



Curriculum Depth Map - Maths

<u>Intent:</u>

At BHPS we provide children with a challenging and engaging Maths curriculum by offering a mastery approach, in order to deliver the three aims of the National Curriculum: fluency, reasoning and problem solving. Underpinning this pedagogy is a belief that all children can achieve in maths. We believe in promoting sustained and deepening understanding by employing a variety of mastery strategies. Our approach aims to provide children with full access to the curriculum, enabling them to develop independence, confidence and competence.

By the end of Key Stage 2, we want our children to have developed the necessary skills to make them 'deep thinkers', acquiring mathematical knowledge, skills and understanding that can be recalled quickly, transferred and applied in different contexts. They need to be able to make rich connections across the areas of maths and use their knowledge in other subjects. We aim to create independent mathematicians who are well equipped to apply their learning to the wider world.

Implementation:

We have adopted the White Rose Maths Hub long term approach to maths. The WRMH planning is a national project designed to provide schools with the most up to date processes and procedures in Mathematics teaching and learning. Our aim is to develop a culture of deep understanding, confidence and competence in maths across the whole of our school – a culture that produces strong, secure mathematics within each year group.

Our Maths curriculum is designed to allow children time to think, discuss, practise, explore and embed. This allows time for teaching, practice and repetition - both in a year group and across both key stages. Curriculum coverage is mapped out carefully from Year 1 to Year 6, which allows some key concepts to be developed at a deeper level of learning, understanding and mastery. Fundamental knowledge and skills are covered at key points throughout the primary phase and repeated to allow pupils to build on what has been taught before. Our aim is to ensure that the three core areas of the National Curriculum are covered in all of our lessons: fluency, reasoning and problem solving. We offer the children the opportunity to have varied and frequent practice (varied fluency - VF) of their maths skills, with the focus on their ability to recall and apply their knowledge rapidly and accurately. Reasoning is a key area in all of our lessons. Mathematical vocabulary is an essential part of each lesson and the children need to understand this within the area they are studying and be able to make rich connections across other areas within this subject. Each lesson provides children with the opportunity to reason through their ideas, use their mathematical language to explore a line of enguiry and problem solve routine and non-routine problems. We aim to build problem-solvers of the future and build resilience in our children; essential skills that they can use in all aspects of their learning. Lessons will be planned and a knowledge organiser provided for pupils, which outlines the area to be taught, where the new knowledge and skills fit in with their prior learning, any sticky knowledge they need to understand and key vocabulary they need to learn.

Impact:

Impact is evidenced through:

- Pupils' use and understanding of the identified mathematical vocabulary
- Retaining key knowledge
- Quick recall of facts and procedures
- Demonstrating that they know more all the time
- Low-stakes tests/quizzes
- The flexibility and fluidity to move between different contexts and representations of mathematics.
- The ability to recognise relationships and make connections in mathematics
- High aspirations, which will see them through to further study, work and a successful adult life; particularly girls

<u>Key Stage One</u>

Year 1	Year 2		
Number: Place Value (within 10/within 20)	Number: Place Value		
Number: Addition & Subtraction (within 10)	Number: Addition & Subtraction		
Geometry: Shape	Measurement: Money		
Number: Addition & subtraction (within 20)	Number: Multiplication & Division		
Number: Addition & subtraction (within 20)	Number: Multiplication & Division		
Number: Addition & Subtraction (within 20)	Statistica		
Number: Place value (within 50), including multiples of 2, 5			
	Geometry: Properties of Snape		
Measurement: Length/height/weight & volume	Number: Fractions		
Number: Multiplication & Division - reinforcing multiples of	Measurement: Length & height		
2, 5 & 10	Geometry: position and direction		
Number: Fractions	Problem solving		
Geometry: Position and direction	Measurement: Time		
Measurement: Money & time	Measurement: Mass, capacity and temperature		
	Investigations		
Place	Value		
Cour	nting		
Count to and across 100 forwards and backwards beginning with	Count in steps of 2, 3 and 5 from 0, and in tens from any number		
0 or 1, or from a given number	forward and backward.		
Count numbers to 100 in numerals; count in multiples of twos, fives and tens			
Repr	esent		
Identify and represent numbers using objects and pictorial			
representations			
Read and write numbers to 100 in numerals	Read and write numbers to at least 100 in numerals and in words		
Read and write numbers from 1 to 20 in numerals and words	Identify, represent and estimate numbers using different		
	representations, including the number line		
Use & Compare			
Give 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 o up to 100		
	Use <, > and = signs		
Problems of	& Rounding		
	Use place value and number facts to solve problems		
Addition &	Subtraction		
Recall, Rep	resent. Use		
Read, write and interpret mathematical statements involving			
addition (+), subtraction (-) and equals (=) signs			
Represent and use number bonds and related subtraction facts	Recall and use addition and subtraction facts to 20 fluently and		
within 20	derive and 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 solve missing		
	number problems.		
Calcul	ations		
Add and subtract one-digit and two-digit numbers to 20, including	Add and subtract numbers using concrete objects, pictorial		
zero	representations and mentally, including:		
	a two-digit number and ones		
	> a two-digit number and tens		
	> two two-digit numbers		
	adaing three one-aigit numbers		
Solve P			
Solve one-step problems that involve addition and subtraction:	Solve problems with addition and subtraction:		
using concrete objects and pictorial representations	 using concrete objects and pictorial representations, including these involving numbers, 		
missing number problems such as 1 = 2 - 9	including those involving numbers, quantifies and measures		
	apprying their knowledge of mental and written methods		

Multiplication	n and Division		
Recall, Rep	resent, Use		
	Recall and use multiplication and division facts for the 2, 5 and 20 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		
Calcu	ations		
	Calculate mathematical statements for multiplication and division		
	within the multiplication tables and write them using the		
Colve P	multiplication (x), aivision (+) and equals (+) signs		
Solve re-	rodiems		
using concrete objects pictorial representations and arrays with	using materials arrays repeated addition mental methods and		
support from the teacher	multiplication and division facts, including problems in contexts		
Frac	tions		
Recognise	and write		
Recognise, find and name a half as one of two equal parts of an	Recognise find name and write fractions $\frac{1}{2}$ $\frac{1}{2}$ $\frac{2}{2}$ and $\frac{3}{2}$ of a		
object, shape or quantity	length shape set of objects or quantity		
Recognise, find and name a quarter as one of four equal parts of			
Com	bare		
	Recognise the equivalence of $\frac{2}{2}$ or $\frac{1}{2}$		
	4 2		
Calcu	ations		
	Write simple fractions e.g. $\frac{1}{2}$ of 6 = 3		
Alg	ebra		
(algebraic thinking = mi	ssing number objectives)		
Solve one-step problems that involve addition and subtraction.	Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing		
 missing concrete objects and pictorial representations missing number problems such as 7 = 2 - 9 	number problems		
Measu	rement		
Using	measures		
Compare, describe and solve practical problems for:			
lengths and heights (long (er)/short (er), tall/short,			
double/half)			
mass and weight (heavy/light, heavier than, lighter than)			
capacity and volume (full/empty, more than, less than, halt, half full suggestion)			
nait fuil, quarter)			
Measure and begin to record the following:	Choose and use appropriate standard unis to estimate and		
Measure and Degin to record the following. Jenaths & heights	measure length /height in any direction (m/cm); mass (kg/g);		
mass/weight	temperature $(^{\circ}C)$; capacity (litres/ml) to the pearest appropriate		
 capacity and volume 	unit using rulers scales thermometers and measuring vessels		
 time (hours, minutes, seconds) 			
	Compare and order lengths, mass, volume/capacity and record the		
	results using >, < and =		
I	Noney		
Recognise and know the value of different denominations of coins	Recognise and use symbols for pounds (f) and pence (p); combine		
and notes	amounts to make a particular value		
	Find different combinations of coins that equal the same amounts		
	Solve simple problems in a practical context involving addition and		
	subtraction of money of the same unit, including giving change		
Ti	me		
Sequence events in chronological order using language (e.g.			
before, after, next, first, today, yesterday, tomorrow, morning,	Compare and sequence intervals of time		
	Compare and sequence intervals of time		
afternoon and evening)	Compare and sequence intervals of time		
afternoon and evening) Recognise and use language relating to dates including days of the	Compare and sequence intervals of time		
afternoon and evening) Recognise and use language relating to dates including days of the week, weeks, months and years	Compare and sequence intervals of time		
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 hands	Compare and sequence intervals of time Tell and write the time in five minutes, including quarter past/to		

	Know the number of minutes in an hour and the number of hours in		
	a day		
Geor	netry		
2-D 3	Shapes		
Recognise and name common 2-D shapes	Identify and describe the properties of 2-D shapes, including the		
e.g. rectangles (including squares) circles and triangles	number of sides and line symmetry in a vertical line		
	Identify 2-D shapes on the surface of 3-D shapes		
	Compare and sort common 2-D shapes and everyday objects		
3-D 3	Shapes		
Recognise and name common 3-D shapes	Recognise and name common 3-D shapes		
e.g cuboids (including cubes), pyramids and spheres	e.g cuboids (including cubes), pyramids and spheres		
	Compare and sort common 3-D shapes and everyday objects		
Position 8	Direction		
Describe position, direction and movement, including whole, half,	Use mathematical vocabulary to describe position, direction and		
quarter and three-quarter turns	movement, including movement in a straight line and distinguishing		
	between rotation as a turn in terms of right angles for quarter,		
	half and three-quarter turns (clockwise and anti-clockwise)		
Stat	istics		
	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			

<u>Key Stage Two</u>

Year 3	Year 4	Year 5	Year 6			
Number: Place Value	Number: Place Value	Number: Place Value	Number: Place Value			
Number: Addition & Subtraction	Number: Addition & Subtraction	Number: Addition & Subtraction	Number: Addition, Subtraction,			
Number: Multiplication & Division	Measurement: Length and perimeter	Statistics	Multiplication & Division			
Number: Multiplication & Division	Number: Multiplication & Division	Number: Multiplication & Division	Number: Fractions			
Measurement: Money	Number: Multiplication & Division	Measurement: Perimeter & Area	Geometry: Position and Direction			
Statistics	Measurement: Area	Number: Multiplication & Division	Number: Decimals			
Measurement: Length and perimeter	Number: Fractions	Number: Fractions	Number: Percentages			
Number: Fractions	Number: Decimals	Number: Decimals & Percentages	Number: Algebra			
Number: Fractions	Number: Decimals	Number: Decimals	Measurement: Converting Units			
Measurement: Time	Measurement: Money	Geometry: Properties of Shape	Measurement: Perimeter, Area & Volume			
Geometry: Properties of Shape	Measurement: Time	Geometry: Position and Direction	Number: Ratio			
Measurement: Mass and Capacity	Statistics	Measurement: Converting Units	Geometry: Properties of Shape			
	Geometry: Properties of Shape	Measurement: Volume	Problem Solving			
	Geometry: Position and Direction		Statistics/Investigations			
Place Value						
	Cou	nting				
Count from 0 in multiples of 4, 8, 50, and 100; Count in multiples of 6, 7, 9, 25 and 1000 Count forwards or backwards in steps of						
find 10 or 100 more or less than a given		powers of 10 for any given number up to				
Count backwards through zero to include Count forwards and backwards with positive						
negative numbers and negative whole number, including through						
	Pann	zero				
Identify represent and estimate numbers	Tdentify represent and estimate numbers	Baad white (anden and compane) numbers to at	Dead write (order and compane) numbers to at			
using different representations	using different representations	least 1 000 000 and determine the value of	least 1 000 000 and determine the value of			
		each digit	each digit			
Read and write numbers up to 1000 in	Read roman numerals to 100 (I to C) and know	Read Roman numerals to 1000 (M) and				
numerals and in words	that over time, the numeral system changes to	recognise years written in Roman numerals				
	include the concept of zero and place value					
Use & Compare						
Recognise the place value of each digit in a	Recognise the place value of each digit in a					
three-digit number (hundreds, tens, ones)	tour-digit number (thousands, hundreds, tens,					
Company and order numbers up to 1000	Orden and company numbers beyond 1000	(Dead white) and and compare numbers to at	(Dead white) order and compare numbers to st			
compare and order numbers up to 1000	or der and compare numbers beyond 1000	least 1 000 000 and determine the value of	least 10,000,000 and determine the value of			
		each diait	each digit			
	Find 1000 more or less than a given number					

