MATHS PROGRESSION

	Reception		
	Previous year's content	Reception content	Subsequent year's content
Number and Place Value	• Develop fast recognition of up to 3 objects, without having to count them individually ('subitising'). • Use fingers to represent up to 5 • Count confidently to 5 and beyond • Say one number for each item in order: 1,2,3,4,5. • Identify representations of 1 to 5 • Link numeral to amounts up to 5 • Counts objects to 5 and understands that the last number tells you how many there are (cardinal principle) • Experiment with own marks to represent an amount and be able to explain it • Recognise numerals to 5 • Counts actions up to 5	• Count forwards and backwards to and from 20+. • Count actions, objects and sounds to 20+ • Link numerals and amounts to 20 • Order numbers to 20 • Can read and write numerals to 20. • **Verbally count beyond 20, recognising the pattern of the counting system (ELG).** • **Subitise up to 5 (ELG)**	• Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number • Count in multiples of twos, fives and tens • Read and write numbers to 100 in numerals • Read and write numbers from 1 to 20 in numerals and words • **Begin to recognise the place value of numbers beyond 20 (tens and ones)** • Identify and represent numbers using objects and pictorial representations including the number line • Use the language of: equal to, more than, less than (fewer), most, least • Given a number, identify one more and one less • **Recognise and create repeating patterns with numbers, objects and shapes** • **Identify odd and even numbers linked to counting in twos from 0 and 1** • **Solve problems and practical problems involving all of the above**
Addition and Subtraction	• Comparing amounts (more than and fewer than) • Solve real world mathematical problems with numbers up to 5 • Take one away and know they have less • Add one more and know they have one more • Solve real world mathematical problems up to amounts of 3	• Finds one more and one less. • Compare numbers using "more than", "less than", "fewer", and "equal to". • **Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than, or the same as the other quantity (ELG)** • Recognises that + means add and – means subtract. • Partitions sets of objects using a part-whole model, exploring composition to 10. • **Have a deep understanding of number to 10, including the composition of each number (ELG)** • Understands that teen numbers are 10+____ • Can use the vocabulary of tens and ones to explain pattern. • Can recall number bonds to 10, explaining the pattern. • **Automatically recall number bonds to 5 (including subtraction facts) and some number bonds to 10, including double facts (ELG)** • Solves real world mathematical problems with numbers to 10+	• 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 one-digit and two-digit numbers to 20, including zero (using concrete objects and pictorial representations)** • Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations • Solve one-step problems that involve missing number problems such as 7 = ? - 9
Multiplication and Division	• Building sharing skills • Understands sharing is splitting amounts into equal parts	• Understands that halving is sharing into two equal parts. • Understands that doubling is adding the same number to itself. • **Automatically recall number bonds to 5 (including subtraction facts) and some number bonds to 10, including double facts (ELG)** • **Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed evenly (ELG)**	• **Recall and use doubles of all numbers to 10 and corresponding halves** 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
Measures	• Make comparisons between objects linked to height, weight, length and capacity using correct vocabulary • Uses words big, small, short and tall to describe objects • Identify objects that are heavy and light, using correct vocabulary to give reasoning	**Measures** • Can order three items by length/height using non-standard measures. Uses 'biggest', 'smallest', 'shortest' and 'tallest'.	• Measure and begin to record lengths and heights, using non-standard and then manageable • **Measure and begin to record standard units (m/cm)**

MATHS PROGRESSION

	• Use the words full and empty to compare capacity • Know some days of the week (through days of the week song and calendar) • Introduced to new vocabulary: first, soon, last • Talk about and order key day events Shape • Talk about 2D shapes • Can identify circle, triangle, rectangle and square • Explore 2D shape properties • Identify 2D shapes in environment • Talk about 3D shapes using words corners, straight, flat, round • Relating what shapes have same and different properties • Use shapes appropriately when creating sculptures/buildings etc. E.g., Triangle or triangular prism for roof, square or cube for house Position and Direction • Children exposed to key positional language vocabulary. Under, in, on, behind, next to • Can follow a positional language instruction • Describe a familiar route, e.g., Way to school or home. • Describe their route and give others direction, e.g., outdoor assault course, children can describe the way they travelled and direct peers to complete using positional language • Pattern • Can copy and continue a pattern (ABAB) challenge to (ABCABC) • Create and extend own AB pattern using provision resources • Create and extend own AB pattern through colour, shape and number • Spot pattern in their environment	• Can order three items by weight using non-standard measures. Uses 'heaviest', 'lightest' • Can order three items by capacity using non-standard measures. Uses 'full', 'empty', 'half empty' • Children can talk about significant times of the day, home time, lunch time etc… and then sequence them • Children can use language before, after, yesterday, today, tomorrow. • Says the days of the week in order • Can tell you which day comes before/after a given day **Shape** • Explores how many corners and sides basic 2D shapes have. Is beginning to explain if the sides are 'straight' or 'curved' • Explores how many corners and sides other 2D shapes have. • Compose and decompose 2D shapes so that children recognise a shape can have other shapes within it, just as numbers can. Combines shapes to make pictures • Can identify a circle, square, triangle, rectangle, semi-circle, oval diamond. • Explores which shapes will roll and which will slide and is beginning to explain why using the vocabulary 'curved' and 'flat'. • Recognise that the faces on a 3D shape often comprise of 2D shapes. • Recognises 3D shapes in the environment. • Can recognise and name; cone, sphere, cube, cuboid, cylinder, pyramid. **Position and Direction** • Can follow and give an instruction using positional language. (on, in, under, next to, in between, in front, behind). • Can use ordinal numbers to describe position in a line. • Describes a familiar route using directional language - 'through', 'over', 'under', 'forwards', 'backwards', 'right' and 'left' • Design a route and explain to a friend **Pattern** • Continue, copy and recreate repeated patterns (ABBC)	• Measure and begin to record mass/weight, using non-standard and then manageable standard • **<u>Measure and begin to record standard units (kg/g)</u>** • Measure and begin to record capacity and volume using non-standard and then manageable • **<u>Measure and begin to record standard units (litres/ml)</u>** • Measure and begin to record time (hours/minutes/second) • Compare, describe and solve practical problems for: lengths and heights (for example, long/short, longer/shorter) • Compare, describe and solve practical problems for: tall/short, double/half • Compare, describe and solve practical problems for: mass/weight (for example, heavy/light, heavier than, lighter than) • Compare, describe and solve practical problems for: capacity and volume (for example, full/empty, more than, less than) • Compare, describe and solve practical problems for time (for example, quicker, slower, earlier, later) • Recognise and use language relating to dates, including days of the week, weeks, months and years • Sequence events in chronological order using language (for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening • Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times • Recognise and know the value of different denominations of coins and notes

