KMA PROGRESSION IN MATHS

Date	Review Date	Subject Leader
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This document aims to give guidance on the progression of Mathematics knowledge and skills across the year groups.
We aim to develop the procedural fluency and conceptual understanding in maths alongside each other. We aim to do this through using concrete, pictorial and symbolic representations and making connections between them.

Mathematics is important in everyday life. It is an essential skill that all children will use daily throughout their lifetime. With this in mind, we endeavour to ensure that children develop a healthy and enthusiastic attitude towards mathematics. All staff teach to the Primary Maths National Curriculum, following the White Rose Maths Hub scheme of learning. In addition to the maths session, all children take part in a daily 15 minute arithmetic session (number bonds, multiplication and division facts, doubles and halves). Sessions show evidence of concrete-pictorial-abstract working where appropriate (see calculation policy) demonstrating progress through a concept. There should also be evidence of reasoning and problem solving within each objective for all groups of children.

Teaching Sequence in Maths

Revisit previous concepts learnt in maths (flashback 4)

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Review most recent learning (current topic)

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Key vocabulary and meaning

↓

Specific mathematical skills to be used

↓

Varied fluency

↓

Reasoning and problem solving

Note – order of steps may vary depending on session and/or individual groups of children.

Meta-cognition in Maths	
Activating prior knowledge	The teacher discusses with children the learnt strategies and content in previous reading lessons
Explicit strategy instruction	The teacher explicitly explains how to organise their ideas, with the emphasis on the cognitive strategy 'cause and effect' model' to help them organise and plan
Modelling of learned strategy	Use initial notes to model one part of the strategy
Memorisation of strategy	The teacher tests if pupils have memorised the key aspects of the strategy through questions and discussions
Guided practice	The teacher models one further example with the whole group, with pupils verbally contributing ideas
Independence practice	Pupils complete their own task
Structured reflection	The teacher encourages pupils to reflect on how appropriate the model was, how successfully they applied it, and how they might use it in the future.

CONTENTS

PLACE VALUE

PLACE VALUE VOCABULARY

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
• One more • One less • Place • Order • Number • Count • Numbers up to twenty • Number line • Part, Part whole • Pictorial • Answer • Equals • Read • Write	• Forwards • Backwards • Numerals • Words • Multiples • Equal to • More than • Less than • Fewer • Most • Least • Identify • Represent • Digit • Calculate • Odd • Even • Pattern • Numbers up to one hundred *Plus previous year groups*	• Ones/units • Tens • Two- digit • Estimate • Place Value • Solve • Problems • Greater than >
• Less than < • Nearest ten • Number facts • Partition • Count in steps • Zero • Compare • Value *Plus previous year groups*	• Hundreds • Three-digit • Ten more • One hundred more • Ten less • One hundred less • Roman numeral • Numbers up to one thousand *Plus previous year groups*	• Thousands • Four- digit • Negative number • One thousand more • One thousand less • Decimal • Decimal place • Rounding • Place holder • Nearest ten • Nearest hundred • Nearest thousand • Whole number • Integer • Tenths • Hundredths *Plus previous year groups*	• Ten thousands • Hundred thousands • Millions • Context • Steps of powers • Decimal equivalents • Two decimal places • Thousandths • Numbers up to one million *Plus previous year groups*	• Intervals across zero • Three decimal places • Hundredths Thousandths • Ten thousandths • Numbers up to ten million *Plus previous year groups*

COUNTING

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Count forwards and backwards to 20 from any given numbers Counting 1:1 correspondence to 10	Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. Count, read and write numbers to 100 in numerals, count in different multiple	Count in steps of 2, 3, and 5 from 0, and count in tens from any number, forward or 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	

	including ones, twos, fives and tens.				and negative whole numbers through zero.	

REPRESENT						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Recognise numbers to 20 Write digits 0-9 accurately Number sequences to 10	Identify and represent numbers using concrete objects and pictorial representations. Read and write numbers from 1 to 20 in numerals and words. Read and write numbers to 100 in numerals	Identify, represent and estimate numbers using different representations, including the number line. Read and write numbers to at least 100 in numerals and in words.	Identify, represent and estimate numbers using different representations. Read and write numbers to at least 1000 in numerals and in words.	Identify, represent and estimate numbers using different representations. Read Roman numerals to 100 (I to C) and know how 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.

USE PLACE VALUE AND COMPARE						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Say which number is one more or one less than a given number. Order numbers to 20	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 up to 10 000 000 and determine the value of each digit.