Problems & Rounding				
Solve number problems and practical problems involving these ideas	Solve number and practical problems that involve all of the above and with increasingly larger positive numbers	Solve number problems and practical problems that involve all of the below Solve number and practical proble involve all of the below		
	Round any number to the nearest 10, 100 or 1000	Round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000, 100,000	Round any whole number to a required degree of accuracy	
		Interpret negative numbers in context	Use negative numbers in context and calculate intervals across zero	
	Addition &	Subtraction		
	Recall, Rep	resent, 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	ck Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy		
	Calcu	lations		
Add and subtract numbers mentally, including: a three-digit number and ones a three-digit number and tens a three-dig number and hundreds 	Add and subtract numbers with up to four- digits using the formal written methods of columnar addition and subtraction where appropriate	Add and subtract whole numbers with more than four-digits using the formal written methods (columnar addition and subtraction)	Perform mental calculations, including with mixed operations and large numbers	
Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction		Add and subtract numbers mentally with increasingly large numbers	Use their knowledge of the order of operations to carry out calculations involving the four operations	
	Solve P	roblems		
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 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 and a combination of these, including understanding the meaning of the equals sign		
	Multiplicatio	on & Division		
	Recall, Rep	resent, Use		
Recall and use multiplication and division facts for the 3, 4 & 8 multiplication tables	Recall multiplication and division facts for multiplication tables up to 12x12.	Identify multiples and factors, including finding all factor pairs of a number and common factors of two numbers	Identify common factors, common multiples and prime numbers	
	Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1 dividing by 1	Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers	Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy	

			1
	multiplying together three numbers		
	Recognise and use factor pairs and	Establish whether a number up to 100 is prime	
	commutativity in mental calculations	& recall prime numbers up to 19	
		Recognise and use square numbers and cube	
		numbers and the notation for squared (²) and	
		cubed (3)	
	Calcu	lations	
Write and calculate mathematical statements	Multiply two-digit and three-digit numbers by a	Multiply numbers up to 4 digits by a one two-	Multiply multi-digit numbers up to 4 digits by a
for multiplication and division using the	one-digit number using formal written layout	digit number using a formal written method,	two-digit whole number using the formal
multiplication tables that they know, including		including long multiplication for two-digit	method of long multiplication
for two-digit numbers times one-digit		numbers	
numbers, using mental and progressing to		Multiply and divide numbers mentally drawing	
formal written methods		upon known fact	
		Divide numbers up to four-digits by a one-digit	Divide numbers up to 4 digits by a two-digit
		number using the formal written method of	whole number using the formal written method
		short division and interpret remainders	of long division and interpret remainders as
		appropriately for the context	whole number remainders, fractions, or by
			rounding, as appropriate for the context
		Multiply and divide whole numbers and those	Divide numbers up to 4 digits by a two-digit
		involving decimals by 10, 100 and 1000	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 P	roblems	
Solve problems, including missing number	Solve problems, involving multiplying and	Solve problems involving multiplication and	Solve problems involving addition, subtraction,
problems, involving multiplication and division,	adding, including using the distributive law to	division including using their knowledge of	multiplication and division
including positive integer scaling problems and	multiply two digit numbers by one digit,	factors and multiples, squares and cubes	
correspondence problems in which 'n' objects	integer scaling problems and correspondence		
are connected to 'm' objects	problems in which 'n' objects are connected to		
	'm' objects		
		Solve problems involving multiplication and	
		division, including scaling by simple fractions	
		and problems involving simple rates	
	Combined	Operations	
		Solving problems involving addition,	Use their knowledge of the order of operations
		subtraction, multiplication and division and a	to carry out calculations involving the four
		combination of these, including understanding	operations
		the meaning of the equals sign	

	Fractions			
	Recognise	and Write		
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	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, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators		Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number e.g. $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$		
Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators				
	Com	pare		
Recognise and show, using diagrams, equivalent fractions with small denominators	Recognise and show, using diagrams, families of common equivalent fractions		Use common factors to simply fractions; use common multiples to express fractions in the same denomination	
Compare and order unit fractions and fractions with the same denominators		Compare and order fractions whose denominators are all multiples of the same number	Compare and order fractions, including fractions >1	
	Calcul	ations		
Add and subtract fractions with the same denominator within one whole e.g. $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$	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	Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions	
		Multiply proper fractions and mixed number by whole numbers, supported by materials and diagram	Multiply simple pairs of proper fractions, writing the answer in its simplest form e.g. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$	
			Divide proper fractions by whole numbers e.g. $\frac{1}{3} \div 2 = \frac{1}{6}$	
	Solve P	roblems		
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			

Deci	mals	
Recognise	and Write	
Recognise and write decimal equivalents of any number of tenths or hundredths	Read and write decimal numbers as fractions e.g. $0.71 = \frac{71}{100}$	Identify the value of each digit in numbers given to three decimal places
Recognise and write decimal equivalents to $\frac{3}{4}\frac{1}{2}\frac{1}{4}$	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	
Com	pare	
Round decimals with one decimal place to the nearest whole number	Round decimals with two decimal places to the nearest whole number and to one decimal place	
Compare numbers with the same number of decimal places up to two decimal places	Read, write, order and compare numbers with up to three decimal places	
Calculations	and Problems	
Find the effect of dividing one or two digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths	Solve problems involving numbers up to three decimal places	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
Fractions, Decimo	als & 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'. Write percentages as a fraction with a denominator 100 and as a decimal	Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction e.g. 0.375 = $\frac{3}{8}$
	Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$, those fractions with a denominator of a multiple of 10 or 25	Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

	Ratio & F	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 and the use of percentages for comparison
			Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples
	Alge	ebra	
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
	Measu	rement	
	Using N	leasures	
Measure, compare, add and subtract lengths (m/cm/mm) mass (kg/g) volume/capacity (l/ml)	Convert between different units of measure e.g. km to m, hours to minutes	Convert between different units of metric measure	Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate
	Estimate, compare and calculate different measures	Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints	Use, read, write and convert 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 of up to three decimal places
		Use all four operations to solve problems involving measure, using decimal notation, including scaling	Convert between miles and kilometres
		ney	
Add and subtract amounts of money to give change, using both \pounds 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 money.	

Time				
Tell and write the time from an analogue clock, including using Roman numerals I to XII and 12 hour and 24 hour clocks	Read, write and convert time between analogue and digital 12 and 24 hour clocks		Use read, write and convert between stand units, converting measures of time from a smaller unit of measure to a larger unit and vice versa	
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, am/pm, morning, noon and midnight	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		
Know the number of seconds in a minute and the number of days in each month, year and leap year				
	Penimeten	Area Valume	I	
Measure the perimeter of simple 2-D shapes	Measure and calculate the perimeter of rectilinear figure 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 the area of rectangles, including using standard units, square centimetres (cm ²) and square metres (m ²) and estimate the area of irregular shapes	Calculate, estimate and compare volume of cubes and cuboids using standard units including square centimetres (cm ²) and square metres (m ²) and extending to other units (e.g mm ³ and km ³)	
		Estimate volume and capacity	Calculate the area of parallelograms and triangles	
			Recognise when it is possible to use formulae for area and volume of shapes	
	Geon	netry		
	2-D 5	Shapes		
Draw 2-D shapes	Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and size	Distinguish between regular and irregular polygons based on reasoning about equal sides and angles	Draw 2-D shapes using given dimensions and angles	
	Identify lines of symmetry in 2D shapes presented in different orientations	Use the properties of rectangles to deduce related facts and find missing lengths and angles	Compare and classify geometric shapes based on their properties and sizes	
			Illustrate and name parts of circles, using radius, diameter, circumference and know that the diameter is twice the radius	

	3-D 5	Shapes	
Make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them		Identify 3-D shapes including cubes and other cuboids, from 2-D representations	Recognise, describe and build simple 3-D shapes, including making nets
	Angles	& Lines	
Recognise angles as a property of shape or a description of a turn		Know angles are measured in degrees	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 acute and obtuse angles and compare and order angles up to two right angles by size	Estimate and compare acute, obtuse and reflex angles	Recognise angles where they meet at a point, are on a straight line, or are vertically opposite and find missing angles
Identify horizontal and vertical lines and pairs of perpendicular and parallel lines	Identify lines of symmetry in 2-D shapes presented in different orientations	Draw given angles and measure them in degrees	
	Complete a simple symmetric figure with respect to a specific line of symmetry	Identify: > angles at a point and one whole turn > angles at a point on a straight line and a $\frac{1}{2}$ turn > other multiples of 90°	
	Position &	Direction	
	Describe positions on a 2-D grid as coordinates in the first quadrant	Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that	Describe positions on the full coordinate grid (all four quadrants)
	Plot specified points and draw sides to complete a given polygon	the shape has not changed	
	Describe movements between positions as translations of a given unit to the left/right and up/down		Draw and translate simple shapes on the coordinate plane and reflect them in the axes
	Stat	istics	
	Present an	d interpret	
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 p	roblems	
Solve one-step and two-step questions using information present in scaled bar charts and pictograms and tables	Solve comparison, sum and difference problems using information present in bar charts, pictograms, tables and other graphs	Solve comparison, sum and difference problems using information present in a line graph	Calculate and interpret the mean as an average

Appendix - Key Knowledge and Vocabulary

Maths - KS1 - Year 1					
Key Vocabulary					
pattern	guess	measu	re	close to	
puzzle	how many?	measu	rement	about the :	same as
what could we try next?	estimate	size		just over,	just under
how did you work it out?	nearly	compa	re	too many, t	too few
explain	roughly	draw		enough, no	t enough
recognise	sort	image			5
describe	strategy	manipu	ilatives		
	systematically	efficie	nt		
Key Knowledge			Key Vocabulary	1	
NUMBER - Place Value - v	vithin 10		sort		ones
Step 1 - Sort objects			group		tens
Step 2 - Count objects			total		digit
Step 3 - Represent objects			altogether		the same number as,
Step 4 - Count, read and write	forwards from any number 0 to 10)	represent		as many as
Step 5 - Count, read and writing	g backwards from any number 0 to	o 10	representation		more, larger, bigger,
Step 6 - Count one more			match		greater
Step 7 - Count one less			number		fewer, smaller, less
Step 0 - One to one correspond	ence to start to compare groups	ton	numeral		hinnest largest
Step 9 - compare groups using t	anguage such as equal, more/grea	rer,	zero		areatest
Step 10 - Introduce - > and < s	whole		one, two, three twe	enty	one more, ten more
Step 11 - Compare numbers			teens numbers, elevel	n, twelve	one less, ten less
Step 12 - Order groups of obje	cts		twenty		equal to
Step 13 - Order numbers			hundred col		compare
Step 14 - Ordinal numbers (1st, 2nd, 3rd)					order
Number: Place Value within 20		how many?		size	
Step 1 - Count forwards and backwards and write numbers to 20 in		few		first, second, third	
numerals and words		pair		last, last but one	
Step 2 - Numbers from 11 to 20)		count, count (up) to,		before, after, next
Step 3 - Tens and ones		count on (from, to),		between , half-way	
Step 4 - Count one more and one less			count back (from, to))	between, above, below
Step 5 - Compare groups of objects		forwards		sequence	
Step 6 - Compare numbers		backwards		number sentence	
Step 7 - Order groups of objec	ts		more, less		Statement
Step 8 - Order numbers			most, least		calculation
Number: Place Value within	1 50 (Multiples of 2,5, 10		many		symbol
included)			oaa, even		inequality symbols
Step 1 - Numbers to 50			muniple of		/ less than
Step 2 - Tens and ones	50		part		partition
Step 3 - Represent numbers to	50		whole		partmon
Step 5 Company objects within	n 50		amount		
Step 6 - Compare numbers with	in 50				
Step 7 - Order numbers within	50				
Step 8 -Count in 2s					
Step 9 - Count in 5s					
Number: Place Value within 100			1		
Step 1 - Counting to 100					
Step 2 - Partitioning numbers					
Step 3 - Comparing numbers (1)				
Step 4 - Comparing numbers (2))				
Step 5 - Ordering numbers					
Step 6 - One more, one less					