	Year 1		
	Previous year's content	Year 1 content	Subsequent year's content
Number and Place Value	• Count forwards and backwards to and from 20+. • Count actions, objects and sounds to 20+ • Link numerals and amounts to 20 • Order numbers to 20 • Can read and write numerals to 20. • **Verbally count beyond 20, recognising the pattern of the counting system (ELG).**	• Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number • Count in multiples of twos, fives and tens • Read and write numbers to 100 in numerals • Read and write numbers from 1 to 20 in numerals and words • **<u>Begin to recognise the place value of numbers beyond 20 (tens and ones)</u>**	• **<u>Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward</u>** • Read and write numbers to at least 100 in numerals and in words • Recognise the place value of each digit in a two-digit number (tens, ones)

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	• **Subitise up to 5 (ELG)**	• Identify and represent numbers using objects and pictorial representations including the number line • Use the language of: equal to, more than, less than (fewer), most, least • Given a number, identify one more and one less • **Recognise and create repeating patterns with numbers, objects and shapes** • **Identify odd and even numbers linked to counting in twos from 0 and 1** **Solve problems and practical problems involving all of the above**	• Identify, represent and estimate numbers using different representations, including the number line • **Compare and order numbers from 0 up to 100; use <, > and = signs** • **Use place value and number facts to solve problems**
Addition and Subtraction	• Finds one more and one less. • Compare numbers using “more than”, “less than”, “fewer”, and “equal to”. • **Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than, or the same as the other quantity (ELG)** • Recognises that + means add and – means subtract. • Partitions sets of objects using a part-whole model, exploring composition to 10. • **Have a deep understanding of number to 10, including the composition of each number (ELG)** • Understands that teen numbers are 10+____ • Can use the vocabulary of tens and ones to explain pattern. • Can recall number bonds to 10, explaining the pattern. • **Automatically recall number bonds to 5 (including subtraction facts) and some number bonds to 10, including double facts (ELG)** • Solves real world mathematical problems with numbers to 10+	• 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 one-digit and two-digit numbers to 20, including zero (using concrete objects and pictorial representations)** • Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations Solve one-step problems that involve missing number problems such as 7 = ? - 9	• **Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting)** • Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot • **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, including:** - **a two-digit number and ones** - **a two-digit number and tens** - **two two-digit numbers** - **adding three one-digit numbers** • Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems • **Solve problems with addition and subtraction including with missing numbers in various context.**
Multiplication and Division	• Understands that halving is sharing into two equal parts. • Understands that doubling is adding the same number to itself. • **Automatically recall number bonds to 5 (including subtraction facts) and some number bonds to 10, including double facts (ELG)** • **Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed evenly (ELG)**	• **Recall and use doubles of all numbers to 10 and corresponding halves** 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	• **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 using repeated addition) and division within the multiplication tables and write them using the multiplication (×), 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 (including those with remainders), using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts**
Measures	**Measure:** • Can order three items by length/height using non-standard measures. Uses ‘biggest’, ‘smallest’, ‘shortest’ and ‘tallest’. • Can order three items by weight using non-standard measures. Uses ‘heaviest’, ‘lightest’	• Measure and begin to record lengths and heights, using non-standard and then manageable • **Measure and begin to record standard units (m/cm)** • Measure and begin to record mass/weight, using non-standard and then manageable standard • **Measure and begin to record standard units (kg/g)**	• Choose and use appropriate standard units to estimate and* measure length/height in any direction (m/cm); *mass (kg/g);* temperature (°C);* capacity and volume (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels

