OAKLANDS PRIMARY ACADEMY – MATHEMATICS PROGRESSION MAP

OUR CORE VALUES

*We want all of our children to **BE…***

Resilient	*Respectful*	*Resourceful*	*Responsible*	*Risk-taking*

CULTURAL CAPITAL

Oaklands Primary Academy is committed to ensuring all of our pupils are equipped with the knowledge and cultural capital they need to succeed in life.
Our curriculum and provision ensure that all our pupils acquire the essential knowledge they need to be educated citizens. We ensure that we are introducing them to the best that has been thought and said, and it is our mission to engender an appreciation of human creativity and achievement. We want all of our pupils to leave Oaklands, by the end of KS2, with aspirational goals for their future, without any limitations.

We have carefully considered four domains for promoting and improving each child's level of cultural capital, based on research by Bourdieu (1986). We believe that the more cultural capital a child has, the more likely they are to succeed in life and reach their potential.

KNOWLEDGE (what we know)	**SKILLS** (what we do)	**APPRECIATION** (what we value)	**ASPIRATION** (who we want to be)

INTENT	IMPLEMENTATION	IMPACT	PROGRESSION
We intend for all pupils to become fluent in the fundamentals of mathematics, including through varied and frequent practise with increasingly complex problems over time so that pupils develop conceptual understanding and the ability to recall and apply knowledge accurately and rapidly. We intend for all pupils to reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and	All year groups and classes follow the White Rose scheme for learning which is based on the National Curriculum. Lessons may be personalised to address the individual needs and requirements for a class but coverage and progression of skills/knowledge is maintained. We use a range of other planning resources such as the NCETM and NRICH to enrich our children's maths diet. Children are given opportunities to deepen their	Through discussions and feedback, children talk enthusiastically about their maths lessons and speak about how much they love learning about maths. They can articulate the context in which maths is being taught and relate this to real life purposes. Children show confidence and believe they can learn about a new maths area and apply the knowledge and skills they already have. Having the freedom to choose the activity and level of	All pupils work on the same core tasks with accompanying materials and support. They are usually split into Fluency, Reasoning and Problem-solving. Those that grasp content and concepts quickly can go on to work on the 'stretch and challenge' extensions within a task. This will require them to go into greater depth, for example solving problem- solving investigations, NRICH investigations and Maths Mastery questions that require

developing an argument, justification or proof using mathematical language. We intend for all pupils to solve problems by applying their mathematical to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions. We intend for all children to have secure long term, deep and adaptable understanding of maths which they can apply in different contexts. All children are expected to succeed and make progress from their starting points. Modelling Teachers teach the skills needed to succeed providing examples of good practice and having high expectations. They also tailor their teaching to suit the needs of the children, whether they are visualisers, describers or experimenters. A vocabulary rich environment We intend to create a vocabulary rich environment, where talk for maths is a key learning tool for all pupils. Preteaching key vocabulary is a driver for pupil understanding and develops the confidence of pupils to explain mathematically. Misconceptions around mathematical vocabulary is always addressed to ensure all children are using the correct terminology. Constructivist approach-Pattern and connection identification Children are taught that learning occurs when	understanding by completing 'next step' tasks that addresses a misconception, consolidates or challenges children In order to advance individual children's maths skills in school and at home, we utilise Times Tables Rock Stars (TTRS) for multiplication practise, application and consolidation. Children are involved in competitions across the school. They use the application once a week at school and as homework. These may take many forms, for example, arithmetic, specific times tables or several questions about a mixture of maths topics. While the class are solving the questions, the staff are able to support children with consolidation or post-teaching to fill in any gaps to ensure they are confident with skills. We implement our approach through high quality teaching delivering appropriately challenging work for all children. To support us, we have a range of concrete resources in classrooms, such as Numicon, Base10 and counters. When children have grasped a concept using concrete equipment, images and diagrams are used, for example bar model, prior to moving to abstract questions. Abstract maths relies on the children understanding a concept thoroughly and being able to use their knowledge and understanding to answer and solve maths without equipment or images. Concrete: Children should have the	difficulty, has allowed them to self-select effectively. Pupils know how and why maths is used in the outside world and in the workplace, they know about different ways that maths can be used to support their future potential. Mathematical concepts or skills are mastered when children can show it in multiple ways using the mathematical language to explain their ideas and can independently apply the concept to new problems in unfamiliar situations. Children demonstrate a quick recall of facts and procedures. This includes recollection of the times tables. Pupils use acquired vocabulary in maths lessons they have the skills to use methods independently and show resilience when tackling problems. The flexibility to fluidity to move between different contexts and representations of maths. Children show a high level of pride in the presentation and understanding of the work. The chance to develop the ability to recognise relationships and make connections in maths lessons. Teachers plan a range of opportunities to use maths inside and outside school. At the end of each year we expect the children to have achieved Age Related Expectations (ARE) for their year group. Some children will have progressed further and achieved greater depth (GD). Children who have gaps in their knowledge receive appropriate support and interventions throughout	discussions and reasoning using mathematical vocabulary. Those that are not sufficiently confident may be targeted for extra support. Knowledge and skills are introduced then revisited in different units and in different contexts. This enables progression to be identified, planned for, developed and monitored. Progress in developing skills and understanding concepts is achieved through meaningful connections with areas of mathematical knowledge