NUMBER - Addition and Subtraction - within 10	addition		subtract
Sten 1 - Part whole model	add more and		take away
Step 2 - Addition symbol	make sum total		how many are left/left
Step 2 - Fact families - Addition facts	nlue		over/remaining?
Step 4 - Find number bonds for numbers within 10	altogether		how many have gone?
Step 5 - Systematic methods for number bonds within 10	double		one less two less ten
Step 6 - Number bonds to 10	near double		less
Step 7 - Compare number bonds	half halve		how many fewer is
Step 8 - Addition: Adding together	ana mana two mona	tan	than 2
Step 9 - Addition: Adding more	more	. Ten	how much less is 2
Step 10 - Finding a part	how many more to ma	ke 2	difference/difference
Step 11 - Subtraction: Taking away, how many left? Crossing out	how many more is t	han 2	hetween
Step 12 - Subtraction: Taking away, how many left? Introducing the	how much more is 2	nunP	aquala
subtraction symbol			ic the came ac
Step 13 - Subtraction: Finding a part, breaking apart			number bonds/nains
Step 14 - Pact Jannies - The O Jacis Step 15 - Subtraction: Counting back			missing number
Step 16 - Subtraction: Finding the difference			missing number
Step 10 - Submaching indung ine difference Step 17 - Comparing addition and subtraction statements a + b > c			
Step 18 - Comparing addition and subtraction statements a + b > c + d			
Number: Addition and Subtraction within 20			
Step 1 - Add by counting on			
Step 2 - Find & make number bonds			
Step 3 - Add by making 10			
Step 4 - Subtraction - Not crossing 10			
Step 5 - Subtraction - Crossing 10 (1)			
Step 6 - Subtraction - Crossing 10 (2)			
Step 7 - Related Facts			
Step 8 - Compare Number Sentences			
Multiplication and Division	multiplication		division
Step 1 - Count in 10s	multiply		dividing
Step 2 - Make equal groups	multiplied by		grouping
Step 3 - Add equal groups	multiple		sharing
Step 4 - Make arrays	array		doubling
Step 5 - Make doubles	number patterns		halving
Step 6 - Make equal groups - grouping	equal groups		
Step 7 - Make equal groups - sharing	unequal		
Number: Fractions	fraction		parts of a whole
Step 1 - Halving shapes or objects	equal part		half
Step 2 - Halving a quantity	equal grouping		one of two equal parts
Step 3 - Find a quarter of a shape or object	equal sharing		quarter
Step 4 - Find a quarter of a quantity	25		one of tour equal parts
Geometry - Shape	3D		<u>2D Shape Vocab</u>
Step 1 - Recognise and name 3D shapes	2D		corner, side
Step 2 - Sori SU Shapes Step 3 - Decoonise and name 2D chapes	shape, pattern		rectanole (including
Step 5 - Recognise una nume 20 snapes Step 4 - Sort 2D shapes	†la†		square)
Step 5 - Patterns with 3D and 2D shapes	curved, straight		circle
	round		trianale
	hollow, solid		
	sort		3D Shape Vocab
	make, build, draw, rol	I,	face, surface, edge
	stack		vertex, vertices
	size		cube, cuboid
	bigger, larger, smaller	r	pyramid
	symmetry, symmetric	al,	sphere
	symmetrical pattern		cone
	pattern, repeating pa	ttern	cylinder
	match		
Geometry: Position and Direction	position	apart	next to, close,
Step 1 - Describe turns	direction	in-betwe	en near, far
Step 2 - Describe Position (1)	over, under,	middle, e	edge along
Step 3 - Describe Position (2)	underneath	centre	through
	ubove, Delow	dinaction	TO, TROM,
	on in	iournev	from

	outside, inside around in front, behind front, back beside, next to opposite	left, rigł up, down forwards backwar sideways across	ht s, ds, s	movement slide, roll, turn stretch, bend full turn, whole turn, half turn, quarter turn, three-quarter turn
Measurement - Length and Height Step 1 - Compare lengths and heights, Step 2 - Measure length (1) Step 3 - Measure length (2)	centimetre, metre length, height, width long, short, tall high, low wide, narrow thick, thin longer, shorter, talle	, depth r	longest, sho highest ar far, near, cl ruler metre stick height same	rtest, tallest, nd so on ose
Measurement - Weight and Volume Step 1 - Introduce weight and mass Step 2 - Measure mass Step 3 - Compare mass Step 4 - Introduce capacity Step 5 - Measure capacity Step 6 - Compare capacity	Weight and Volume kilogram, gram weigh, weighs, balanc heavy, light heavier than, lighter heaviest, lightest scales	<u>Vocab</u> :es than	Capacity an Vocab litre, millilit capacity volume full, empty more than, I half full, qua holds container	<mark>d Volume</mark> re less than arter full
Measurement: Money Step 1 - Recognising coins Step 2 - Recognising notes Step 3 - Counting in coins	money coin penny, pence, pound price, cost buy, sell spend, spent pay value silver, bronze		change dear, costs cheap, costs costs the sa how much? how many? Total amount	more s less, cheaper ume as ? ?
Measurement: Time Step 1 - Before and after Step 2 - Dates Step 3 - Time to the hour Step 4 - Time to the half hour Step 5 - Writing time Step 6 - Comparing time	time, date days of the week, Ma Tuesday months of the year (January, February seasons: spring, sumr autumn, winter day, week, weekend, year birthday, holiday morning, afternoon, a night, midnight bedtime, dinner time playtime today, yesterday, tor before, after earlier, later next, first, last, fina	onday,) ner, month, evening, e, morrow	now, soon, e quick, quicke quickly, fast slow, slower slowly old, older, o new, newer, takes longer time how long ago how long will how long will how often? always, neve sometimes usually once, twice hour, o'clock clock, clock hands hour hand, n hours, minut	arly, late er, quickest, ter, slower , slowest, oldest newest r, takes less o? l it be to? l it take to? er, often, k, half past, face, watch, ninute hand tes, seconds

Maths – KS1 – Year 2				
Key Vocabulary				
show how you	describe the pattern	ment	al calculation	explain your thinking
investigate	describe the rule	writt	en calculation	explain your method
Key Knowledge			Key Vocabulary	
NUMBER - Place Value			hundreds	two hundred one
Step 1 - Count objects to 100 and	read and write numbers in numerals/v	vords	one- two- or three-digit	thousand
Step 2 - Represent numbers to 10	0		place, place value	threes, fours and
Step 3 - Tens and ones with a par	t whole model		stands for, represents	so on
Step 4 - Tens and ones using addi	tion		exchange	tally
Step 5 - Use a place value chart			twenty-first, twenty-second	. predict
Step 6 - Compare objects			continue	rule
Step 7 - Compare numbers				
Step 8 - Order objects and number	ers			
Step 9 - Count in 2s, 5s and 10s				
Step 10 - Count in 35	tion			
Step 1 - Eact families - Addition	and subtraction bonds to 20		one hundred loss	
Step 2 - Check calculations			facts	
Step 3 - Compare number sentence	es		tens boundary	
Step 4 - Related facts			exact exactly	
Step 5 - Bonds to 100 (tens)				
Step 6 - Add and subtract 1s				
Step 7 - 10 more and 10 less				
Step 8 - Add and subtract 10s				
Step 9 - Add a 2-digit and 1-digit	number - crossing ten			
Step 10 - Subtract a 1-digit numb	er from a 2-digit number – crossing te	en		
Sep 11 - Add two 2-digit numbers	- not crossing ten - add ones/add ten	S		
Step 12 - Add two 2-digit number	s - crossing ten - dad ones/ dad tens			
Step 13 - Subtract a 2-digit numb	per from a 2-digit number - crossing ten	on -		
subtract ones & tens				
Step 15 - Bonds to 100 (tens and a	ones)			
Step 16 - Add three 1-digit numbe	ers			
Number: Fractions			equivalent fraction	
Step 1 - Make equal parts			mixed number	
Step 2 - Recognise a half			numerator	
Step 3 - Find a half			denominator	
Step 4 - Recognise a quarter			two halves	
Step 5 - Find a quarter			two quarters, three quarters	
Step 0 - Recognise a third			one third, two thirds	
Step 8 - Unit fractions			one of three equal parts	
Step 9 - Non-unit fractions				
Step 10 - Equivalence of $\frac{1}{2}$ and 2/	4			
Step 11 - Find three guarters				
Step 12 - Count in fractions				
Multiplication and Division			groups of	one each, two each,
Step 1 - Recognise equal groups			times	three each ten
Step 2 - Make equal groups			once, twice, three times	each
Step 3 - Add equal groups			ten times	group in pairs, threes
Step 4 - Multiplication sentences	using the × symbol		repeated addition	tens
Step 5 - Multiplication sentences	trom pictures		divide, divided by,	row, column
Step 7 - 2 times table			civided into	multiplication table
Step 7 - 2 Times-Table			left left over	division fact
Step 9 - 10 times-table				
Step 10 - Make eaual aroups-shar	ina			
Step 11- Make equal groups -arou	iping			
Step 12 - Divide by 2				
Step 13 - Odd & even numbers				
Step 14 - Divide by 5				
Step 15 - Divide by 10				

Measurement: Money	bought	
Step 1 - Count money - pence	sold	
Step 2 - Count money - pounds (notes and coins)	5010	
Step 3 - Count money - notes and coins		
Step 4 - Select money		
Step 5 - Make the same amount		
Step 6 - Compare money		
Step 7 - Find the total		
Step 8 - Find the difference		
Step 9 - Find change		
Step 10 -Two-step problems		
Measurement: Length and Height	measuring scale	
Step 1 - Measure length (cm)	further	
Step 2 - Measure length (m)	furthest	
Step 3 - Compare lengths	tape measure	
Step 4 - Order lengths	·	
Step 5 - Four operations with lengths		
Measurement: Time	5 10 15 minutes past	
Step 1 - O'clock and half past	digital/analogue	
Step 2 - Ougster past and guarter to	timon	
Step 2 - Quarter pust and quarter to Step 3 - Telling time to 5 minutes	imer.	
Step 5 - Teining Time To 5 minutes Step 4 - Minutes in an hours in a day		
Step 5 - Find durations of time		
Step 5 - 1 ind dui ations of time		
Step 6 - compare durations of time	millilitan	
Step 1 Compare most	minime	
Step 2 - Compare mass	contains	
Step 2 - Medsure mass in grams	temperature	
Step 3 - Measure mass in Kilograms	degree	
Step 4 - Compare volume		
Step 5 - Millilitres		
Step 6 - Litres		
Step / - Temperature		
Geometry: Properties of Shape	line symmetry	
Step 1 - Recognise 2D and 3D shapes	rectangular	
Step 2 - Count sides on 2D shapes	circular	
Step 3 - Count vertices on 2D shapes	triangular	
Step 4 - Draw 2D shapes	pentagon	
Step 5 - Lines of symmetry	hexagon	
Step 6 - Sort 2D shapes	octagon	
Step 7 - Make patterns with 2D shapes		
Step 8 - Count faces on 3D shapes		
Step 9 - Count edges on 3D shapes		
Step 10 - Count vertices on 3D shapes		
Step 11 - Sort 3D shapes		
Step 12 - Make patterns with 3D shapes		
Geometry : Position and Direction	Route	right angle
Step 1 Describing movement	higher, lower	straight line
Step 2 Describing turns	clockwise, anticlockwise	
Step 3 Describing movement and turns		
Step 4 Making patterns with shapes		
Statistics	tally,	most popular, most
Step 1 - Make tally charts?	graph, block graph,	common
Step 2 - Draw pictograms (1-1)	pictogram	least popular, least
Step 3 - Interpret pictograms (1-1)	represent	common
Step 4 - Draw pictograms (2, 5 and 10)	label, title	
Step 5 - Interpret pictograms (2, 5 and 10)		
Step 6 - Block diagrams		

Maths - KS2				
Key Vocabulary				
greatest value,	round, nearest,	round to t	the nearest ten,	approximate,
least value	round up	round to t	the nearest hundred	approximately
statement	round down		1	
Key Knowledge			Key Vocabular	у
Year 3				·
Number: Place Value			eights,	
Step 1 - Hundreds			fifties	
Step 2 - Represent numbers to 1	,000		hundreds	
Step 3 - 100s, 10s and 1s (1)			factor of	
Step 4 - 100s, 10s and 1s (2)			relationship	
Step 6 - Find 1 10 100 more or 1	ess than a given number		less	
Step 7 - Compare objects to 1,00)0		one hundred	
Step 8 - Compare numbers to 1,0	00		more	
Step 9 - Order numbers				
Step 10 - Count in 50s	•			
Number: Addition and Subtract	10n lag of 100		nunareas boundary	
Step 2 - Add and subtract 3-dia	t numbers and ones - not ci	rossina 10	fifties	
Step 3 - Add 3-digit and 1-digit r	numbers - crossing 10		hundreds	
Step 4 - Subtract a 1-digit numb	er from a 3-digit number -	crossing 10		
Step 5 - Add and subtract 3-digi	t numbers and tens - not cr	rossing 100		
Step 6 - Add a 3-digit number an	d tens - crossing 100	`		
Step 7 - Subtract tens from a 3-	aigit number - crossing 100	J		
Step 9 - Spot the pattern - maki	ng it explicit			
Step 10 - Add and subtract a 2-c	ligit and 3-digit number - n	ot crossing		
10 or 100				
Step 11 - Add a 2-digit and 3-dig	it number - crossing 10 or 1	100		
10 or 100	ber from a 3-digit number	- cross the		
Step 13 - Add two 3-diait number	rs - not crossina 10 or 100			
Step 14 - Add two 3-digit number	rs - crossing 10 or 100			
Step 15 - Subtract a 3-digit num	ber from a 3-digit number	- no		
exchange				
Step 16 - Subtract a 3-digit num	ber from a 3-digit number - loulations	- exchange		
Step 18 - Check				
Number : Multiplication and Div	ision		factor	
Step 1 - Multiplication - equal gro	oups		product	
Step 2 - Multiplying by 3			remainder	
Step 3 - Dividing by 3				
Step 5 - Multiplying by 4				
Step 6 - Dividing by 4				
Step 7 - The 4 times-table				
Step 8 - Multiplying by 8				
Step 9 - Dividing by 8				
Step 10 - The 8 times-tables	vision			
Step 1 - Comparing statements	nsion .			
Step 2 - Related calculations				
Step 3 - Multiply 2-digits by 1-di	git (1)			
Step 4 - Multiply 2-digits by 1-di	git (2)			
Step 5 - Divide 2-digits by 1-digi	† (1) + (2) Stan 7 Nivid- 2 di-i	ta hu 1		
Jiep o - Divide 2-aigits by 1-digitient divit (3)	1 (2) Step / - Divide 2-digi	15 DY 1-		
Step 8 - Scalina				
Step 9 - How many ways?				
Number: Fractions			Sixths	
Step 1 - Unit and non-unit fractio	ons		Sevenths	
Step 2 - Making the whole			Eighths	
Step 5 - Tennis			Tenths	