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	• Can order three items by capacity using non-standard measures. Uses 'full', 'empty', 'half empty' • Children can talk about significant times of the day, home time, lunch time etc… and then sequence them • Children can use language before, after, yesterday, today, tomorrow. • Says the days of the week in order • Can tell you which day comes before/after a given day	• Measure and begin to record capacity and volume using non-standard and then manageable • **Measure and begin to record standard units (litres/ml)** • Measure and begin to record time (hours/minutes/second) • Compare, describe and solve practical problems for: lengths and heights (for example, long/short, longer/shorter) • Compare, describe and solve practical problems for: tall/short, double/half • Compare, describe and solve practical problems for: mass/weight (for example, heavy/light, heavier than, lighter than) • Compare, describe and solve practical problems for: capacity and volume (for example, full/empty, more than, less than) • Compare, describe and solve practical problems for time (for example, quicker, slower, earlier, later) • Recognise and use language relating to dates, including days of the week, weeks, months and years • Sequence events in chronological order using language (for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening • Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times • Recognise and know the value of different denominations of coins and notes	• Compare and order lengths, mass, volume/capacity and record the results using >, < and = • Recognise and use symbols for pounds (£) and pence (p) • Combine amounts to make a particular value • Find different combinations of coins that equal the same amounts of money • Compare and sequence intervals of time • 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 • Know the number of minutes in an hour and the number of hours in a day • **Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change and measures (including time)** • Recognise 3-D shapes in different orientations; and describe them with increasing accuracy
Fractions	• Understands that halving is sharing into two equal parts.	• **Understand that a fraction can describe part of a whole** • **Understand that a unit fraction represents one equal part of a whole** • Recognise, find and name a half as one of two equal parts of an object shape or quantity (including measure) Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity (including measure)	• **Recognise, find, name and write fractions 1/2 1/4 2/4 3/4 and of a length, shape, set of objects or quantity** • Write simple fractions for example, 1/2 of 6 = 3 and recognise equivalents of 1/2 + 1/4
Position and Direction	• Can follow and give an instruction using positional language (on, in, under, next to, in between, in front, behind). • Can use ordinal numbers to describe position in a line. • Describes a familiar route using directional language - 'through', 'over', 'under', 'forwards', 'backwards', 'right' and 'left' • Design a route and explain to a friend **Pattern** • Continue, copy and recreate repeated patterns (ABBC)	• Describe movement, including whole, half, quarter and three-quarter turns • **Recognise and create repeating patterns with objects and shapes** • Describe position and direction	• Order/arrange combinations of mathematical objects in patterns/sequences • **Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)**
Shape	• Explores how many corners and sides basic 2D shapes have. Is beginning to explain if the sides are 'straight' or 'curved' • Explores how many corners and sides other 2D shapes have.	• Recognise and name common 2-D shapes, including rectangles (including squares), circles and triangles • Recognise and name common 3-D shapes, including cuboids (including cubes), pyramids and spheres	• Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line

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	• Compose and decompose 2D shapes so that children recognise a shape can have other shapes within it, just as numbers can. Combines shapes to make pictures • Can identify a circle, square, triangle, rectangle, semi-circle, oval diamond. • Explores which shapes will roll and which will slide and is beginning to explain why using the vocabulary 'curved' and 'flat'. • Recognise that the faces on a 3D shape often comprise of 2D shapes. • Recognises 3D shapes in the environment. • Can recognise and name; cone, sphere, cube, cuboid, cylinder, pyramid.		• 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 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] • **Compare and sort objects, numbers and common 2-D and 3-D shapes and everyday objects**
Statistics		• **Sort objects, numbers and shapes to a given criterion and their own** • **Present and interpret data in block diagrams using practical equipment** • **Ask and answer simple questions by counting the number of objects in each category** • **Ask and answer questions by comparing categorical data**	• 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**

	Year 2		
	Previous year's content	Year 2 content	Subsequent year's content
Number and Place Value	• Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number • Count in multiples of twos, fives and tens • Read and write numbers to 100 in numerals • Read and write numbers from 1 to 20 in numerals and words • **Begin to recognise the place value of numbers beyond 20 (tens and ones)** • Identify and represent numbers using objects and pictorial representations including the number line • Use the language of: equal to, more than, less than (fewer), most, least • Given a number, identify one more and one less • **Recognise and create repeating patterns with numbers, objects and shapes** • **Identify odd and even numbers linked to counting in twos from 0 and 1** **Solve problems and practical problems involving all of the above**	• **Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward** • Read and write numbers to at least 100 in numerals and in words • Recognise the place value of each digit in a two-digit number (tens, ones) • Identify, represent and estimate numbers using different representations, including the number line • **Compare and order numbers from 0 up to 100; use <, > and = signs** **Use place value and number facts to solve problems**	• **Count from 0 in multiples of 4, 8, 50 and 100; finding 10 or 100 more or less than a given number** • Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) • Compare and order numbers up to 1000 • Identify, represent and estimate numbers using different representations • **Read and write numbers to at least 1000 in numerals and in words** • **Solve number problems and practical problems involving these ideas**
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	• **Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting)**	• **Add and subtract numbers mentally, including:** - **a three-digit number and ones** - **a three-digit number and tens** - **a three-digit number and hundreds**