PROBLEMS AND ROUNDING						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
		Use place value and number facts to solve problems.	Solve number problems involving these ideas.	Round any number to the nearest 10, 100 or 1000. Solve number and practical problems that	Interpret negative numbers in context. Round any number up to 1 000 000 to the nearest 10,	Round any whole number to a required degree of accuracy.

				involve all of the above and with increasingly large positive numbers.	100, 1000, 10 000 and 100 000. Solve number problems and practical problems that involve all of the above.	Use negative numbers in context, and calculate intervals across zero. Solve number problems and practical problems that involve all of the above.

ADDITION AND SUBTRACTION

ADDITION AND SUBTRACTION VOCABULARY

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
• Add • Subtract • Addition • Subtraction • Adding • Subtracting • Number • Number line • Single digit • Count on • Count back • Answer • Doubling • Halving • Sharing • Numbers to twenty • Check • Number facts • Number bonds	• One step problem • Concrete object • Pictorial representation • Missing number • Problem • Read • Write • Interpret • Equals = • Signs • One-digit • Two-digit • Ones • Mental • Mentally *Plus previous year groups*	• Tens • Order • Inverse • Relationship • Calculation • Solve problems • Missing number problems • Quantities • Measures • Mental method • Method • Operation • Apply • Whole number • Related facts • Commutative *Plus previous year groups*	• Colum addition • Colum subtraction • Formal Written method • Three-digit number • Hundreds • Estimate • Number facts *Plus previous year groups*	• Two step problems • Context • Four-digit • Efficient method *Plus previous year groups*	• Increasingly large numbers • More than 4 digits • Rounding • Determine • Multi-step problems *Plus previous year groups*	• Estimation • Mixed operations *Plus previous year groups*

RECALL, REPRESENT, USE

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Know when adding is counting on – number getting bigger	Read, write and interpret mathematical statements involving addition (+),	Recall and use addition and subtraction facts to 20 fluently, and derive and	Estimate the answer to a calculation and use inverse	Estimate and use inverse operations to check answers to a calculation.	Use rounding to check answers to calculations and determine, in the	

Know subtraction is counting back – number is getting smaller	subtraction (-) and equals (=) signs. Represent and use number bonds and related subtraction facts within 20.	use related facts up 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 the inverse relationship between addition and subtraction and use this to check calculations and missing number problems.	operations to check answers.		context of a problem, levels of accuracy.	

CALCULATIONS						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Use quantities and objects, add and subtract two single-digit numbers and count on or back to find the answer.	Add and subtract one-digit and two-digit numbers to 20 (9 + 9, 18 - 9), 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 the efficient written methods of columnar 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, including using efficient 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.

SOLVE PROBLEMS						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Solve problems including doubling, halving and sharing.	Simple one-step problems that involve addition and subtraction, using concrete objects and pictorial representations,	Solve problems with addition and subtraction: -using concrete objects and pictorial representations, including	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	Solve addition and subtraction multi-step problems in contexts, deciding which operations	Solve addition and subtraction multi-step problems in contexts, deciding which operations

	and missing number problems such as 7= ?-9	those involving numbers, quantities and measures. -applying their increasing knowledge of mental and written methods.		and methods to use and why.	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.	and methods to use and why.

MULTIPLICATION AND DIVISION

MULTIPLICATION AND DIVISION VOCABULARY						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
• Share • Equal groups • Double • Half • Forwards • Backwards	• Multiples • Twos • Fives • Tens • Number • Multiply • Lots of • Groups of • Divide • Multiplication • Division • One step problem • Answer • Concrete object • Pictorial representation • Arrays • Count • Equals • Write *Plus previous year groups*	• Multiplication facts • Division facts • Divide • Shared • Multiplication tables • Multiply • Lots of • Groups of • Times • Odd numbers • Even numbers • Share • Equally • Repeated addition • Repeated subtraction • Calculate • Commutative *Plus previous year groups*	• Missing number problem • Estimate • Inverse • Formal written method • Mathematical statement • Recall • Integer • Two- digit • One- digit *Plus previous year groups*	• Derived facts • Factors • Factor pairs • Scaling problems • Three-digit *Plus previous year groups*	• Decimals • Four-digit • Long multiplication • Short division • Remainders • Context • Common factors • Common multiples • Prime numbers • Prime factors • Composite numbers • Square number • Cube number • Notation • Squares • Cubes *Plus previous year groups*	• Scale factor • Long division • Whole number remainders • Fractions • Rounding • Mixed operations *Plus previous year groups*

RECALL, REPRESENT, USE						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
		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 (non-prime) numbers. Establish whether a number up to 100 is prime and recall prime numbers up to 19. Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3).	Identify common factors, common multiples and prime numbers. Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.