Step 5 - Tenths as decimals	
Step 6 - Fractions of a number line	
Step 7 - Fractions of a set of objects (1)	
Step 8 - Fractions of a set of objects (2)	
Step 9 - Fractions of a set of objects (3)	
Number: Fractions	
Step 1 - Equivalent fractions (1)	
Step 2 - Equivalent fractions (2)	
Step 3 - Equivalent fractions (3)	
Step 4 - Compare fractions	
Step 5 - Order fractions	
Step 6 - Add fractions	
Step 7 - Subtract fractions	
Measurement : Money	
Step 1 - Pounds and pence	
Step 2 - Converting pounds and pence	
Step 3 - Adding money	
Step 4 - Subtracting money	
Step 5 - Giving change	
Measurements: Length and Perimeter	perimeter
Step 1 - Measure length	millimetre
Step 2 - Equivalent lengths - m & cm	kilometre
Step 3 - Equivalent lengths - mm & cm	mile
Step 4 - Compare lengths	distance execut between to from perimeter
Step 5 - Add lengths	distance apart between to from perimeter
Step 6 - Subtract lengths	
Step 7 - Measure perimeter	
Step 8 - Calculate perimeter	
Measurement: Time	Roman numerals Earliest
Step 1 -Months and years	12-hour clock time latest
Step 2 - Hours in a day	24-bour clock time am
Step 3 - Telling the time to 5 minutes	
Step 4 - Telling the time to the minute	century p.m.
Step 5 - Using AM and PM	calendar
Step 6 - 24 hour clock	
Step 7 - Finding the duration	
Step 8 - Comparing the duration	
Step 8 - Comparing the duration Step 9 - Start and end times	
Step 8 - Comparing the duration Step 9 - Start and end times Step10 - Measuring time in seconds	
Step 8 - Comparing the duration Step 9 - Start and end times Step10 - Measuring time in seconds Measurement: Mass and Capacity	Division
Step 8 - Comparing the duration Step 9 - Start and end times Step10 - Measuring time in seconds Measurement: Mass and Capacity Step 1 - Measure mass (1)	Division
Step 8 - Comparing the duration Step 9 - Start and end times Step10 - Measuring time in seconds Measurement: Mass and Capacity Step 1 - Measure mass (1) Step 2 - Measure mass (2)	Division approximately
Step 8 - Comparing the duration Step 9 - Start and end times Step10 - Measuring time in seconds Measurement: Mass and Capacity Step 1 - Measure mass (1) Step 2 - Measure mass (2) Step 3 - Compare mass	Division approximately
Step 8 - Comparing the duration Step 9 - Start and end times Step10 - Measuring time in seconds Measurement: Mass and Capacity Step 1 - Measure mass (1) Step 2 - Measure mass (2) Step 3 - Compare mass Step 4 - Add and subtract mass	Division approximately
Step 8 - Comparing the durationStep 9 - Start and end timesStep10 - Measuring time in secondsMeasurement: Mass and CapacityStep 1 - Measure mass (1)Step 2 - Measure mass (2)Step 3 - Compare massStep 4 - Add and subtract massStep 5 - Measure capacity (1)	Division approximately
Step 8 - Comparing the durationStep 9 - Start and end timesStep10 - Measuring time in secondsMeasurement: Mass and CapacityStep 1 - Measure mass (1)Step 2 - Measure mass (2)Step 3 - Compare massStep 4 - Add and subtract massStep 5 - Measure capacity (1)Step 6 -Measure capacity (2)	Division approximately
Step 8 - Comparing the durationStep 9 - Start and end timesStep10 - Measuring time in secondsMeasurement: Mass and CapacityStep 1 - Measure mass (1)Step 2 - Measure mass (2)Step 3 - Compare massStep 4 - Add and subtract massStep 5 - Measure capacity (1)Step 6 -Measure capacity (2)Step 7 - Compare capacity	Division approximately
Step 8 - Comparing the durationStep 9 - Start and end timesStep10 - Measuring time in secondsMeasurement: Mass and CapacityStep 1 - Measure mass (1)Step 2 - Measure mass (2)Step 3 - Compare massStep 4 - Add and subtract massStep 5 - Measure capacity (1)Step 6 -Measure capacity (2)Step 7 - Compare capacityStep 8 - Add and subtract capacity	Division approximately
Step 8 - Comparing the duration Step 9 - Start and end times Step10 - Measuring time in seconds Measurement: Mass and Capacity Step 1 - Measure mass (1) Step 2 - Measure mass (2) Step 3 - Compare mass Step 4 - Add and subtract mass Step 5 - Measure capacity (1) Step 6 -Measure capacity (2) Step 7 - Compare capacity Step 8 - Add and subtract capacity Geometry: Properties of Shape	Division approximately compass point octagonal
Step 8 - Comparing the duration Step 9 - Start and end times Step10 - Measuring time in seconds Measurement: Mass and Capacity Step 1 - Measure mass (1) Step 2 - Measure mass (2) Step 3 - Compare mass Step 4 - Add and subtract mass Step 5 - Measure capacity (1) Step 6 -Measure capacity (2) Step 7 - Compare capacity Step 8 - Add and subtract capacity Geometry: Properties of Shape Step 1 - Turns and anales	Division approximately compass point octagonal north south east auadrilateral
Step 8 - Comparing the durationStep 9 - Start and end timesStep10 - Measuring time in secondsMeasurement: Mass and CapacityStep 1 - Measure mass (1)Step 2 - Measure mass (2)Step 3 - Compare massStep 4 - Add and subtract massStep 5 - Measure capacity (1)Step 6 -Measure capacity (2)Step 7 - Compare capacityStep 8 - Add and subtract capacityGeometry: Properties of ShapeStep 1 - Turns and anglesStep 2 - Right angles in shapes	Division approximately compass point octagonal north, south, east, quadrilateral want N S E W right analog
Step 8 - Comparing the duration Step 9 - Start and end times Step10 - Measuring time in seconds Measurement: Mass and Capacity Step 1 - Measure mass (1) Step 2 - Measure mass (2) Step 3 - Compare mass Step 4 - Add and subtract mass Step 5 - Measure capacity (1) Step 6 - Measure capacity (2) Step 7 - Compare capacity Step 8 - Add and subtract capacity Geometry: Properties of Shape Step 1 - Turns and angles Step 2 - Right angles in shapes Step 3 - Compare angles	Division approximately compass point octagonal north, south, east, quadrilateral west, N, S, E, W right-angled
Step 8 - Comparing the duration Step 9 - Start and end times Step10 - Measuring time in seconds Measurement: Mass and Capacity Step 1 - Measure mass (1) Step 2 - Measure mass (2) Step 3 - Compare mass Step 4 - Add and subtract mass Step 5 - Measure capacity (1) Step 6 -Measure capacity (2) Step 7 - Compare capacity Step 8 - Add and subtract capacity Geometry: Properties of Shape Step 1 - Turns and angles Step 3 - Compare angles Step 4 - Draw accurately	Division approximately compass point octagonal north, south, east, quadrilateral west, N, S, E, W right-angled horizontal, vertical, parallel,
Step 8 - Comparing the duration Step 9 - Start and end times Step10 - Measuring time in seconds Measurement: Mass and Capacity Step 1 - Measure mass (1) Step 2 - Measure mass (2) Step 3 - Compare mass Step 4 - Add and subtract mass Step 5 - Measure capacity (1) Step 6 -Measure capacity (2) Step 7 - Compare capacity Step 8 - Add and subtract capacity Geometry: Properties of Shape Step 1 - Turns and angles Step 2 - Right angles in shapes Step 4 - Draw accurately Step 5 - Horizontal and vertical	Division approximately compass point octagonal north, south, east, quadrilateral west, N, S, E, W right-angled horizontal, vertical, parallel, diagonal perpendicular
Step 8 - Comparing the duration Step 9 - Start and end times Step10 - Measuring time in seconds Measurement: Mass and Capacity Step 1 - Measure mass (1) Step 2 - Measure mass (2) Step 3 - Compare mass Step 4 - Add and subtract mass Step 5 - Measure capacity (1) Step 6 -Measure capacity (2) Step 7 - Compare capacity Step 8 - Add and subtract capacity Geometry: Properties of Shape Step 1 - Turns and angles Step 2 - Right angles in shapes Step 4 - Draw accurately Step 5 - Horizontal and vertical Step 6 - Parallel and perpendicular	Division approximately compass point octagonal north, south, east, quadrilateral west, N, S, E, W right-angled horizontal, vertical, parallel, diagonal perpendicular acute angle angle is a greater /
Step 8 - Comparing the durationStep 9 - Start and end timesStep10 - Measuring time in secondsMeasurement: Mass and CapacityStep 1 - Measure mass (1)Step 2 - Measure mass (2)Step 3 - Compare massStep 4 - Add and subtract massStep 5 - Measure capacity (1)Step 6 - Measure capacity (2)Step 7 - Compare capacityStep 8 - Add and subtract capacityGeometry: Properties of ShapeStep 1 - Turns and anglesStep 2 - Right angles in shapesStep 3 - Compare anglesStep 5 - Horizontal and verticalStep 5 - Horizontal and verticalStep 6 - Parallel and perpendicularStep 7 - Recognise and describe 2D shapes	Division approximately compass point octagonal north, south, east, quadrilateral west, N, S, E, W right-angled horizontal, vertical, parallel, diagonal perpendicular acute angle angle is a greater / obtuse angle smaller angle than
Step 8 - Comparing the durationStep 9 - Start and end timesStep10 - Measuring time in secondsMeasurement: Mass and CapacityStep 1 - Measure mass (1)Step 2 - Measure mass (2)Step 3 - Compare massStep 4 - Add and subtract massStep 5 - Measure capacity (1)Step 6 - Measure capacity (2)Step 7 - Compare capacityStep 8 - Add and subtract capacityGeometry: Properties of ShapeStep 1 - Turns and anglesStep 2 - Right angles in shapesStep 3 - Compare anglesStep 5 - Horizontal and verticalStep 6 - Parallel and perpendicularStep 7 - Recognise and describe 2D shapesStep 8 - Recognise and describe 3D shapes	Division approximately compass point octagonal north, south, east, quadrilateral west, N, S, E, W right-angled horizontal, vertical, parallel, diagonal perpendicular acute angle angle is a greater / obtuse angle smaller angle than pentagonal hemisphere
Step 8 - Comparing the durationStep 9 - Start and end timesStep10 - Measuring time in secondsMeasurement: Mass and CapacityStep 1 - Measure mass (1)Step 2 - Measure mass (2)Step 3 - Compare massStep 4 - Add and subtract massStep 5 - Measure capacity (1)Step 6 - Measure capacity (2)Step 7 - Compare capacityStep 8 - Add and subtract capacityGeometry: Properties of ShapeStep 1 - Turns and anglesStep 2 - Right angles in shapesStep 4 - Draw accuratelyStep 5 - Horizontal and verticalStep 6 - Parallel and perpendicularStep 7 - Recognise and describe 2D shapesStep 8 - Recognise and describe 3D shapesStep 9 - Make 3D shapes	Division approximately compass point octagonal north, south, east, quadrilateral west, N, S, E, W right-angled horizontal, vertical, parallel, diagonal perpendicular acute angle angle is a greater / obtuse angle smaller angle than pentagonal hemisphere hexagonal prism, triangular prism
Step 8 - Comparing the durationStep 9 - Start and end timesStep10 - Measuring time in secondsMeasurement: Mass and CapacityStep 1 - Measure mass (1)Step 2 - Measure mass (2)Step 3 - Compare massStep 4 - Add and subtract massStep 5 - Measure capacity (1)Step 6 -Measure capacity (2)Step 7 - Compare capacityStep 8 - Add and subtract capacityStep 8 - Add and subtract capacityStep 7 - Compare capacityStep 8 - Add and subtract capacityStep 9 - Nake and anglesStep 1 - Turns and anglesStep 2 - Right angles in shapesStep 4 - Draw accuratelyStep 5 - Horizontal and verticalStep 6 - Parallel and perpendicularStep 7 - Recognise and describe 2D shapesStep 8 - Recognise and describe 3D shapesStep 9 - Make 3D shapesStatistics	Division approximately compass point octagonal north, south, east, quadrilateral west, N, S, E, W right-angled horizontal, vertical, parallel, diagonal perpendicular acute angle angle is a greater / obtuse angle smaller angle than pentagonal hemisphere hexagonal prism, triangular prism
Step 8 - Comparing the durationStep 9 - Start and end timesStep10 - Measuring time in secondsMeasurement: Mass and CapacityStep 1 - Measure mass (1)Step 2 - Measure mass (2)Step 3 - Compare massStep 4 - Add and subtract massStep 5 - Measure capacity (1)Step 6 - Measure capacity (2)Step 7 - Compare capacityStep 8 - Add and subtract capacityStep 8 - Add and subtract capacityStep 7 - Compare capacityStep 8 - Add and subtract capacityGeometry: Properties of ShapeStep 1 - Turns and anglesStep 2 - Right angles in shapesStep 3 - Compare anglesStep 4 - Draw accuratelyStep 5 - Horizontal and verticalStep 6 - Parallel and perpendicularStep 7 - Recognise and describe 2D shapesStep 8 - Recognise and describe 3D shapesStep 9 - Make 3D shapesStep 1 - Pictooram	Division approximately compass point octagonal north, south, east, quadrilateral west, N, S, E, W right-angled horizontal, vertical, parallel, diagonal perpendicular acute angle angle is a greater / obtuse angle smaller angle than pentagonal perism, triangular prism Char axis, axes han shant diagonar
Step 8 - Comparing the duration Step 9 - Start and end times Step10 - Measuring time in seconds Measurement: Mass and Capacity Step 1 - Measure mass (1) Step 2 - Measure mass (2) Step 3 - Compare mass Step 4 - Add and subtract mass Step 5 - Measure capacity (1) Step 6 -Measure capacity (2) Step 7 - Compare capacity Step 8 - Add and subtract capacity Geometry: Properties of Shape Step 1 - Turns and angles Step 2 - Right angles in shapes Step 3 - Compare angles Step 4 - Draw accurately Step 5 - Horizontal and vertical Step 6 - Parallel and perpendicular Step 7 - Recognise and describe 2D shapes Step 8 - Recognise and describe 3D shapes Step 9 - Make 3D shapes Step 1 - Pictogram Step 1 - Pictogram Step 2 - Bar Charts	Division approximately compass point octagonal north, south, east, quadrilateral west, N, S, E, W right-angled horizontal, vertical, parallel, diagonal perpendicular acute angle angle is a greater / obtuse angle smaller angle than pentagonal perism, triangular prism Char axis, axes bar chart diagram facure unsure table Vann diagram
Step 8 - Comparing the durationStep 9 - Start and end timesStep10 - Measuring time in secondsMeasurement: Mass and CapacityStep 1 - Measure mass (1)Step 2 - Measure mass (2)Step 3 - Compare massStep 4 - Add and subtract massStep 5 - Measure capacity (1)Step 6 -Measure capacity (2)Step 7 - Compare capacityStep 8 - Add and subtract capacityGeometry: Properties of ShapeStep 1 - Turns and anglesStep 2 - Right angles in shapesStep 4 - Draw accuratelyStep 5 - Horizontal and verticalStep 6 - Parallel and perpendicularStep 7 - Recognise and describe 2D shapesStep 8 - Recognise and describe 3D shapesStep 9 - Make 3D shapesStep 1 - PictogramStep 2 - Bar ChartsStep 3 - Tables	Division approximately compass point octagonal north, south, east, quadrilateral west, N, S, E, W right-angled horizontal, vertical, parallel, diagonal perpendicular acute angle angle is a greater / obtuse angle smaller angle than pentagonal hemisphere hexagonal prism, triangular prism Char axis, axes bar chart diagram frequency table Venn diagram