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	• **Add and subtract one-digit and two-digit numbers to 20, including zero (using concrete objects and pictorial representations)** • Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations Solve one-step problems that involve missing number problems such as 7 = ? - 9	• Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot • **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, including:** - **a two-digit number and ones** - **a two-digit number and tens** - **two two-digit numbers** - **adding three one-digit numbers** • Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems **Solve problems with addition and subtraction including with missing numbers in various context.**	• Add and subtract numbers with up to three digits, using the efficient written methods of columnar addition and subtraction • Estimate the answer to a calculation and use inverse operations to check answers • Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction
Multiplication and Division	• **Recall and use doubles of all numbers to 10 and corresponding halves** 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	• **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 using repeated addition) and division within the multiplication tables and write them using the multiplication (×), 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 (including those with remainders), using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts**	• **Recall and use multiplication and division facts for the 3x's multiplication tables** • **Recall and use multiplication and division facts for the 4 x's multiplication tables** • **Recall and use multiplication and division facts for the 8x's 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 efficient written methods** • solve problems involving multiplication and division, missing number problems, including integer scaling problems and correspondence problems in which n objects are connected to m objects
Measures	• Measure and begin to record lengths and heights, using non-standard and then manageable • **Measure and begin to record standard units (m/cm)** • Measure and begin to record mass/weight, using non-standard and then manageable standard • **Measure and begin to record standard units (kg/g)** • Measure and begin to record capacity and volume using non-standard and then manageable • **Measure and begin to record standard units (litres/ml)** • Measure and begin to record time (hours/minutes/second) • Compare, describe and solve practical problems for: lengths and heights (for example, long/short, longer/shorter) • Compare, describe and solve practical problems for: tall/short, double/half • Compare, describe and solve practical problems for: mass/weight (for example, heavy/light, heavier than, lighter than)	• Choose and use appropriate standard units to estimate and* measure length/height in any direction (m/cm); *mass (kg/g);* temperature (°C);* capacity and volume (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels • Compare and order lengths, mass, volume/capacity and record the results using >, < and = • Recognise and use symbols for pounds (£) and pence (p) • Combine amounts to make a particular value • Find different combinations of coins that equal the same amounts of money • Compare and sequence intervals of time • 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 • Know the number of minutes in an hour and the number of hours in a day • **Solve simple problems in a practical context involving addition and subtraction of money of the**	• **measure, compare, add and subtract: lengths (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 from I to XII, 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, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight • 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 • Know the number of seconds in a minute and the number of days in each month, year and leap year Compare durations of events, for example to calculate the time taken by particular events or tasks

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	• Compare, describe and solve practical problems for: capacity and volume (for example, full/empty, more than, less than) • Compare, describe and solve practical problems for time (for example, quicker, slower, earlier, later) • Recognise and use language relating to dates, including days of the week, weeks, months and years • Sequence events in chronological order using language (for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening • Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times • Recognise and know the value of different denominations of coins and notes	**same unit, including giving change and measures (including time)** Recognise 3-D shapes in different orientations; and describe them with increasing accuracy	
Fractions	• **Understand that a fraction can describe part of a whole** • **Understand that a unit fraction represents one equal part of a whole** • Recognise, find and name a half as one of two equal parts of an object shape or quantity (including measure) Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity (including measure)	• **Recognise, find, name and write fractions 1/2 1/4 2/4 3/4 and of a length, shape, set of objects or quantity** Write simple fractions for example, 1/2 of 6 = 3 and recognise equivalents of 1/2 + 1/4	• **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** • **Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators** • Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators • **Recognise and show, using diagrams, equivalent fractions with small denominators** • Add and subtract fractions with the same denominator within one whole (e.g. 5/7 + 1/7 = 6/7) • Compare and order unit fractions with the same denominator • Solve problems that involve all of the above
Position and Direction	• Describe movement, including whole, half, quarter and three-quarter turns • **Recognise and create repeating patterns with objects and shapes** Describe position and direction	• Order/arrange combinations of mathematical objects in patterns/sequences • **Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)**	
Shape	• Recognise and name common 2-D shapes, including rectangles (including squares), circles and triangles Recognise and name common 3-D shapes, including cuboids (including cubes), pyramids and spheres	• Identify and describe the properties of 2-D shapes, including the number of sides and line 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 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] • **Compare and sort objects, numbers and 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 with increasing accuracy • Recognise angles as a property of shape and associate angles with turning • **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** Identify horizontal, vertical, perpendicular and parallel lines in relation to other lines

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Statistics (Data)	• **Sort objects, numbers and shapes to a given criterion and their own** • **Present and interpret data in block diagrams using practical equipment** • **Ask and answer simple questions by counting the number of objects in each category** **Ask and answer questions by comparing categorical data**	• 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 one-step and two-step questions such as 'How many more?' and 'How many fewer?' using information presented in scaled bar charts and pictograms and tables