actively involved in a process of meaning and knowledge construction as opposed to passively receiving information. We value collaboration, integration, reflection and promote inquiry-based learning. All children will have opportunities to identify patterns or connections in their maths lesson. They can use this to predict and reason and to also develop their own patterns/links in maths and other subjects. Showcasing Female Mathematicians Children are exposed to female as well as male mathematicians in order to inspire and showcase brilliant role model in a predominately male field.	opportunity to use concrete objects and manipulatives to help them understand what they are doing. Pictorial: Alongside this, children should use pictorial representations. These representations can then be used to help reason and solve problems. Abstract: Both concrete and pictorial representations should support children's understanding of abstract methods. Maths is taught across the curriculum ensuring that skills taught in these lessons are applied in other subjects. For example, Maths Week enables children to apply their maths skills in different contexts. Summative assessments are completed at the end of each term, where their data is input onto a gap analysis spreadsheet that clearly highlight areas the children need to work on which inform planning and teaching. They are also used in pupil progress discussions, Parents' Evening/Parents' Consultation Day and end of year reports. The assessments allow us to ensure we are providing excellent provision for every child.	the year. All children secure long-term, deep and adaptable understanding of maths which they can apply in different contexts.	

		Place Value					
	EYFS **3-4 Year-Olds** **Reception** **Early Learning Goal**	**Year 1**	**YEAR 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Counting	Recite numbers past 5. Say one number name for each item in order: 1, 2, 3, 4, 5. Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle') Count objects, actions and sounds. Count beyond ten. ELG Mathematics Numerical Patterns Verbally count beyond 20, recognising the pattern of the counting system. Have a deep understanding of number to 10, including the composition of each number. Subitise (recognise quantities without counting) up to 5.	• count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number • Count numbers to 100 in numerals; count in multiples of twos, fives and tens	• count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward	• count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number	• count in multiples of 6, 7, 9, 25 and 1000 • count backwards through zero to include negative numbers	• count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 • count forwards and backwards with positive and negative whole numbers, including through zero	

Representing	Develop fast recognition of up to 3 objects, without having to count them individually ('subitising') Show 'finger numbers' up to 5 Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5. Experiment with their own symbols and marks as well as numerals. Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5 Experiment with their own symbols and marks as well as numerals Substitute Link the number symbol (numeral) with its cardinal number value Have a deep understanding of number to 10, including the composition of each number. Subitise (recognise quantities without counting) up	identify and represent numbers using objects and pictorial representations read and write numbers to 100 in numerals read and write numbers from 1 to 20 in numerals and words	• read and write numbers to at least 100 in numerals and in words • identify, represent and estimate numbers using different representations, including the number line	• identify, represent and estimate numbers using different representations • read and write numbers up to 1000 in numerals and in words	• identify, represent and estimate numbers using different representations • 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 • 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

	to 5 Have a deep understanding of number to 10, including the composition of each number. Subitise (recognise quantities without counting) up to 5.						
Using and comparing	Compare quantities using language: 'more than', 'fewer than' Creates their own spatial patterns showing some organisation or regularity Understand the 'one more than/one less than' relationship between consecutive numbers Explore the composition of numbers to 10. Compare numbers Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity. Have a deep understanding of numbers to 10, including the composition of each number	• given a number, identify one more and one less	• recognise the place value of each digit in a two-digit number (tens, ones) • compare and order numbers from 0 up to 100; use <, > and = signs	• recognise the place value of each digit in a three-digit number (hundreds, tens, ones) • compare and order numbers up to 1000	• find 1000 more or less than a given number • recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) • order and compare numbers beyond 1000	• (read, write) order and compare numbers to at least 1 000 000 and determine the value of each digit	• (read, write) order and compare numbers to at least 1 000 000 and determine the value of each digit