Maths - KS2		
Key Vocabulary		
justify next		
make a statement consecutive		
Key Knowledge	Key Vocabulary	
Year 4		
Number - Place Value	ten thousand	integer
Step 1 - Roman numerals to 100	hundred thousand	positive
Step 2 - Round to the nearest 10	million	negative
Step 3 - Round to the nearest 100	sixes, sevens, nines,	above/below zero
Step 5 - Count in 1,000s Step 5 - 1,000s 100s 10s and 1s Step 6 Partitioning	one thousand more	negative numbers
Step 7 - Number line to 10,000	one thousand less	nogarite namber s
Step 8 - 1,000 more or less		
Step 9 - Compare numbers		
Step 10 - Order numbers		
Step 11 - Round to the nearest 1,000		
Step 12 - Count in 25s Step 13 - Naastive symptoms		
Step 15 - Negative humbers	inverse	
Step 1 - Add and subtract 1s 10s 100s and 1000s	thousand	
Step 2 - Add two 4-digit numbers - no exchange	mousand	
Step 3 - Add two 4-digit numbers - one exchange		
Step 4 - Add two 4-digit numbers - more than one exchange		
Step 5 - Subtract two 4-digit numbers - no exchange		
Step 6 - Subtract two 4-digit numbers - one exchange		
Step / - Subtract two 4-digit numbers - more than one exchange Step		
o - Etticient subtraction Step 9 - Estimate answers		
Step 10 - Checking strategies		
Number - Multiplication and Division	inverse	
Step 1 - Multiply by 10	square	
Step 2 - Multiply by 100	squared	
Step 3 - Divide by 10	cube	
Step 4 - Divide by 100 Step 5 - Multiply by 1 and 0	cubed	
Step 5 - Multiply by 1 and 0		
Step 7 - Multiply and divide by 6		
Step 8 - 6 times-table and division facts		
Step 9 - Multiply and divide by 9		
Step 10 - 9 times-table and division facts		
Step 11 - Multiply and divide by 7		
Step 12 - / times-table and division tacts		
Number - Multiplication and Division Step 1 - 11 and 12 times-table		
Step 2 - Multiply 3 numbers		
Step 3 - Factor pairs		
Step 4 - Efficient multiplication		
Step 5 - Written methods		
Step 6 - Multiply 2-digits by 1-digit		
Step 7 - Multiply 3-algits by 1-algit Step 8 - Divide 2 digits by 1 digit (1)		
Step 8 - Divide 2-digits by 1-digit (1) Step 9 - Divide 2-digits by 1-digit (2)		
Step 10 - Divide 3 digits by 1 digit		
Step 11 - Correspondence problems		
Number - Fractions	hundredths	decimal place
Step 1 - What is a fraction?	decimal	decimal equivalent
Step 2 - Equivalent fractions (1)	decimal fraction	proportion
Step 3 - Equivalent fractions (2)	decimal point	
Step 5 - Count in fractions		
Step 6 - Add 2 or more fractions		
Step 7 - Subtract 2 fractions		
Step 8 - Subtract from whole amounts		
Step 9 - Calculate fractions of a quantity		

Number - Decimals		
Step 1 - Recognise tenths and hundredths		
Step 2 - Tenths as decimals		
Step 3 - Tenths on a place value grid		
Step 4 - Tenths on a number line		
Step 5 - Divide 1 digit by 10		
Step 6 - Divide 2 digits by 10		
Step 7 - Hundredths		
Step 8 - Hundredths as decimals		
Step 9 - Hundredths on a place value grid		
Step 10 - Divide 1 or 2 digits by 100		
Number - Decimals		
Step 1 - Make a whole ,		
Step 2 - Write decimals		
Step 3 - Compare decimals		
Step 4 - Order decimals		
Step 5 - Round decimals		
Step 6 - Halves and quarters		
Measurement Length and Perimeter	unit	edge
Step 1 - Kilometres	standard unit	area
Step 2 - Perimeter on a grid	metric unit	covers
Step 3 - Perimeter of a rectangle	breadth	square centimetre (cm2)
Step 4 - Perimeter of rectilinear shapes		
Measurement - Area		
Step 1 -What is area?		
Step 2 - Counting squares		
Step 3 - Making shapes		
Step 4 - Comparing area		
Measurement - Money		
Step 1 - Pounds and pence		
Step 2 - Ordering amounts of money		
Step 3 - Using rounding to estimate money		
Step 4 - Four operations		
Measurement - Time	leap year	timetable
Step 1 - Hours, minutes and seconds	millennium	arrive
Step 2 - Years, months, weeks and days	noon	depart
Step 3 - Analogue to digital - 12 hour	date of birth	
Step 4 - Analogue to digital - 24 hour		
Geometry - Properties of Shape	line	2-D, two-dimensional
Step 1 - Identify angles	construct	oblong
Step 2 - Compare and order angles	sketch	rectilinear
Step 3 - Triangles	centre	equilateral triangle
Step 4 - Quadrilaterals	angle, right-angled	isosceles triangle
Step 5 - Lines of symmetry	base, square-based	scalene triangle
Step 6 - Complete a symmetrical figure	reflect, reflection	heptagon
	regular, irregular	parallelogram
	3-D, three-	rhombus
	dimensional	trapezium
	spherical	polygon
	cylindrical	polyhedron
	tetrahedron	
Geometry Position and Direction	north-east, north-	rotate, rotation
Step 1 - Describe position	west, south-east,	degree
Step 2 - Draw on a grid	south-west, NE, NW,	reflection
Step 3 - Move on a grid	SE, SW	ruler, set square
Step 4 - Describe a movement on a grid	translate, translation	angle measurer, compass
		•
Statistics	survey	
Step 1 - Interpret charts	questionnaire	
Step 2 - Comparison, sum and difference	data	
Step 3 - Introducing line graphs		
Step 4 - Line araphs		

Maths - KS2 - Year	5			
Key Vocabulary				
explain your reasoning	≥ greater than or equal to	ascending	/descending order	square number
factor pair	≤ less than or equal to	formula		prime number
divisibility				
Key Knowledge			Key Vocabular	y
Number: Place Value			•	-
Step 1 – Number to 10,000				
Step 2 - Roman numerals to 1,0	00			
Step 3 - Round to the nearest	10, 100 and 1,000			
Step 4 - Number to 100,000 Step 5 - Compare and order num	mbans to 100 000			
Step 6 - Round numbers within	100.00			
Step 7 - Numbers to a million	100,00			
Step 8 - Counting in 10s, 100s, 1	1,000s, 10,000s and 100,000s			
Step 9 - Compare and order nur	mbers to a million			
Step 10 - Round numbers to a m	nillion			
Step 11 - Negative				
Number: Addition and Subtro	action		ones boundary,	
Step 1 - Add whole numbers wi	th more than 4-digits (column met	thod)	tenths boundary	
Step 2 - Subtract whole numbe	rs with more than 4-digits		ten thousand	
(column method) Step 3 - Pound to estimate and	approximate			
Step 4 - Inverse operations (ad	Idition and subtraction)			
Step 5 - Multi-step addition and	d subtraction problems			
Number: Multiplication and D	pivision			
Step 1 - Multiples,				
Step 2 - Factors				
Step 3 - Common factors				
Step 4 - Prime numbers				
Step 5 - Square numbers				
Step 6 - Multiply by 10, 100, 10	00			
Step / - Divide by 10, 100 1000	ultiplication and Division)			
Step 8 - Multiply and divide by	multiplication and Division)			
Number: Multiplication and Div	vision			
Step 1 - Multiply 4-diaits by 1-c	digit			
Step 2 - Multiply 2-digits (area	model)			
Step 3 - Multiply 2-digits by 2-	digits			
Step 4 - Multiply 3-digits by 2-	digits			
Step 5 - Multiply 4-digits by 2-	digits			
Step 6 - Divide 4-digits by 1-dig	git			
Step 7 - Divide with remainders	S		-	
Number: Decimals and Percen	tages		in every	
Step 1 - Decimals up to 2 d.p.	(1)		for every	
Step 2 - Decimals as fractions	(1)		percent %	
Step 4 - Understand thousandt	hs		per cent, 78	
Step 5 - Thousands as decimals				
Step 6 - Rounding decimals				
Step 7 - Order and compare de	cimals			
Step 8 - Understand percentag	es			
Step 9 - Percentages as fractio	ons and decimals			
Step 10 - Equivalent				
Number: Decimals	1			
Step 1 - Adding decimals within	l I within 1			
Step 2 - Subtracting decimals				
Step 4 - Adding decimals - cros	sing the whole			
Step 5 - Adding decimals with t	the same number of decimal places	3		
Step 6 - Subtracting decimals v	with the same number of decimal r	olaces		
Step 7 - Adding decimals with c	a different number of decimal plac	ces		
Step 8 - Subtracting decimals w	with a different no. of decimal pla	ces		
Step 9 - Adding and subtracting	g wholes and decimals			
Step 10 - Decimal sequences				