	Year 3		
	Previous year's content	Year 3 content	Subsequent year's content
Number and Place Value	• **Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward** • Read and write numbers to at least 100 in numerals and in words • Recognise the place value of each digit in a two-digit number (tens, ones) • Identify, represent and estimate numbers using different representations, including the number line • **Compare and order numbers from 0 up to 100; use <, > and = signs** **Use place value and number facts to solve problems**	• **Count from 0 in multiples of 4, 8, 50 and 100; finding 10 or 100 more or less than a given number** • Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) • Compare and order numbers up to 1000 • Identify, represent and estimate numbers using different representations • **Read and write numbers to at least 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 four-digit number (thousands, hundreds, tens, and ones) • **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 understand how, over time, the numeral system changed to include the concept of zero and place value.
Addition and Subtraction	• **Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting)** • Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot • **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, including:** - **a two-digit number and ones** - **a two-digit number and tens** - **two two-digit numbers** - **adding three one-digit numbers** • Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems **Solve problems with addition and subtraction including with missing numbers in various context.**	• **Add and subtract numbers mentally, including:** - **a three-digit number and ones** - **a three-digit number and tens** - **a three-digit number and hundreds** • Add and subtract numbers with up to three digits, using the efficient written methods of columnar addition and subtraction • Estimate the answer to a calculation and use inverse operations to check 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 efficient written methods of columnar addition and subtraction where appropriate • Estimate and use inverse operations to check answers to a calculation • **Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why**
Multiplication and Division	• **Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers**	• **Recall and use multiplication and division facts for the 3x's multiplication tables** • **Recall and use multiplication and division facts for the 4 x's multiplication tables**	• **Recall multiplication and division facts for multiplication tables up to 12 × 12**

MATHS PROGRESSION

	• Calculate mathematical statements for multiplication using repeated addition) and division within the multiplication tables and write them using the multiplication (×), 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 (including those with remainders), using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts**	• **Recall and use multiplication and division facts for the 8x's 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 efficient written methods** • solve problems involving multiplication and division, missing number problems, including integer scaling problems and correspondence problems in which n objects are connected to m objects	• 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 commutativity 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 and harder multiplication problems such as which n objects are connected to m objects.
Measures	• Choose and use appropriate standard units to estimate and* measure length/height in any direction (m/cm); *mass (kg/g);* temperature (°C);* capacity and volume (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels • Compare and order lengths, mass, volume/capacity and record the results using >, < and = • Recognise and use symbols for pounds (£) and pence (p) • Combine amounts to make a particular value • Find different combinations of coins that equal the same amounts of money • Compare and sequence intervals of time • 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 • Know the number of minutes in an hour and the number of hours in a day • **Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change and measures (including time)** Recognise 3-D shapes in different orientations; and describe them with increasing accuracy	• **measure, compare, add and subtract: lengths (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 from I to XII, 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, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight • 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 • Know the number of seconds in a minute and the number of days in each month, year and leap year Compare durations of events, for example to calculate the time taken by particular events or tasks	• **Convert between different units of measure (e.g. kilometre to metre; hour to minute)** • Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres • Estimate, compare and calculate different measures, including money in pounds and pence • Find the area of rectilinear shapes by counting • 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
Fractions with decimals	• **Recognise, find, name and write fractions 1/2 1/4 2/4 3/4 and of a length, shape, set of objects or quantity** Write simple fractions for example, 1/2 of 6 = 3 and recognise equivalents of 1/2 + 1/4	• **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** • **Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators** • Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators • **Recognise and show, using diagrams, equivalent fractions with small denominators** • Add and subtract fractions with the same denominator within one whole (e.g. 5/7 + 1/7 = 6/7) • Compare and order unit fractions with the same denominator Solve problems that involve all of the above	• **Count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten** • 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 • Identify, **name and write and know common equivalent fractions of a given fraction,** including tenths and hundredths • 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 1/4; 1/2; 3/4

MATHS PROGRESSION

			• 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 units, tenths and hundredths • **Round decimals with one decimal place to the nearest whole number** • Compare numbers with the same number of decimal places up to two decimal places • **Solve simple measure and money problems involving fractions and decimals to two decimal places**
Position and Direction	• Order/arrange combinations of mathematical objects in patterns/sequences **Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)**	•	• Describe positions on a 2-D grid as coordinates in the first quadrant • Describe movements between positions as translations of a given unit to the left/right and up/down **Plot specified points and draw sides to complete a given polygon**
Shape	• Identify and describe the properties of 2-D shapes, including the number of sides and line 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 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] **Compare and sort objects, numbers and 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 with increasing accuracy • Recognise angles as a property of shape and associate angles with turning • **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** • Identify horizontal, vertical, perpendicular and parallel lines in relation to other 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 a specific line of symmetry
Statistics (Data)	• 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 one-step and two-step questions such as 'How many more?' and 'How many fewer?' using information presented in scaled bar charts and pictograms and tables	• Interpret and present discrete data using bar charts and continuous data using line graphs **Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and simple line graphs**

Year 4

	Previous year's content	Year 4 content	Subsequent year's content
Number and Place Value	• **Count from 0 in multiples of 4, 8, 50 and 100; finding 10 or 100 more or less than a given number**	• **Count in multiples of 6, 7, 9, 25 and 1000** • Find 1000 more or less than a given number	• **Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit**