Problems/ Rounding	Solve real world mathematical problems with numbers up to 5.		• use place value and number facts to solve problems	• solve number problems and practical problems involving these ideas	• 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	• interpret negative numbers in context • 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	• 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					
	EYFS **3-4 Year-Olds** **Reception** **Early Learning Goal**	**Year 1**	**YEAR 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Recall, represent, use	Automatically recall number bonds for numbers 0-5 and some to 10. Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number	Read write and interpret mathematical statements involving additions, subtraction and equals signs Represent and use number bonds and related subtraction facts within 20	Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts to 100 Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot Recognise and use	Estimate the answer to a calculation and use inverse operations to check answers	Estimate and use inverse operations to check answers to a calculation	Use rounding to check answers to calculations and determine, in the context of a problem, level of accuracy	

	bonds to 10, including double facts.		the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems To recall all numbers bonds to and within 10 and use these to reason with and calculate bonds within 20, recognising other associated additive relationships				
Calculations		• add and subtract one-digit and two digit numbers to 20, including zero	• 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	• 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 formal written methods of columnar addition and subtraction	• add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate	• 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	• perform mental calculations, including with mixed operations and large numbers • use their knowledge of the order of operations to carry out calculations involving the four operations

Problems	Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed evenly	• solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = c – 9	• solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures Ø applying their increasing knowledge of mental and written methods	• solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	• solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	• solve addition and subtraction multistep problems in contexts, deciding which operations and methods to use and why • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	• solve addition and subtraction multistep problems in contexts, deciding which operations and methods to use and why

	Multiplication and Division					
	Year 1	**YEAR 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Recall/Use		• recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers • show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot	• recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	• 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	• identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers • establish whether a number up to 100 is prime and recall prime numbers up to 19 • recognise and use square numbers and	• identify common factors, common multiples and prime numbers • use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

					cube numbers, and the notation for squared (2) and cubed (3)	
Calculations		• calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs	• write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for twodigit numbers times one-digit numbers, using mental and progressing to formal written methods	multiply two-digit and three-digit numbers by a onedigit number using formal written layout	• multiply numbers up to 4 digits by a one- or twodigit number using a formal written method, including long multiplication for two-digit numbers • multiply and divide numbers mentally drawing upon known facts • divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context • multiply and divide whole numbers and those involving decimals by 10, 100 and 1000	• multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication • divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context • divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context • perform mental

						calculations, including with mixed operations and large numbers
Problems	• 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	• solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	• solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects	• solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects	• solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes • solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates	• solve problems involving addition, subtraction, multiplication and division
Combined					• solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	• use their knowledge of the order of operations to carry out calculations involving the four operations

	Fractions					
	Year 1	**YEAR 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Recognise and write	• recognise, find and name a half as one of two equal parts of an object, shape or quantity • recognise, find and name a quarter as one of four equal parts of an object, shape or quantity	• recognise, find, name and write fractions ½, 1/3, ¼, and ¾ of an amount of length, shape, set of objects or quantity	• 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	• count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.	• identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths • recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number	
Compare		Recognise the equivalence of ½ and 2/4	• recognise and show, using diagrams, equivalent fractions with small denominators • compare and order unit fractions, and fractions with the same denominators	• recognise and show, using diagrams, families of common equivalent fractions	• compare and order fractions whose denominators are all multiples of the same number	• use common factors to simplify fractions; use common multiples to express fractions in the same denomination • compare and order fractions, including fractions > 1
Calculations		write simple fractions e.g. ½ of 6 = 3	add and subtract fractions with the same denominator within one whole	• add and subtract fractions with the same denominator	• 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	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

					by materials and diagrams	its simplest form divide proper fractions by whole numbers
Solve problems			• solve problems that involve all of the above	• 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		

	Decimals					
	Year 1	**YEAR 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Recognise, write, compare				• recognise and write decimal equivalents of any number of tenths or hundredths • recognise and write decimal equivalents to 1/4, 1/2, 3/4 • 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	• read and write decimal numbers as fractions [for example, 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	• identify the value of each digit in numbers given to three decimal places
Fractions, decimals and percentages				• solve simple measure and money problems involving fractions and decimals to two decimal places	• recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal • solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25	• associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8) • recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

	Ratio and proportion, algebra					
	Year 1	**YEAR 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Ration 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/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
Algebra	• solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = c – 9	• recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems	• solve problems, including missing number problems	• solve problems, including missing number problems	• solve problems, including missing number problems	• use simple formulae • generate and describe linear number sequences • express missing number problems algebraically • find pairs of numbers that satisfy an equation with two unknowns • enumerate possibilities of combinations of two variables