Step 11 - Multiplying decimals by 10, 100 and 1,000 Step 12 - Dividing decimals by 10, 100 and 1,000		
Number: Fractions	proper/improper	
Step 1 - Equivalent fractions	fraction thousandths	
Step 2 - Improper fractions to mixed numbers	equivalent	
Step 3 - Mixed numbers to improper fractions	reduced to	
Step 4 - Number sequences	cancel	
Step 5 - Compare and order fractions less than 1		
Step 6 - Compare and order fractions greater than 1		
Step / - Add and subtract fractions		
Step 8 - Add fractions within 1 Step 9 - Add 3 or more fractions		
Step 10 - Add fractions		
Step 11 - Add mixed numbers Subtract fractions		
Step 12 - Subtract mixed numbers		
Step 13 - Subtract - breaking the whole		
Step 14 - Subtract 2 mixed numbers		
Step 15 - Multiply unit fractions by an integer		
Step 16 - Multiply non-unit fractions by an integer		
Step 16 - Multiply mixed numbers by integers		
Step 17 - Fraction of an amount Step 18 - Using fractions as operators		
Measurement: Converting Units	imperial unit	
Step 1 - Kiloarams and kilometres	discount	
Step 2 - Milligrams and millilitres	currency	
Step 3 - Metric units		
Step 4 - Imperial units		
Step 5 - Converting units of time		
Step 6 - Timetables		
Measurement: Volume	pint	
Step 1 - What is volume?	gallon	
Step 2 - Compare volume Step 3 - Estimate volume		
Step 5 - Estimate capacity		
Geometry: Perimeter and Area	radius	square metre (m2)
Step 1 - Measure perimeter	diameter	square millimetre (mm2)
Step 2 - Calculate perimeter	congruent	x-axis
Step 3 - Find unknown lengths	axis of symmetry	y-axis,
Step 4 - Area of rectangles	reflective symmetry	quadrant
Step 5 - Area of compound shapes		
Step 6 - Area of irregular shapes		
Step / - Estimate	Dadiua	y ovia
Step 1 - Can T measure angles in degrees?	diameter	x-axis, x-axis
Step 2 - Can I measure with a protractor? (1)	congruent	auadrant
Step 3 - Can I measure with a protractor? (2)	axis of symmetry	octahedron
Step 4 - Can I draw lines and angles accurately?	reflective symmetry	protractor
Step 5 - Calculating angles on a straight line?		
Step 6 - Can I calculating angles around a point?		
Step 7 - Can I calculate lengths and angles in shapes?		
Step 8 - Can I distinguish between regular and irregular polygons?		
Step 9 - Can I reason about 3-D shapes?	coordinata	
Step 1 - Position in the first quadrant	coordinate	
Step 2 - Reflection		
Step 3 - Reflection with coordinates		
Step 4 - Translation		
Step 5 - Translation with coordinates		
Statistics	database	
Step 1 - Read and interpret line graphs	bar line chart	
Step 2 - Draw line graphs	line graph	
Step 3 - Use line graphs to solve problems	maximum/minimum	
Step 4 - Kead and Interpret tables Step 5 - Two way tables	value	
Step 5 - Timetables Step 6 - Timetables	ourcome	

Maths - KS2 Key Vocabulary Key Knowledge Key Vocabulary Year 6 Key Vocabulary Number: Place Value Step 1 - Numbers to ten million Step 1 - Numbers to ten million factorise Step 3 - Round any numbers factorise Step 4 - Negative numbers factorise Step 1 - Add and subtract whole numbers factorise Step 2 - Multiply up to a 4-digit by 1-digit number factorise Step 3 - Short division factorise Step 4 - Division using factors factorise

Step 2 - Compare and order any number	
Step 3 - Round any numbers	
Step 4 - Negative numbers	
Number: Four operations	factorise
Step 1 - Add and subtract whole numbers	prime factor
Step 2 - Multiply up to a 4-digit by 1-digit number	digit total
Step 3 - Short division	
Step 4 - Division using factors	
Step 5 - Long division (1)	
Step 6 - Long division (2)	
Step 7 - Long division (3)	
Step 8 - Long division (4)	
Step 9 - Common factors	
Step 10 - Common multiples	
Step 11 - Primes	
Step 12 - Squares and cubes	
Step 13 - Order of operations	
Step 14 - Mental calculations and estimation	
Step 15 - Reasoning from known facts	
Number : Fractions	
Step 1 - Simplify fractions	
Step 2 - Fractions on a number line	
Step 3 - Compare and order fractions by the denominator	
Step 4 Compare and order fractions by the numerator	
Step 5 - Add and subtract fractions (1)	
Step 6 - Add and subtract fractions (2)	
Step 7 - Adding fractions	
Step 8 - Subtracting fractions	
Step 9 - Mixed addition and subtraction problems	
Step 10 - Multiply fractions by whole number	
Step 11 - Multiply fractions by fraction	
Step 12 - Divide a fraction by a whole number (1)	
Step 13 - Divide a fraction by a whole number (2)	
Step 14 - Four rules with fractions	
Step 15 - Fraction of an amount	
Step 16 - Fraction of an amount - finding the whole	
Number: Decimals	
Step 1 - Three decimal places	
Step 2 - Multiply by 10, 100 and 1,000	
Step 3 - Divide by 10, 100 and 1,000	
Step 4 - Multiply decimals by integers	
Step 5 - Divide decimais by integers	
Step 0 - Division to solve problems	
Step - 8 Exactions to desimals (1)	
Step - o Fractions to decimals (1)	
Number: Batio	natio
Step 1 - Using ratio language	1.010
Step 2 - Datio and fractions	
Step 2 - Tatroducing the ratio symbol	
Step 4 - Calculating ratio	
Step 5 - Using scale factors	
Step 6 - Calculating scale factors	
Step 7 - Ratio and proportion problems	
Number: Alaebra	formulae
Step 1 - Find a rule - one step	aution
Step 2 - Find a rule - two step	
Step 3 Forming expression	uriknown
	1

Step 4 - Substitution	variable	
Step 5 - Formulae		
Step 6 - Forming equations		
Step 7 - Solve simple one step equations		
Step 8 - Solve two step equations		
Step 9 - Find pairs of values		
Step 10 - Enumerate possibilities		
Measurement: Converting Units	yard, foot, feet	Greenwich Mean Time,
Step 1 - Metric measures	inch inches	British Summer Time
Step 2 - Convert metric measures	cubic	International Date Line
Step 3 - Calculate with metric measures	captimetres(cm3)	International Date Line
Step 4 - Miles and kilometres	centilie res(cm3),	
Step 5 - Imperial measures	cubic metres (m3),	
	cubic millimetres	
	(mm3), cubic	
	kilometres (km3)	
Measurement: Perimeter, Area, Volume		
Step 1 - Shapes - same area		
Step 2 - Area and perimeter		
Step 3 - Area of a triangle (1)		
Step 4 - Area of a triangle (2)		
Step 5 - Area of a triangle (3)		
Step 6 - Area of a parallelogram		
Step 7 - Volume - counting cubes		
Step 8 - Volume of a cuboid		
Geometry	circumference	intersecting
Step 1 - Coordinates in the first auadrant	concentric	intersection
Step 2 - Coordinates in four quadrants		
Step 3 - Translations	arc	piane
Step 9 - Reflections	net open/closed	
Geometry: Properties of Shape	kite	
Step 1 - Measure with a protractor	dodecahedron	
Step 2 - Introduce angles	net, open, closed	
Step 3 - Calculate angles		
Step 4 - Vertically opposite angles		
Step 5 - Angles in a triangle		
Step 6 - Angles in a triangle - special cases		
Step 7- Angles in a triangle - missing angles		
Step 8 - Angles in special quadrilaterals		
Step 9 - Angles in regular polygons		
Step 10 - Draw shapes accurately		
Step 11 - Nets of 3D shapes		
Statistics	pie chart	
Step 1 - Read and interpret line graphs	, mean (mode, median, rar	nge as estimates for this)
Step 2 - Draw line graphs	Statistics	.ge serinaree (er mio)
Step 3 - Use line graphs to solve problems	distribution	
Step 4 - Circles		
, Step 5 - Read and interpret pie charts		
Step 6 - Pie charts with percentages		
Step 7 - Draw pie charts		
Step 8 - The mean		

Ready-to-progress criteria and the curriculum

The ready-to-progress criteria in this document are organised into 6 strands, each of which has its own code for ease of identification. These are listed below. *Measurement* and *Statistics* are integrated as applications of number criteria, and elements of measurement that relate to shape are included in the *Geometry* strand.

Ready-to-progress criteria strands	Code
Number and place value	NPV
Number facts	NF
Addition and subtraction	AS
Multiplication and division	MD
Fractions	F
Geometry	G

Year 1 guidance

Previous experience	Year 1 ready-to-progress criteria	Future applications
Begin to develop a sense of the number system by verbally counting forward to and beyond 20, pausing at each multiple of 10.	<u>1NPV–1</u> Count within 100, forwards and backwards, starting with any number.	Count through the number system. Place value within 100. Compare and order numbers. Add and subtract within 100.
Play games that involve moving along a numbered track, and understand that larger numbers are further along the track.	<u>1NPV-2</u> Reason about the location of numbers to 20 within the linear number system, including comparing using < > and =	Reason about the location of larger numbers within the linear number system. Compare and order numbers. Read scales.
Begin to experience partitioning and combining numbers within 10.	<u>1NF-1</u> Develop fluency in addition and subtraction facts within 10.	Add and subtract across 10. All future additive calculation. Add within a column during columnar addition when the column sums to less than 10 (no regrouping). Subtract within a column during columnar subtraction when the minuend of the column is larger than the subtrahend (no exchanging).
Distribute items fairly, for example, put 3 marbles in each bag. Recognise when items are distributed unfairly.	1NE-2 Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers.	Recall the 2, 5 and 10 multiplication tables. Carry out repeated addition and multiplication of 2, 5, and 10, and divide by 2, 5 and 10. Identify multiples of 2, 5 and 10. Unitise in tens. Identify odd and even numbers.

Previous experience	Year 1 ready-to-progress criteria	Future applications
Understand the cardinal value of number words, for example understanding that 'four' relates to 4 objects. Subitise for up to to 5 items. Automatically show a given number using fingers.	1AS-1 Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers.	Add and subtract within 10.
Devise and record number stories, using pictures, numbers and symbols (such as arrows).	1AS-2 Read, write and interpret equations containing addition (+), subtraction (_) and equals (_) symbols, and relate additive expressions and equations to real-life contexts.	Represent composition and decomposition of numbers using equations.
See, explore and discuss models of common 2D and 3D shapes with varied dimensions and presented in different orientations (for example, triangles not always presented on their base).	1G–1 Recognise common 2D and 3D shapes presented in different orientations, and know that rectangles, triangles, cuboids and pyramids are not always similar to one another.	Describe properties of shape. Categorise shapes. Identify similar shapes.
 Select, rotate and manipulate shapes for a particular purpose, for example: rotating a cylinder so it can be used to build a tower rotating a puzzle piece to fit in its place 	1G–2 Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations.	Find the area or volume of a compound shape by decomposing into constituent shapes. Rotate, translate and reflect 2D shapes. Identify congruent shapes.

Year 2 guidance

Year 1 conceptual prerequesites	Year 2 ready-to- progress criteria	Future applications
Know that 10 ones are equivalent to 1 ten. Know that multiples of 10 are made up from a number of tens, for example, 50 is 5 tens.	2NPV-1 Recognise the place value of each digit in two-digit numbers, and compose and decompose two- digit numbers using standard and non- standard partitioning.	Compare and order numbers. Add and subtract using mental and formal written methods.
Place the numbers 1 to 9 on a marked, but unlabelled, 0 to 10 number line. Estimate the position of the numbers 1 to 9 on an unmarked 0 to 10 number line. Count forwards and backwards to and from 100.	2NPV–2 Reason about the location of any two- digit number in the linear number system, including identifying the previous and next multiple of 10.	Compare and order numbers. Round whole numbers. Subtract ones from a multiple of 10, for example: 30-3=27
Develop fluency in addition and subtraction facts within 10.	2NF-1 Secure fluency in addition and subtraction facts within 10, through continued practice.	All future additive calculation. Add within a column during columnar addition when the column sums to less than 10 (no regrouping). Subtract within a column during columnar subtraction when the minuend of the column is larger than the subtrahend (no exchanging).