MATHS PROGRESSION

	• Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) • Compare and order numbers up to 1000 • Identify, represent and estimate numbers using different representations • **Read and write numbers to at least 1000 in numerals and in words** **Solve number problems and practical problems involving these ideas**	• **Count backwards through zero to include negative numbers** • Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) • **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 understand how, over time, the numeral system changed to include the concept of zero and place value.	• Count forwards or 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 through zero** • Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000 • Solve number problems and practical problems that involve all of the above • Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals
Addition and Subtraction	• **Add and subtract numbers mentally, including:** - **a three-digit number and ones** - **a three-digit number and tens** - **a three-digit number and hundreds** • Add and subtract numbers with up to three digits, using the efficient written methods of columnar addition and subtraction • Estimate the answer to a calculation and use inverse operations to check 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 efficient written methods of columnar addition and subtraction where appropriate • Estimate and use inverse operations to check answers to a calculation **Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why**	• **Add and subtract whole numbers with more than 4 digits.** • Add and subtract whole numbers with more than 4 digits, including using efficient written methods (columnar addition and subtraction) • **Add and subtract numbers mentally with increasingly large numbers** • Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
Multiplication and Division	• **Recall and use multiplication and division facts for the 3x's multiplication tables** • **Recall and use multiplication and division facts for the 4 x's multiplication tables** • **Recall and use multiplication and division facts for the 8x's 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 efficient written methods** • solve problems involving multiplication and division, missing number problems, including integer scaling problems and correspondence problems in which n objects are connected to m objects	• **Recall multiplication and division facts for multiplication tables up to 12 × 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 commutativity 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 and harder multiplication problems such as which n objects are connected to m objects.	• **Identify multiples and factors, including finding all factor pairs and common factors.** • **Solve problems involving multiplication and division where larger numbers are used by decomposing them into their factors** • 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 an efficient 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 efficient 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 squared² and cubed³ • **Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign**

MATHS PROGRESSION

			• Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates
Measures	• **measure, compare, add and subtract: lengths (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 from I to XII, 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, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight • 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 • Know the number of seconds in a minute and the number of days in each month, year and leap year Compare durations of events, for example to calculate the time taken by particular events or tasks	• **Convert between different units of measure (e.g. kilometre to metre; hour to minute)** • Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres • Estimate, compare and calculate different measures, including money in pounds and pence • Find the area of rectilinear shapes by counting • 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 measure (e.g. kilometre and metre; metre and centimetre; centimetre and millimetre; kilogram and gram; litre and millilitre)** • Understand and use basic equivalences between metric and common imperial units and express them in approximate terms • **Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres** • **Calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm²) and square metres (m²)** • Estimate the area of irregular shapes • Recognise and estimate volume (e.g. using 1 cm³ blocks to build cubes and cuboids) and capacity (e.g. using water) • Solve problems involving converting between units of time • Solve problems involving all 4 operations and units of measure (e.g. length, mass, volume, money) using decimal notation including scaling.
Fractions with decimals and percentages	• **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** • **Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators** • Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators • **Recognise and show, using diagrams, equivalent fractions with small denominators** • Add and subtract fractions with the same denominator within one whole (e.g. 5/7 + 1/7 = 6/7) • Compare and order unit fractions with the same denominator Solve problems that involve all of the above	• **Count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten** • 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 • Identify, **name and write and know common equivalent fractions of a given fraction,** including tenths and hundredths • 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 1/4; 1/2; 3/4 • 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 units, tenths and hundredths • **Round decimals with one decimal place to the nearest whole number** • Compare numbers with the same number of decimal places up to two decimal places • **Solve simple measure and money problems involving fractions and decimals to two decimal places**	• **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 + hundredths. • Recognise mixed numbers and improper fractions and convert from one form to the other • Add and subtract fractions with the same denominator and related fractions; write mathematical statements >1 as a mixed number (e.g. 2/5 + 4/5 = 6/5 = 11/5) • Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams • **Read and write decimal numbers as fractions (e.g. 0.71 = 71/100)** • 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 hundred, and as a decimal fraction • **Solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those with a denominator of a multiple of 10 or 25**

MATHS PROGRESSION

Position and Direction		• Describe positions on a 2-D grid as coordinates in the first quadrant • Describe movements between positions as translations of a given unit to the left/right and up/down • **Plot specified points and draw sides to complete a given polygon**	• 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.
Shape	• Draw 2-D shapes and make 3-D shapes using modelling materials; • Recognise 3-D shapes in different orientations; and describe them with increasing accuracy • Recognise angles as a property of shape and associate angles with turning • **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** Identify horizontal, vertical, perpendicular and parallel lines in relation to other 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 a specific line of symmetry	• Identify 3-D shapes, including cubes and cuboids, from 2-D representations • know angles are measured in degrees; estimate and measure them • **Draw given angles, measuring them in degrees (°)** • Identify: multiples of 90° • Identify: angles at a point on a straight line and ½ a turn (total 180°) • Identify: angles at a point and one whole turn (total 360°) • Use the properties of a rectangle (including squares) to deduce related facts such as missing lengths and angles. • **Distinguish between regular and irregular polygons based on reasoning about equal sides and angles**
Statistics	• **Interpret and present data using bar charts, pictograms and tables** Solve one-step and two-step questions such as 'How many more?' and 'How many fewer?' using information presented in scaled bar charts and pictograms and tables	• Interpret and present discrete data using bar charts and continuous data using line graphs • **Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and simple line graphs**	• Solve comparison, sum and difference problems using information presented in line graphs **Complete, read and interpret information in tables, including timetables**

