations and determine levels of accuracy. **Solve addition and subtraction multi-step problems in contexts,** deciding which operations and methods to use and why.	**Perform mental calculations,** including with mixed operations and large numbers. **Solve addition and subtraction multi-step problems** in contexts, deciding which operations and methods to use and why. *Use estimation to check** answers** to calculations and determine an appropriate degree of accuracy. **Use knowledge of the order of operations to carry out calculations** involving the 4 operations. ***Solve problems** involving addition, subtraction, multiplication and division.

Multiplication and Division

	Solve 1-strep problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations.	Recall and use **multiplication and division facts for 2, 5 and 10 times tables** and even numbers. Calculate mathematical statements for x and ÷ within multiplication tables and write them **using the x, ÷ and = signs.** Show that multiplication of 2 numbers can be done in any order **(commutative)** and division of one number by another cannot. **Solve problems involving multiplication and division** (using given methods) including problems in context.	Recall and use **multiplication and division facts for the 3, 4 and 8 times tables.** **Write and calculate mathematical statements for multiplication and division** using the tables they know, including 2-digit numbers x 1-digit numbers, using mental and progressing to formal written methods. **Solve problems,** including missing number problems, including positive integer scaling problems and corresponding problems in which n objects are connected to m objects.	Recall **multiplication and division facts for times 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 3 numbers. **Recognise and use factor pairs and commutativity in mental calculation**s. **Multiply 2-digit and 3-digit numbers by 1-digit number using formal written layout.** **Solve problems involving multiplying and adding,** including the distributive law to multiply 2-digit numbers by 1-digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.	**Identify multiples and factors, including finding all factor pairs** of a number, and common factors of 2 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 1- or 2-digit number using formal written method**, including long multiplication for 2-digit numbers. **Multiply and divide numbers mentally drawing** up on known facts. **Divide numbers up to 4 digits by a 1-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 scaling by simple fractions and problems** involving simple rates.	**Multiply multi-digit numbers up to 4 digits by a 2-digit whole number** using the formal written method of long multiplication. **Divide numbers up to 4 digits by a 2-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 2-digit number** using the formal written method of **short division** where appropriate, interpreting remainders according to the context. Identify common factors, common multiples and prime numbers. *Use estimation to check answers** to calculations and determine an appropriate degree of accuracy. **Use knowledge of the order of operations** to carry out calculations involving the 4 operations. ***Solve problems** involving addition, subtraction, multiplication and division.

Fractions
(including decimals from Year 4)
(Including percentages in Year 5 and 6)

	Recognise, find and name a **half** as 1 of 2 equal parts of an object, shape or quantity. Recognise, find and name a **quarter** as 1 of 4 equal parts of an object, shape or quantity.	Recognise, find, **name and write fractions 1/3, ¼, 2/4 and ¾** of length, shape, set of objects or quantity Write simple fractions (1/2 of 6 = 3) and **recognise the equivalence of 2/4 and ½.**	**Count up and down in tenths.** Recognise that **tenths arise from dividing an object into 10 equal parts** and in dividing 1-digit numbers or quantities by 10. Recognise, find and write	Recognise and show, using diagrams, **families of common equivalent fractions.** **Count up and down in hundredths.** Recognise that **hundredths arise when dividing an object**	**Compare and order fractions** whose denominators are all multiples of the same number. **Identify, name and write equivalent fractions of a given fraction,**	Use common factors to **simplify fractions.** Use **common multiples to express fractions** in the same denomination. **Compare and order fractions,** including fractions >1.

			fractions of a discrete set of objects. Recognise and **use fractions as numbers.** Recognise and show, **using diagrams, equivalent fractions with small denominators.** **Add and subtract fractions with the same denominator** within one whole (5/7 + 1/7 = 6/7) **Compare and order unit fractions and fractions with same denominator.** **Solve problems** that involve the above.	by 100 and dividing tenths by 10. **Solve problems involving increasingly harder fractions** to calculate quantities, and fractions to divide quantities. **Add and subtract fractions with the same denominator.** Recognise and **write decimal equivalents of any number of tenths or hundredths.** Recognise and **write decimal equivalents to ¼, ½, ¾.** Find the effect of dividing a 1-or 2-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths. **Round decimals with 1 decimal place to the nearest whole number.** **Compare numbers with the same number of decimal places up to 2 decimal places.** **Solve simple measure and money problems involving fractions and decimals** to 2 decimal places.	represented visually, including tenths and hundredths. **Recognise mixed numbers and improper fractions** and convert from one form to other and write mathematical statements >1 as a mixed number **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.** **Recognise and use thousandths** and relate them to tenths, hundredths and decimal equivalents. **Round decimals with 2 decimal places to the nearest whole number** and to one decimal place. **Read, write, order and compare numbers with up to 3 decimal places.** **Solve problems involving number up to 3 decimal places.** **Recognise the per cent symbol (%)** and understand that per cent relates to 'number of parts per 100' and write percentages as a fraction with denominator 100, and as a decimal. **Solve problems which require knowing percentage and decimal equivalents** of ½, ¼, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25.	Add and subtract fractions with different **denominations** and mixed numbers, using the concept of equivalent fractions. **Multiply simple pairs of proper fractions,** writing the answer in its simplest form. **Divide proper fractions by whole numbers.** **Associate a fraction with division** and calculate decimal fraction equivalents for a simple fraction. **Identify the value of each digit in numbers given to 3 decimal places** and multiply and divide numbers by 10, 100, 1000 giving answers up to 3 decimal places. **Multiply 1-digit numbers with up to 2 decimal places** by whole numbers. **Use written division methods** in cases where the answer has up to 2 decimal places. **Solve problems** which require answers to be rounded to specified degrees of accuracy. Recall and use **equivalences between simple fractions,** decimals and percentages, including in different contexts.