Year 1 conceptual prerequesites	Year 2 ready-to- progress criteria	Future applications
Learn and use number bonds to 10, for example: 8+?=10 Partition numbers within 10, for example: 5=2+3	2AS-1 Add and subtract across 10, for example: 8+5=13 13-5=8	Add and subtract within 100: add and subtract any 2 two- digit numbers, where the ones sum to 10 or more, for example: 26+37=63
		Use knowledge of unitising to add and subtract across other boundaries, for example: 1.3 - 0.5 = 0.8 Add within a column during columnar addition when the column sums to more than 10 (regrouping), for example, for: 126 + 148
		Subtract within a column during columnar subtraction when the minuend of the column is smaller than the subtrahend (exchanging), for example, for: 45 3 -12 4
Solve missing addend problems within 10, for example: $4 + \boxed{} = 10$	2AS–2 Recognise the subtraction structure of 'difference' and answer questions of the form, "How many more?".	Solve contextual subtraction problems for all three subtraction structures (reduction, partitioning and difference) and combining with other operations.
Add and subtract within 10, for example: 6+3=9 6-2=4 Know that a multiple of 10 is made up from a number of tens, for example, 50 is 5 tens.	2AS-3 Add and subtract within 100 by applying related one- digit addition and subtraction facts: add and subtract only ones or only tens to/from a two-digit number.	Add and subtract using mental and formal written methods.

Year 1 conceptual prerequesites	Year 2 ready-to- progress criteria	Future applications
Add and subtract within 10. Know that a multiple of 10 is made up from a number of tens, for example, 50 is 5 tens.	2AS-4 Add and subtract within 100 by applying related one- digit addition and subtraction facts: add and subtract any 2 two- digit numbers.	Add and subtract numbers greater than 100, recognising unitising, for example: 32 ones + 23 ones = 55 ones so 32 tens + 23 tens = 55 tens 320 + 230 = 550
Count in multiples of 2, 5 and 10.	2MD–1 Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables.	Use multiplication to represent repeated addition contexts for other group sizes. Memorise multiplication tables.
Count in multiples of 2, 5 and 10 to find how many groups of 2, 5 or 10 there are in a particular quantity, set in everyday contexts.	2MD–2 Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotitive division).	Division with other divisors.
Recognise common 2D and 3D shapes presented in different orientations.	2G-1 Use precise language to describe the properties of 2D and 3D shapes, and compare shapes by reasoning about similarities and differences in properties.	Identify similar shapes. Describe and compare angles. Draw polygons by joining marked points Identify parallel and perpendicular sides. Identify regular polygons Find the perimeter of regular and irregular polygons. Compare areas and calculate the area of rectangles (including squares) using standard units. Compare areas and calculate the area of rectangles (including squares) using standard units.

Year 3 guidance

Year 2 conceptual prerequisite	Year 3 ready-to-progress criteria	Future applications
Know that 10 ones are equivalent to 1 ten, and that 40 (for example) can be composed from 40 ones or 4 tens. Know how many tens there are in multiples of 10 up to 100.	3NPV–1 Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10; apply this to identify and work out how many 10s there are in other three-digit multiples of 10.	Solve multiplication problems that that involve a scaling structure, such as 'ten times as long'.
Recognise the place value of each digit in <i>two</i> -digit numbers, and compose and decompose <i>two</i> -digit numbers using standard and non-standard partitioning.	3NPV–2 Recognise the place value of each digit in <i>three</i> -digit numbers, and compose and decompose <i>three</i> -digit numbers using standard and non-standard partitioning.	Compare and order numbers. Add and subtract using mental and formal written methods.
Reason about the location of any <i>two</i> -digit number in the linear number system, including identifying the previous and next multiple of 10.	<u>3NPV–3</u> Reason about the location of any <i>three</i> -digit number in the linear number system, including identifying the previous and next multiple of 100 and 10.	Compare and order numbers. Estimate and approximate to the nearest multiple of 1,000, 100 or 10.
Count in multiples of 2, 5 and 10.	<u>3NPV-4</u> Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts.	Read scales on graphs and measuring instruments.

Year 2 conceptual prerequisite	Year 3 ready-to-progress criteria	Future applications
Add and subtract across 10, for example: 8+5=13 13-5=8	<u>3NF–1</u> Secure fluency in addition and subtraction facts that bridge 10, through continued practice.	Add and subtract mentally where digits sum to more than 10, for example: 26+37 = 63
		Add and subtract across other powers of 10, without written methods, for example: 1.3-0.4 = 0.9 Add within a column during columnar addition when the column sums to more than 10 (regrouping), for example, for: 126+148
		Subtract within a column during columnar subtraction when the minuend of the column is smaller than the subtrahend (exchanging), for example, for: 453-124
Calculate products within the 2, 5 and 10 multiplication tables.	3NF-2 Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number.	Use multiplication facts during application of formal written layout. Use division facts during short division and long division.
Automatically recall addition and subtraction facts within 10, and across 10. Unitise in tens: understand that 10 can be thought of as a single unit of 1 ten.	3NF-3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10), for example: 80 + 60 = 140 140 - 60 = 80 $30 \times 4 = 120$ $120 \div 4 = 30$	Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100), for example: 8 + 6 = 14 and $14 - 6 = 8so800 + 600 = 1,4001,400 - 600 = 8003 \times 4 = 12 and 12 \div 4 = 3so300 \times 4 = 1,2001,200 \div 4 = 300$

Year 2 conceptual prerequisite	Year 3 ready-to-progress criteria	Future applications
Automatically recall number bonds to 9 and to 10. Know that 10 ones are equivalent to 1 ten, and 10 tens are equivalent to 1 hundred.	<u>3AS-1</u> Calculate complements to 100, for example: 46 + ? = 100	Calculate complements to other numbers, particularly powers of 10. Calculate how much change is due when paying for an item.
Automatically recall addition and subtraction facts within 10 and across 10. Recognise the place value of each digit in two- and three-digit numbers. Know that 10 ones are equivalent to 1 ten, and 10 tens are equivalent to 1 hundred.	3AS-2 Add and subtract up to three-digit numbers using columnar methods.	Add and subtract other numbers, including four- digits and above, and decimals, using columnar methods.
Have experience with the commutative property of addition, for example, have recognised that $3+2$ and 2+3 have the same sum. Be able to write an equation in different ways, for example, 2+3=5 and $5=2+3Write equations torepresent addition andsubtraction contexts.$	3AS-3 Manipulate the additive relationship: Understand the inverse relationship between addition and subtraction, and how both relate to the part-part-whole structure. Understand and use the commutative property of addition, and understand the related property for subtraction.	All future additive reasoning.
Recognise repeated addition contexts and represent them with multiplication equations. Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotitive division).	3MD–1 Apply known multiplication and division facts to solve contextual problems with different structures, including quotitive and partitive division.	

Year 2 conceptual prerequisite	Year 3 ready-to-progress criteria	Future applications
	3F–1 Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts.	Use unit fractions as the basis to understand non- unit fractions, improper fractions and mixed numbers, for example: $\frac{2}{5}$ is 2 one-fifths $\frac{6}{5}$ is 6 one-fifths, so $\frac{6}{5} = 1\frac{1}{5}$
	3F–2 Find unit fractions of quantities using known division facts (multiplication tables fluency).	Apply knowledge of unit fractions to non-unit fractions.
Reason about the location of whole numbers in the linear number system.	3F–3 Reason about the location of any fraction within 1 in the linear number system.	Compare and order fractions.
Automatically recall addition and subtraction facts within 10. Unitise in tens: understand that 10 can be thought of as a single unit of 1 ten, and that these units can be added and subtracted.	3F–4 Add and subtract fractions with the same denominator, within 1.	Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers.
Recognise standard and non-standard examples of 2D shapes presented in different orientations. Identify similar shapes.	<u>3G–1</u> Recognise right angles as a property of shape or a description of a turn, and identify right angles in 2D shapes presented in different orientations.	Compare angles. Estimate and measure angles in degrees.
Compose 2D shapes from smaller shapes to match an exemplar, rotating and turning over shapes to place them in specific orientations.	<u>3G–2</u> Draw polygons by joining marked points, and identify parallel and perpendicular sides.	Find the area or volume of a compound shape by decomposing into constituent shapes. Find the perimeter of regular and irregular polygons.

Year 4 guidance

Year 3 conceptual prerequesite	Year 4 ready-to-progress criteria	Future applications
Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of 10.	4NPV–1 Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100.	Solve multiplication problems that that involve a scaling structure, such as '10 times as long'.
Recognise the place value of each digit in <i>three</i> -digit numbers, and compose and decompose <i>three</i> -digit numbers using standard and non-standard partitioning.	4NPV–2 Recognise the place value of each digit in <i>four</i> -digit numbers, and compose and decompose <i>four</i> -digit numbers using standard and non-standard partitioning.	Compare and order numbers. Add and subtract using mental and formal written methods.
Reason about the location of any <i>three</i> - digit number in the linear number system, including identifying the previous and next multiple of 10 and 100.	4NPV–3 Reason about the location of any <i>four</i> -digit number in the linear number system, including identifying the previous and next multiple of 1,000 and 100, and rounding to the nearest of each.	Compare and order numbers. Estimate and approximate to the nearest multiple of 1,000, 100 or 10.
Divide 100 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 100 with 2, 4, 5 and 10 equal parts.	4NPV-4 Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts.	Read scales on graphs and measuring instruments.
Recall multiplication and division facts in the 5 and 10, and 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number.	4NF-1 Recall multiplication and division facts up to 12×12 , and recognise products in multiplication tables as multiples of the corresponding number.	Use multiplication facts during application of formal written methods. Use division facts during application of formal written methods.

Year 3 conceptual prerequesite	Year 4 ready-to-progress criteria	Future applications
Use known division facts to solve division problems. Calculate small differences, for example: 74 - 72 = 2	4NF-2 Solve division problems, with two-digit dividends and one-digit divisors, that involve remainders, for example: $74 \div 9 = 8 r 2$ and interpret remainders appropriately according to the context.	Correctly represent and interpret remainders when using short and long division.
Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10), for example: 80 + 60 = 140 140 - 60 = 80 $30 \times 4 = 120$ $120 \div 4 = 30$	4NF-3 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 100), for example: 8 + 6 = 14 and $14 - 6 = 8so800 + 600 = 1,4001,400 - 600 = 8003 \times 4 = 12 and 12 \div 4 = 3so300 \times 4 = 1,2001,200 \div 4 = 300$	Apply place-value knowledge to known additive and multiplicative number facts, extending to a whole number of larger powers of ten and powers of ten smaller than one, for example: 800,000 + 600,000 = 1,400,000 1,400,000 - 600,000 = 800,000 $0.03 \times 4 = 0.12$ $0.12 \div 4 = 0.03$
Multiply two-digit numbers by 10, and divide three-digit multiples of 10 by 10.	4MD-1 Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size.	Convert between different metric units of measure. Apply multiplication and division by 10 and 100 to calculations involving decimals, for example: $0.03 \times 100 = 3$ $3 \div 100 = 0.03$
Understand the inverse relationship between multiplication and division. Write and use multiplication table facts with the factors presented in either order.	4MD–2 Manipulate multiplication and division equations, and understand and apply the commutative property of multiplication.	Recognise and apply the structures of multiplication and division to a variety of contexts.
	<u>4MD–3</u> Understand and apply the distributive property of multiplication.	Recognise when to use and apply the distributive property of multiplication in a variety of contexts.

Year 3 conceptual prerequesite	Year 4 ready-to-progress criteria	Future applications
Reason about the location of fractions less than 1 in the linear number system.	4F–1 Reason about the location of mixed numbers in the linear number system.	Compare and order fractions.
Identify unit and non- unit fractions.	<u>4F–2</u> Convert mixed numbers to improper fractions and vice versa.	Compare and order fractions. Add and subtract fractions where calculation bridges whole numbers.
Add and subtract fractions with the same denominator, within 1 whole, for example: $\frac{2}{5} + \frac{2}{5} = \frac{4}{5}$	4F-3 Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers, for example: $\frac{7}{5} + \frac{4}{5} = \frac{11}{5}$ $3\frac{7}{8} - \frac{2}{8} = 3\frac{5}{8}$ $7\frac{2}{5} + \frac{4}{5} = 8\frac{1}{5}$ $8\frac{1}{5} - \frac{4}{5} = 7\frac{2}{5}$	
Draw polygons by joining marked points.	4G–1 Draw polygons, specified by coordinates in the first quadrant, and translate within the first quadrant.	Draw polygons, specified by coordinates in the 4 quadrants.
Measure lines in centimetres and metres. Add more than 2 addends. Recall multiplication table facts.	4G–2 Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal and the angles are equal. Find the perimeter of regular and irregular polygons.	Draw, compose and decompose shapes according to given properties, dimensions, angles or area.
	4G–3 Identify line symmetry in 2D shapes presented in different orientations. Reflect shapes in a line of symmetry and complete a symmetric figure or pattern with respect to a specified line of symmetry.	Draw polygons, specified by coordinates in the 4 quadrants: draw shapes following translation or reflection in the axes.