	Year 5		
	Previous year's content	Year 5 content	Subsequent year's content
Number and Place Value	• **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 four-digit number (thousands, hundreds, tens, and ones) • **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 understand how, 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 or 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 through zero** • Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000 • Solve number problems and practical problems that involve all of the above Read Roman numerals to 1,000 (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 context, and calculate intervals across zero** • Solve number and practical problems that involve all of the above.
Addition and Subtraction	• Add and subtract numbers with up to 4 digits using the efficient written methods of columnar addition and subtraction where appropriate	• **Add and subtract whole numbers with more than 4 digits.**	• Use their knowledge of the order of operations to carry out calculations involving the four operations

MATHS PROGRESSION

	• Estimate and use inverse operations to check answers to a calculation **Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why**	• Add and subtract whole numbers with more than 4 digits, including using efficient written methods (columnar addition and subtraction) • **Add and subtract numbers mentally with increasingly large numbers** • Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	• **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.** • Use formal methods to solve multi-step problems involving all 4 operations
Multiplication and Division	• **Recall multiplication and division facts for multiplication tables up to 12 × 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 commutativity 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 and harder multiplication problems such as which n objects are connected to m objects.	• **Identify multiples and factors, including finding all factor pairs and common factors.** • **Solve problems involving multiplication and division where larger numbers are used by decomposing them into their factors** • 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 an efficient 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 efficient 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 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 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, 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 • **Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.** • Calculate mentally, using efficient strategies such as manipulating expressions using commutative and distributive properties to simplify the calculation E.g.20 × 7 × 5 = 20 × 5 × 7 = 100 × 7 = 700
Measures	• **Convert between different units of measure (e.g. kilometre to metre; hour to minute)** • Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres • Estimate, compare and calculate different measures, including money in pounds and pence • Find the area of rectilinear shapes by counting • 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 measure (e.g. kilometre and metre; metre and centimetre; centimetre and millimetre; kilogram and gram; litre and millilitre)** • Understand and use basic equivalences between metric and common imperial units and express them in approximate terms • **Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres** • **Calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm^2) and square metres (m^2)** • Estimate the area of irregular shapes • Recognise and estimate volume (e.g. using 1 cm^3 blocks to build cubes and cuboids) and capacity (e.g. using water)	• 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** • 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

MATHS PROGRESSION

		• Solve problems involving converting between units of time Solve problems involving all 4 operations and units of measure (e.g. length, mass, volume, money) using decimal notation including scaling.	• Calculate, estimate and compare volume of cubes and cuboids using standard units, incl cm³/m² extending to other units • Calculate with measures E.g. calculate length of a bus journey given start and end times; convert 0.05km into m and then into cm
Fractions with decimals and percentages	• **Count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten** • 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 • Identify, **name and write and know common equivalent fractions of a given fraction,** including tenths and hundredths • 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 1/4; 1/2; 3/4 • 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 units, tenths and hundredths • **Round decimals with one decimal place to the nearest whole number** • Compare numbers with the same number of decimal places up to two decimal places • **Solve simple measure and money problems involving fractions and decimals to two decimal places**	• **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 + hundredths. • Recognise mixed numbers and improper fractions and convert from one form to the other • Add and subtract fractions with the same denominator and related fractions; write mathematical statements >1 as a mixed number (e.g. 2/5 + 4/5 = 6/5 = 11/5) • Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams • **Read and write decimal numbers as fractions (e.g. 0.71 = 71/100)** • 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 hundred, and as a decimal fraction • **Solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those with a denominator of a multiple of 10 or 25**	• **Use common factors to simplify fractions; use common multiples to express fractions in the same denomination** • **Compare and order fractions, including fractions > 1** • **Add and subtract fractions with different denominators 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** • **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** • **Multiply one-digit numbers with up to two decimal places by whole numbers** • **Use written division methods in cases where the answer has up to two 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 different context.** • **Associate a fraction with division and calculate decimal fraction equivalents** • **Recognise the relationship between fractions, decimals and percentages and can express them as equivalent quantities** • **Can calculate using fractions, decimals or percentages**
Position and Direction	• Describe positions on a 2-D grid as coordinates in the first quadrant • Describe movements between positions as translations of a given unit to the left/right and up/down **Plot specified points and draw sides to complete a given polygon**	• 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.	• **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
Shape	• **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**	• Identify 3-D shapes, including cubes and cuboids, from 2-D representations • know angles are measured in degrees; estimate and measure them • **Draw given angles, measuring them in degrees (°)** • Identify: multiples of 90° • Identify: angles at a point on a straight line and ½ a turn (total 180°)	• 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**