		Measurement					
	EYFS **3-4 Year-Olds** **Reception** **Early Learning Goal**	**Year 1**	**YEAR 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Using measures	Make comparisons between objects relating to size, length, weight and capacity. Compare length, weight and capacity	• compare, describe and solve practical problems for: Ø lengths and heights Ø mass/weight Ø capacity and volume Ø time • measure and begin to record the following: Ø lengths and heights Ø mass/weight Ø capacity and volume Ø time (hours, minutes, seconds)	• choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (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 =	• measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)	• Convert between different units of measure [for example, kilometre to metre; hour to minute] • estimate, compare and calculate different measures	• convert between different units of metric measure • understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints • use all four operations to solve problems involving measure [for example, 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 3 d.p. where appropriate • use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 d.p. • convert between miles and kilometres
Money		• recognise and know the value of different denominations of coins and notes	• 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	• add and subtract amounts of money to give change, using both £ and p in practical contexts	• estimate, compare and calculate different measures, including money in pounds and pence	• use all four operations to solve problems involving measure [for example, money]	• use all four operations to solve problems involving measure [for example, money]

			money • solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change				
Time	Begin to describe a sequence of events, real or fictional, using words, such as 'first', 'then…	• sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] • recognise and use language relating to dates, including days of the week, weeks, months and years • tell the time to the hour and half past the hour and draw the hands on a clock face to show these times	• 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	• 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 and hours; use vocabulary such as 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	• 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	• solve problems involving converting between units of time	• use, read, write and convert between standard units, converting measurements of time from a smaller unit of measure to a larger unit, and vice versa

				leap year • compare durations of events [for example to calculate the time taken by particular events or tasks]			
Perimeter, area, volume				• measure the perimeter of simple 2-D shapes	• measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres • find the area of rectilinear shapes by counting squares	• measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres • calculate and compare the area of rectangles (including squares) and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes • estimate volume [for example, using blocks to build cuboids] and capacity [for example, using water]	• recognise that shapes with the same areas can have different perimeters and vice versa • recognise when it is possible to use formulae for area and volume of shapes • calculate the area of parallelograms and triangles • calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units

		Geometry					
	EYFS 3-4 Year-Olds Reception Early Learning Goal	**Year 1**	**YEAR 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
2-D shapes	Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners', 'straight', 'flat', 'round' Select shapes appropriately: flat surfaces for a building, a triangular pattern for a roof, etc. Combine shapes to make new ones – an arch, a bigger triangle, etc Compose and decompose shapes so that children can recognise a shape can have other shapes within it, just as numbers can Select, rotate and manipulate shapes in order to develop spatial reasoning skills	• recognise and name common 2-D shapes [for example, rectangles (including squares), circles and triangles]	• identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line • 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 common 2-D shapes and everyday objects	• draw 2-D shapes	• compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes • identify lines of symmetry in 2-D shapes presented in different orientations	• distinguish between regular and irregular polygons based on reasoning about equal sides and angles. • use the properties of rectangles to deduce related facts and find missing lengths and angles	• draw 2-D shapes using given dimensions and angles • compare and classify geometric shapes based on their properties and sizes • illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius

3-D shapes		• recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]	• recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres] • compare and sort common 3-D shapes and everyday objects	• recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres] • compare and sort common 3-D shapes and everyday objects		• recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres] • compare and sort common 3-D shapes and everyday objects	• recognise, describe and build simple 3-D shapes, including making nets
Angles and lines				• recognise angles as a property of shape or a description of a turn • 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 and vertical lines and pairs of	• 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	• know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles • draw given angles, and measure them in degrees • identify: Ø angles at a point and one whole turn (total 360°) Ø angles at a point on a straight line and ½ a turn (total 180°) Ø other multiples of 90°	• find unknown angles in any triangles, quadrilaterals, and regular polygons • recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles

				perpendicular and parallel lines			
Position and direction	Understand position through words alone – for example, "The bag is under the table," – with no pointing. Describe a familiar route Discuss routes and locations, using words like 'in front of' and 'behind'. Talk about and identify the patterns around them. For example, stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs', etc. Extend and create ABAB patterns – stick, leaf, stick, leaf. Notice and correct an error in a repeating pattern. Continue, copy and create repeating patterns. Draw information from a simple map.	• 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 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 anticlockwise)		• 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

	Statistics						
	EYFS 3-4 Year-Olds Reception Early Learning Goal	**Year 1**	**YEAR 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Present and interpret data	Experiment with their own symbols and marks, as well as numerals		• interpret and construct simple pictograms, tally charts, block diagrams and simple tables	• interpret and present data using bar charts, pictograms and tables	• interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs	• complete, read and interpret information in tables, including timetables	• interpret and construct pie charts and line graphs and use these to solve problems
Solve statistical problems			• 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	solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables	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	• calculate and interpret the mean as an average