Year 5 guidance

Year 4 conceptual prerequesite	Year 5 ready-to-progress criteria	Future applications
Know that 10 hundreds are equivalent to 1 thousand, and that 1,000 is 10 times the size of 100; apply this to identify and work out how many 100s there are in other four-digit multiples of 100.	5NPV-1 Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01.	Solve multiplication problems that have the scaling structure, such as 'ten times as long'. Understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal fraction.
Recognise the place value of each digit in four-digit numbers, and compose and decompose four-digit numbers using standard and non-standard partitioning.	5NPV–2 Recognise the place value of each digit in numbers with up to 2 decimal places, and compose and decompose numbers with up to 2 decimal places using standard and non-standard partitioning.	Compare and order numbers, including those with up to 2 decimal places. Add and subtract using mental and formal written methods.
Reason about the location of any four-digit number in the linear number system, including identifying the previous and next multiple of 1,000 and 100, and rounding to the nearest of each.	5NPV–3 Reason about the location of any number with up to 2 decimals places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each.	Compare and order numbers, including those with up to 2 decimal places. Estimate and approximate to the nearest 1 or 0.1.
Divide 1,000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1,000 with 2, 4, 5 and 10 equal parts.	5NPV-4 Divide 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in units of 1 with 2, 4, 5 and 10 equal parts.	Read scales on graphs and measuring instruments.

Year 4 conceptual prerequesite	Year 5 ready-to-progress criteria	Future applications
Divide 100 and 1,000 into 2, 4, 5 and 10 equal parts. Find unit fractions of quantities using known division facts (multiplication tables fluency).	<u>5NPV–5</u> Convert between units of measure, including using common decimals and fractions.	Read scales on measuring instruments, and on graphs related to measures contexts. Solve measures problems involving different units by converting to a common unit.
Recall multiplication and division facts up to 12×12 . Solve division problems, with two-digit dividends and one- digit divisors, that involve remainders, for example: $74 \div 9 = 8 r 2$	<u>5NF-1</u> Secure fluency in multiplication table facts, and corresponding division facts, through continued practice.	Use multiplication facts during application of formal written layout. Use division facts during short division and long division.
Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10 or 100), for example: 8 + 6 = 14 80 + 60 = 140 800 + 600 = 1,400 $3 \times 4 = 12$ $30 \times 4 = 120$ $300 \times 4 = 1,200$	5NF-2 Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth), for example: 8 + 6 = 14 0.8 + 0.6 = 1.4 0.08 + 0.06 = 0.14 $3 \times 4 = 12$ $0.3 \times 4 = 1.2$ $0.03 \times 4 = 0.12$	Recognise number relationships within the context of place value to develop fluency and efficiency in calculation.
Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to scaling a number by 10 or 100.	5MD–1 Multiply and divide numbers by 10 and 100; understand this as equivalent to making a number 10 or 100 times the size, or 1 tenth or 1 hundredth times the size.	Convert between different metric units of measure.

Year 4 conceptual prerequesite	Year 5 ready-to-progress criteria	Future applications
Recall multiplication and division facts up to 12 × 12, and recognise products in multiplication tables as multiples of the corresponding number. Recognise multiples of 10, 100 and 1,000. Apply place-value knowledge to known additive and multiplicative number facts. Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients).	<u>5MD–2</u> Find factors and multiples of positive whole numbers, including common factors and common multiples, and express a given number as a product of 2 or 3 factors.	Solve contextual division problems. Simplify fractions. Express fractions in the same denomination.
Recall multiplication facts up to 12 × 12. Manipulate multiplication and division equations.	5MD-3 Multiply any whole number with up to 4 digits by any one-digit number using a formal written method.	Solve contextual and non- contextual multiplication problems using a formal written method.
Recall multiplication and division facts up to 12×12 . Manipulate multiplication and division equations. Solve division problems, with two-digit dividends and one- digit divisors, that involve remainders, for example: $74 \div 9 = 8 r 2$ and interpret remainders appropriately according to the context.	5MD-4 Divide a number with up to 4 digits by a one-digit number using a formal written method, and interpret remainders appropriately for the context.	Solve contextual and non- contextual division problems using a formal written method.
Recall multiplication and division facts up to 12 × 12. Find unit fractions of quantities using known division facts (multiplication- tables fluency). Unitise using unit fractions (for example, understand that there are 3 one-fifths in three- fifths).	<u>5F–1</u> Find non-unit fractions of quantities.	Solve multiplication problems that have the scaling structure.

Year 4 conceptual prerequesite	Year 5 ready-to-progress criteria	Future applications
Recall multiplication and division facts up to 12 × 12. Reason about the location of fractions in the linear number system.	5F–2 Find equivalent fractions and understand that they have the same value and the same position in the linear number system.	Compare and order fractions. Use common factors to simplify fractions. Use common multiples to express fractions in the
		same denomination. Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.
Divide powers of 10 into 2, 4, 5 and 10 equal parts.	<u>5F-3</u> Recall decimal fraction equivalents for $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$ and $\frac{1}{10}$, and for multiples of these proper fractions.	Read scales on graphs and measuring instruments. Know percentage equivalents of common fractions.
Recognise right angles as a property of shape or a description of a turn, and identify right angles in 2D shapes presented in different orientations.	5G–1 Compare angles, estimate and measure angles in degrees (°) and draw angles of a given size.	Solve problems involving missing angles.
angles of a polygon are equal or not.		
Compose polygons from smaller shapes. Recall multiplication facts up to 12×12 .	<u>5G-2</u> Compare areas and calculate the area of rectangles (including squares) using standard units.	Calculate the area of compound rectilinear shapes and other 2D shapes, including triangles and parallelograms, using standard units.
		Use the relationship between side-length and perimeter, and between side-length and area to calculate unknown values.

Year 6 guidance

Year 5 conceptual prerequesite	Year 6 ready-to- progress criteria	Key stage 3 applications
Understand the relationship between powers of 10 from 1 hundredth to 1,000 in terms of grouping and exchange (for example, 1 is equal to 10 tenths) and in terms of scaling (for example, 1 is ten times the size of 1 tenth).	6NPV–1 Understand the relationship between powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1,000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply and divide by 10, 100 and 1,000).	Understand and use place value for decimals, measures, and integers of any size. Interpret and compare numbers in standard form $A \times 10^{n} 1 \le A < 10^{-1}$, where <i>n</i> is a positive or negative integer or zero.
Recognise the place value of each digit in numbers with units from thousands to hundredths and compose and decompose these numbers using standard and non- standard partitioning.	6NPV <u>-2</u> Recognise the place value of each digit in numbers up to 10 million, including decimal fractions, and compose and decompose numbers up to 10 million using standard and non- standard partitioning.	Understand and use place value for decimals, measures, and integers of any size. Order positive and negative integers, decimals, and fractions. Use a calculator and other technologies to calculate results accurately and then interpret them appropriately.
Reason about the location of numbers between 0.01 and 9,999 in the linear number system. Round whole numbers to the nearest multiple of 1,000, 100 or 10, as appropriate. Round decimal fractions to the nearest whole number or nearest multiple of 0.01	6NPV-3 Reason about the location of any number up to 10 million, including decimal fractions, in the linear number system, and round numbers, as appropriate, including in contexts.	Order positive and negative integers, decimals, and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, \neq , <, >, \leq , \geq Round numbers and measures to an appropriate degree of accuracy (for example, to a number of decimal places or significant figures). Use approximation through rounding to estimate answers and calculate possible resulting errors expressed using inequality notation $a < x \le b$

Year 5 conceptual prerequesite	Year 6 ready-to- progress criteria	Key stage 3 applications
Divide 1000, 100 and 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines with 2, 4, 5 and 10 equal parts.	6NPV-4 Divide powers of 10, from 1 hundredth to 10 million, into 2, 4, 5 and 10 equal parts, and read scales/number lines with labelled intervals divided into 2, 4, 5 and 10 equal parts.	Use standard units of mass, length, time, money, and other measures, including with decimal quantities. Construct and interpret appropriate tables, charts, and diagrams.
Be fluent in all key stage 2 additive and multiplicative number facts (see <u>Appendix:</u> <u>number facts fluency</u> <u>overview</u>) and calculation. Manipulate additive equations, including applying understanding of the inverse relationship between addition and subtraction, and the commutative property of addition. Manipulate multiplicative equations, including applying understanding of the inverse relationship between multiplication and division, and the commutative property of multiplication.	6AS/MD-1 Understand that 2 numbers can be related additively or multiplicatively, and quantify additive and multiplicative relationships (multiplicative relationships restricted to multiplication by a whole number).	Understand that a multiplicative relationship between 2 quantities can be expressed as a ratio or a fraction. Express 1 quantity as a fraction of another, where the fraction is less than 1 and greater than 1. Interpret mathematical relationships both algebraically and geometrically. Interpret when the structure of a numerical problem requires additive, multiplicative or proportional reasoning.
Make a given number (up to 9,999, including decimal fractions) 10, 100, 1 tenth or 1 hundredth times the size (multiply and divide by 10 and 100). Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 10, 100, 1 tenth or 1 hundredth). Manipulate additive equations. Manipulate multiplicative equations.	<u>6AS/MD-1</u> Use a given additive or multiplicative calculation to derive or complete a related calculation, using arithmetic properties, inverse relationships, and place-value understanding.	Recognise and use relationships between operations including inverse operations. Use algebra to generalise the structure of arithmetic, including to formulate mathematical relationships. Understand and use standard mathematical formulae; rearrange formulae to change the subject.

Year 5 conceptual prerequesite	Year 6 ready-to- progress criteria	Key stage 3 applications
Recall multiplication and division facts up to 12 × 12. Apply place-value knowledge to known additive and multiplicative number facts.	6AS/MD-3 Solve problems involving ratio relationships.	Use ratio notation, including reduction to simplest form. Divide a given quantity into 2 parts in a given part:part or part:whole ratio; express the division of a quantity into 2 parts as a ratio.
Be fluent in all key stage 2 additive and multiplicative number facts and calculation. Manipulate additive equations. Manipulate multiplicative equations. Find a fraction of a quantity.	6AS/MD-4 Solve problems with 2 unknowns.	Reduce a given linear equation in two variables to the standard form y = mx + c; calculate and interpret gradients and intercepts of graphs of such linear equations numerically, graphically and algebraically. Use linear and quadratic graphs to estimate values of y for given values of x and vice versa and to find approximate solutions of simultaneous linear equations.
Recall multiplication and division facts up to 12 × 12 . Find factors and multiples of positive whole numbers, including common factors and common multiples. Find equivalent fractions and understand that they have the same value and the same position in the linear number system.	6F–1 Recognise when fractions can be simplified, and use common factors to simplify fractions.	Use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation property. Simplify and manipulate algebraic expressions by taking out common factors.

Year 5 conceptual prerequesite	Year 6 ready-to- progress criteria	Key stage 3 applications
Recall multiplication and division facts up to 12 × 12 . Find factors and multiples of positive whole numbers. Find equivalent fractions. Reason about the location of fractions and mixed numbers in the linear number system.	<u>6F-2</u> Express fractions in a common denomination and use this to compare fractions that are similar in value.	Order positive and negative integers, decimals and fractions. Use the 4 operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative. Use and interpret algebraic notation, including: a/b in place of $a \div b$ coefficients written as fractions rather than as decimals.
Reason about the location of fractions and mixed numbers in the linear number system. Find equivalent fractions.	<u>6F-3</u> Compare fractions with different denominators, including fractions greater than 1, using reasoning, and choose between reasoning and common denomination as a comparison strategy.	Order positive and negative integers, decimals, and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, \neq , <, >, \leq , \geq
Find the perimeter of regular and irregular polygons. Compare angles, estimate and measure angles in degrees (°) and draw angles of a given size. Compare areas and calculate the area of rectangles (including squares) using standard units.	<u>6G–1</u> Draw, compose, and decompose shapes according to given properties, including dimensions, angles and area, and solve related problems.	Draw shapes and solve more complex geometry problems (see Mathematics programmes of study: key stage 3 - Geometry and measures).