MATHS PROGRESSION

	Complete a simple symmetric figure with respect to a specific line of symmetry	• Identify: angles at a point and one whole turn (total 360°) • Use the properties of a rectangle (including squares) to deduce related facts such as missing lengths and angles. • **Distinguish between regular and irregular polygons based on reasoning about equal sides and angles**	• Illustrate and name parts of circles, including radius, diameter and circumference and know that 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. • Use mathematical reasoning to find missing angles E.g. the missing angle in an isosceles triangle when one of the angles is given; the missing angle in a more complex diagram using knowledge about angles at a point and vertically opposite angles
Statistics	• Interpret and present discrete data using bar charts and continuous data using line graphs **Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and simple line graphs**	• Solve comparison, sum and difference problems using information presented in line graphs • **Complete, read and interpret information in tables, including timetables**	• **Interpret and construct pie charts and line graphs and use these to solve problems** **Calculate and interpret the mean as an average**.

Year 6

	Previous year's content	Year 6 content	Subsequent year's content
Number and Place Value	• **Read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit** • Count forwards or 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 through zero** • Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000 • Solve number problems and practical problems that involve all of the above Read Roman numerals to 1,000 (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 context, and calculate intervals across zero** Solve number and practical problems that involve all of the above.	
Addition and Subtraction	• **Add and subtract whole numbers with more than 4 digits.** • Add and subtract whole numbers with more than 4 digits, including using efficient written methods (columnar addition and subtraction) • **Add and subtract numbers mentally with increasingly large numbers** • Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	• 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.** Use formal methods to solve multi-step problems involving all 4 operations	
Multiplication and Division	• **Identify multiples and factors, including finding all factor pairs and common factors.** • **Solve problems involving multiplication and division where larger numbers are used by decomposing them into their factors**	• 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	

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	• 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 an efficient 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 efficient 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 squared² and cubed³ • **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	• 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, 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 • **Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.** Calculate mentally, using efficient strategies such as manipulating expressions using commutative and distributive properties to simplify the calculation E.g.20 × 7 × 5 = 20 × 5 × 7 = 100 × 7 = 700	
Measures	• **Convert between different units of measure (e.g. kilometre and metre; metre and centimetre; centimetre and millimetre; kilogram and gram; litre and millilitre)** • Understand and use basic equivalences between metric and common imperial units and express them in approximate terms • **Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres** • **Calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm²) and square metres (m²)** • Estimate the area of irregular shapes • Recognise and estimate volume (e.g. using 1 cm³ blocks to build cubes and cuboids) and capacity (e.g. using water) • Solve problems involving converting between units of time Solve problems involving all 4 operations and units of measure (e.g. length, mass, volume, money) using decimal notation including scaling.	• 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** • 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, incl cm³/m² extending to other units Calculate with measures E.g. calculate length of a bus journey given start and end times; convert 0.05km into m and then into cm	
Fractions with decimals and percentages	• **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 + hundredths. • Recognise mixed numbers and improper fractions and convert from one form to the other • Add and subtract fractions with the same denominator and related fractions; write mathematical statements >1 as a mixed number (e.g. 2/5 + 4/5 = 6/5 = 11/5) • Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	• **Use common factors to simplify fractions; use common multiples to express fractions in the same denomination** • **Compare and order fractions, including fractions > 1** • **Add and subtract fractions with different denominators 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**	

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	• **Read and write decimal numbers as fractions (e.g. 0.71 = 71/100)** • 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 hundred, and as a decimal fraction • **Solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those with a denominator of a multiple of 10 or 25**	• **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** • **Multiply one-digit numbers with up to two decimal places by whole numbers** • **Use written division methods in cases where the answer has up to two 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 different context.** • **Associate a fraction with division and calculate decimal fraction equivalents** • **Recognise the relationship between fractions, decimals and percentages and can express them as equivalent quantities** **Can calculate using fractions, decimals or percentages**	
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.	• **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	
Shape	• Identify 3-D shapes, including cubes and cuboids, from 2-D representations • know angles are measured in degrees; estimate and measure them • **Draw given angles, measuring them in degrees (°)** • Identify: multiples of 90° • Identify: angles at a point on a straight line and ½ a turn (total 180°) • Identify: angles at a point and one whole turn (total 360°) • Use the properties of a rectangle (including squares) to deduce related facts such as missing lengths and angles. **Distinguish between regular and irregular polygons based on reasoning about equal sides and angles**	• 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 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. • Use mathematical reasoning to find missing angles E.g. the missing angle in an isosceles triangle when one of the angles is given; the missing angle in a more complex diagram using knowledge about angles at a point and vertically opposite angles	
Statistics	• Solve comparison, sum and difference problems using information presented in line graphs **Complete, read and interpret information in tables, including timetables**	• **Interpret and construct pie charts and line graphs and use these to solve problems** • **Calculate and interpret the mean as an average**.	
Algebra		• **Use simple formulae to solve problems E.g. Perimeter of a rectangle or area of a triangle** • Generate and describe linear number sequences • Express missing number problems algebraically • Find pairs of numbers that satisfy an equation with two unknowns	

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		• Enumerate possibilities of combinations of two variables.	
Ratio and Proportion		• solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. • **Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison** • Solve problems involving similar shapes where the scale factor is known or can be found • **Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.**	

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