CALCULATIONS						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Count forwards and backwards in 10s to 100 Count forwards and backwards in 2s to 20		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 two-digit numbers times one-digit numbers, using mental and progressing to efficient written methods.	Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.	Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers. Multiply and divide numbers mentally drawing upon known facts.	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

					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.	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.

SOLVE PROBLEMS						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Solve problems involving doubling	Solve simple one-step problems involving multiplication and division, calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.	Solve one-step 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 which 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 OPERATIONS						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
					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, DECIMALS AND PERCENTAGES

FRACTIONS. DECIMALS AND PERCENTAGES VOCABULARY						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
• Half • Equal parts	• Fraction • Quarter • One whole • Object • Shape • Quantity • Numerator • Denominator *Plus previous year groups*	• Simple fractions • Equivalent • Equivalence • Third • Unit fractions • Non- unit fractions • Numerator • Denominator *Plus previous year groups*	• Count • Tenths • Compare • Order • Add • Subtract *Plus previous year groups*	• Hundredths • Decimal • Decimal place • One decimal place • Two decimal places • Round decimals • Whole number • Common equivalent fractions • Decimal equivalents • Dividing • Ones • Tenths • Hundredths • Simple measure • Money problems	• Thousandths • Multiples • Three decimal places • Percent • Number of parts per hundred • Percentages • Decimal fraction • Mixed numbers • Improper fraction • Proper fraction • Convert • Mathematical statements • Multiply • Percentage and decimal equivalents	• Common factors • Common multiples • Decimal fraction equivalents • Simplest form *Plus previous year groups*

				Plus previous year groups	*Plus previous year groups*	

FRACTIONS: RECOGNISE AND WRITE						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
	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 1/3, 1/4, 2/4 and 3/4 of a 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 a 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, for example, 2/5 + 4/5 = 6/5 = 1 and 1/5.	

FRACTIONS: COMPARE						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
		Recognise the equivalence of two quarters and one half.	Recognise and show, using diagrams, equivalent fractions with small 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 unit fractions with the same denominator.			Compare and order fractions, including fractions >1.

FRACTIONS: CALCULATIONS						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
		Write simple fractions e.g. 1/2 of 6 = 3	Add and subtract fractions with the same denominator within one whole (e.g. 5/7 + 1/7 = 6/7)	Add and subtract fractions with the same denominator.	Add and subtract fractions with the same denominators that are multiples of the same number. Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.	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 (e.g. 1/4 × 1/2 = 1/8). Divide proper fractions by whole numbers (e.g. 1/3 ÷ 2 = 1/6).

FRACTIONS: SOLVE PROBLEMS						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Solve problems -halving and sharing.			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: RECOGNISE AND WRITE						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
				Recognise and write decimal equivalents of any number of tenths or hundredths. Recognise and write decimal equivalents to 1/4; 1/2; ¾	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.	Identify the value of each digit to three decimal places.

DECIMALS: COMPARE						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
				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.	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.	

DECIMALS: CALCULATIONS AND PROBLEMS						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
				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.	Solve problems involving number up to three decimal places.	Multiply and divide numbers by 10, 100 and 1000 where the answers are 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.

FRACTIONS, DECIMALS AND PERCENTAGES						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
				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 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 fractions with a denominator of a multiple of 10 or 25.	Associate a fraction with division to calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8). Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

RATIO AND PROPORTION

RATIO AND PROPORTION VOCABULARY						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
						• Ratio • Proportion • Size • Quantity • Missing value • Integer • Multiplication • Division • Multiply • Divide • Solve • Problem • Calculate • Percentage • Comparison • Unequal sharing • Grouping • Fractions • Multiples

RATIO AND PROPORTION						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
						Solve problems involving the relative sizes of two quantities where missing values can be found be 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 percentage 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

Note – even though algebra isn't introduced until Year 6, algebraic thinking starts much earlier through 'missing number' objectives from Year 1, Year 2 and Year 3.