Measurement

	Compare, describe and solve practical problems for : Length and heights, mass/weight, capacity and volume, time **Measure and begin to record:** Length and heights, mass/weight, capacity and volume, time Recognise and know the **value of different denominations of coins and notes.** Sequence events in **chronological order.** Recognise and use language relating to **dates,** including days of the week, months of the year Tell the **time to the hour and half past the hour.** Draw hands on a clock to show these times.	**Choose and use appropriate standards of units to estimate and measure** length/height(m/cm), mass(g/kg), capacity (l/ml) to nearest appropriate unit. **Use rules, scales, thermometers and measuring vessels.** **Compare and order lengths, mass, volume/capacity** and record results using <, > and =. Recognise and **use symbols for pounds (£) and pence (p)**, combine amounts and make a particular value. Find different combinations of coins that equal the same amounts of money **Solve problems in a practical context** involving addition and subtraction of money of the same unit, including change Compare and **sequence intervals of time.** **Tell and write the time to 5 minutes;** including quarter past/to the hour and draw hands on a clock face to show these times.	**Measure, compare, add and subtract:** length (m/cm/mm), mass(kg/g), volume/capacity (l/ml) **Measure the perimeter** of simple 2-D shapes **Add and subtract amounts of money to give change,** using both £ and p in practical contexts. **Tell and write the time from an analogue clock,** including using Roman numerals, and 12-hour and 24-hour clocks. **Estimate and read time with increasing accuracy to the nearest minute.** **Record and compare time in terms of seconds, minutes and hours.** Use vocabulary : o' clock, a.m./p.m., morning, afternoon, noon and midnight **Know the number of seconds in a minute and the number of days in each month, year and leap year.** **Compare durations of events.**	**Convert between different units of measure.** Measure and calculate the **perimeter** of a rectilinear figure in cm and m. Find the **area of rectilinear** shapes by counting squares. **Estimate, compare and calculate different measures, including money in pounds and pence.** **Read, write and convert time between analogue and digital 12- and 24- hour clocks.** **Solve problems** involving converting from hours to minutes, minutes to seconds, years to months, weeks to days.	**Convert between different units of metric measures.** Understand and **use approximate equivalences between metric units and common imperial unit**s. Measure and calculate the **perimeter** of composite rectilinear shapes in cm and m. Calculate and compare **the area** of rectangles, and including using standard units, square cm (cm²) and square meters (m²) and estimate irregular shapes. **Estimate volume and capacity.** **Solve problems involving converting between units of time.** Use all **4 operations to solve problems involving measure** using decimal notation, including scaling.	Solve problems involving calculation and conversion of units of measure, using decimal notation up to 3 decimal places. Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit to a larger unit of measurement.

Geometry

Properties of shapes

Properties of shapes	**Recognise and name common 2-D and 3-D shapes** including: 2-D shapes- rectangles, circles and triangles 3-D shapes – cuboids, pyramids and spheres.	**Identify and describe the properties of 2-D shapes,** including the number of sides and line of symmetry in a vertical line. **Identify and describe the properties of 3-D shapes** including the number of edges, vertices and faces Identify 2-D shapes on the surface of a 3-D shapes **Compare and sort common 2-D and 3-D shapes and everyday objects.**	**Draw 2-D shapes and make 3-D shapes** using modelling materials. **Recognise 3-D shapes in different orientations** and describe them. Recognise **angles as a property of a shape** or a description of a turn. Identify right angles. Recognise that 2 straight 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.** **Identify horizontal and vertical lines** and pairs of perpendicular and parallel lines.	**Compare and classify geometric shapes,** including quadrilaterals and triangles, **based on their properties and sizes.** Identify **acute and obtuse angles** and compare and order angles up to two right angles by size. Identify **lines of symmetry** in 2-D shapes presented in different orientations. Complete a simple symmetric figure with respect to specific line of symmetry.	**Identify 3-D Shapes 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 1 whole turn (total 360 °)** Identify **angles at a point on a straight line and ½ a turn (total 180 °)** Identify other multiples of 90 °. Use the properties of rectangles to deduce related facts and **find missing lengths and angle**s. **Distinguish between regular and irregular polygons** based on reasoning about equal sides and angles.	

Position and direction

Position and direction	**Describe position, direction and movement,** including whole, half, quarter and three-quarter turns.	**Order and arrange** combinations of mathematical **objects in patterns and sequences.** Use mathematical vocabulary to **describe position, direction and**		Describe **positions on a 2-D grid as coordinates in the 1ˢᵗ quadrant.** Describe movements between positions as **translations** of a given unit to the left/right and up/down.	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	

		movement (on a straight line, distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns)		**Plot specified points** and draw sides to complete a given polygon.	changed.	

Statistics

		Interpret and construct simple pictograms, tally charts, block diagrams and simple tables. Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. Ask and answer questions about **totalling and comparing categorical data.**	**Interpret and present data using bar charts, pictograms and tables. Solve 1-step and 2-step questions using information** presented in scaled bar charts and pictograms and tables.	Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	Solve comparison, sum and difference problems using information presented in a **line graph.** Complete, read and **interpret information in tables,** including timetables.	