ALGEBRA VOCABULARY

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	• Missing number	• Inverse *Plus previous year groups*	*Previous year groups*			• Missing number • Problem • Pairs • Number sentence • Variables • Combination • Possibility • Enumerate • Equation • Formulae • Generate • Linear number sequence *Plus previous year groups*

ALGEBRA						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Create a repeated pattern using 2 or 3 different variables e.g. colour, shape, size	*Simple one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7= ?-9*	*Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and 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

MEASUREMENT VOCABULARY						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
• Length • Height • Long • Short • Longer • Shorter • Tall • Heavy • Light • Heavier than • Lighter than • Full • Empty	• Double • Half • Mass • Volume • Quarter • Quicker • Slower • Earlier • Later • Evening • Record • Seconds	• Greater than >
• Less than <
• Equals =
• Intervals
• Standard units
• Estimate
• Direction
• Temperature
• Unit
• Scales
• Rulers
• Thermometers
• Measuring vessels	• Duration • Time taken • Nearest minute • Record • Seconds • AM • PM • Noon • Midnight • Kilometre • Add • Subtract • Millimetres	• Estimate • Rectilinear figure • Area • Rectilinear shapes • Convert *Plus previous year groups*	• Square centimetres (cm2) • Square metres (m2) • Irregular shapes • Volume (cm3) • Cubes • Cuboids • Square numbers • Cube numbers • Metric measure • Metric units • Imperial units • Inches	• Decimal notation • Cubic centimetres (cm3) • Cubic metres (m3) • Cubic millimetre (mm3) • Cubic kilometre (Km3) • Decimal places • Formulae • Miles *Plus previous year groups*

• More than • Less than • Half • Half full • Sequence events • Before • After • Next • First • Today • Yesterday • Tomorrow • Morning • Afternoon • Night • Hours • Minutes • Hour • O clock • Hands • Clock face • Coins • Notes • Dates • Days • Weeks • Months • Years	*Plus previous year groups*	• Metres • Centimetres • Kilograms • Grams • Degrees • Celsius • Litres • Millilitres • Symbols • Money • Pounds (£) • Pence (p) • Different combinations • Change • Five past • Ten past • Quarter past • Twenty past • Twenty-five past • Half past • Twenty-five to • Twenty to • Quarter to • Ten to • Five to *Plus previous year groups*	• Perimeter • 2-D shapes • Analogue clock • Roman numerals • 12-hour • 24-hour • Leap year *Plus previous year groups*		• Pounds • Pints *Plus previous year groups*	

USING MEASURES						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Children use everyday language to talk about **length and heights:** -big/small -bigger/smaller	Compare, describe and solve practical problems for:	Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass	Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).	Convert between different units of measure (e.g. kilometre to metre; hour to minute.)	Convert between different units of metric measure (e.g. kilometre and metre; metre and centimetre; centimetre and millimetre;	Solve problems involving the calculation and conversion of units of measure, using decimal

-long/short -longer/shorter -tall/short -taller/shorter **Weight:** -heavy/light -heavier/lighter **Capacity** -full/empty/half full -more than/less than side, weight, and capacity, Compare quantities and objects and solve problems.	-Lengths and heights (e.g. long/short, longer/shorter, tall/short, double/half). -mass or weight (e.g. heavy/light, heavier than, lighter than). -capacity/volume (full/empty, more than, less than, quarter). -time (quicker, slower, earlier, later). Measure and begin to record the following: - lengths and heights - mass/weight - capacity and volume - time (hours, minutes, seconds).	(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 =		Estimate, compare and calculate different measures.	kilogram and gram; litre and millilitre). 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 (e.g. length, mass, volume, money) using decimal notation.	notation to three decimal places 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 three decimal places. Convert between miles and kilometres.

MONEY						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Recognise and know the value of different denominations of coins and notes Solve problems using coins	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 to equal the same amounts of money Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.	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 (e.g. length, mass, volume, money) using decimal notation.	

TIME						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Children use everyday language to talk about time -morning, afternoon, night -o'clock -today, yesterday, tomorrow -days of the week -seasons -before/after Solve problems related to time – sequencing the day	Sequence events in chronological order using language such as: 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, 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.	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 length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa,

PERIMETER, AREA, VOLUME						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
			Measure the perimeter of simple 2-D shapes.	Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.	Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres	Recognise that shapes with the same areas can have different perimeters and vice versa.

				Find the area of rectilinear shapes by counting squares.	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 (e.g. using 1 cm3 blocks to build cubes and cuboids) and capacity (e.g. using water).	Recognise when it is possible to use the 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 centimetre cubed (cm^3) and cubic metres (m^3) and extending to other units, such as mm^3 and km^3.

GEOMETRY

GEOMETRY VOCABULARY

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
• Shape • Square • Rectangle • Circle • Triangle • Cuboid • Cube • Pyramid • Cone • Cylinder • Sphere • Sides • Straight side • Curved side • Position • Distance • Direction • Move • Movement • Patterns	• 2-D Shapes • 3-D Shapes • Two- Dimensional • Three- Dimensional • Half turn • Quarter turn • Three-quarter turn • Left • Right • Up • Down *Plus previous year groups*	• Properties • Compare • Common • Line of symmetry • Vertical line • Edges • Faces • Vertices • Pentagon • Hexagon • Heptagon • Octagon • Kite • Rhombus • Polygon • Square-based pyramid • Triangular pyramid • Triangular prism • Rectangular prism • Pentagonal prism • Hexagonal prism • Octagonal prism • Rotation • Right angle • Clockwise • Anti-clockwise • Order • Arrange • Sequence *Plus previous year groups*	• Angle • Turn • Right angles • Horizontal lines • Vertical lines • Perpendicular lines • Parallel lines • Nonagon • Decagon • Octahedron • Dodecahedron • Tetrahedron • Rectangular pyramid • Pentagonal pyramid • Hexagonal pyramid • Octagonal pyramid • Quarter of a turn • Half-turn • Three quarters of a turn • Complete turn *Plus previous year groups*	• Estimate • Lines of symmetry • Symmetric figure • Classify • Geometric shapes • Quadrilaterals • Acute angle • Obtuse angle • Co-ordinates • Quadrant • Grid • Translate • Translation • Axis X- axis Y-axis • Spaces • Unit • Plot • Point *Plus previous year groups*	• Angles • Measure • Degrees • Missing lengths • Missing angles • Regular polygons • Irregular polygons • Degrees • Estimate • Compare • Reflex angle • Point • Straight line • Multiples • Reflection *Plus previous year groups*	• Radius • Diameter • Circumference • Nets • Four quadrants *Plus previous year groups*

2D SHAPES						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Recognise and name: Circle/square/triangle/ Rectangle/pentagon/ Hexagon Know their properties – sides, corners, straight, curved Compare and sort common 2-D shapes and everyday objects.	Recognise and name common 2-D shapes, (e.g. rectangles (including squares), circles and triangles).	Identify and describe the properties of 2-D shapes, including the number of sides and 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 indifferent orientations.	Use properties of rectangles to deduce related facts and find missing lengths and angles. Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.	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 diameter is twice the radius.

3D SHAPES						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Recognise and name: Sphere/cylinder/cube/ Cuboid/pyramid Describe their properties: Face/edge/corners Compare and sort common 3-D shapes and everyday objects.	Recognise and name common 3-D shapes (e.g. cuboids (including cubes), pyramids and spheres).	Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces. Compare and sort common 3-D shapes and everyday objects.	Make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations; and describe them with increasing accuracy.		Identify 3-D shapes, including cubes and cuboids, from 2-D representations.	Recognise, describe and build simple 3-D shapes, including making nets.

ANGLES AND LINES						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
			Recognise angles as a property of shape or a description of a turn.	Identify acute and obtuse angles and compare and order angles up to two right angles by size.	Know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles.	Find unknown angles in any triangles, quadrilaterals, and regular polygons.

			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 perpendicular and parallel lines.	Identify lines of symmetry in 2-D shapes presented indifferent orientations. Complete a simple symmetric figure with respect to a specific line of symmetry.	Draw given angles and measure them in degrees (°). Identify: -angles at a point and one whole turn (total 360°) -angles at a point on a straight line and ½ a turn (total 180°) -other multiples of 90°	Recognise angles where they meet at a point, are on a straight line, or are vertically opposite and find missing angles.

POSITION AND DIRECTION						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Use positional language correctly: Forwards/backwards/ Underneath/over/turn/ Behind/in front/side	Describe position, directions and movements, including 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 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.	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

STATISTICS VOCABULARY						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
		• Interpret • Construct • Pictogram • Tally chart • Block diagrams • Horizontal • Vertical x- axis y-axis • Key • Title • Chart • Title • Simple tables • Ask • Answer • Questions • Counting • Objects • Category • Sort • Quantity • Total • Compare • Data	• Present • Presented • Graph • Statistics • Bar charts • Tables • Solve • One- step questions • Two- step questions • Information *Plus previous year groups*	• Time graphs • Comparison • Problems *Plus previous year groups*	• Timetables • Line graph *Plus previous year groups*	• Pie chart • Calculate • Mean • Average *Plus previous year groups*

PRESENT AND INTERPRET						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
		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 PROBLEMS						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
		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 such as '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 simple line graphs.	Solve comparison, sum and difference problems using information presented in a line graph.	Calculate and interpret the mean as an average.