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HPA Maths Long Term Map – KS2	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
Year 3	**Number – Place Value** -count from 0 in multiples of 4, 8, 50 and 100; -find 10 or 100 more or less than a given number. - compare and order numbers up to 1000 - identify, represent and estimate numbers using different **Number – Addition and Subtraction** Add and subtract numbers mentally, including: -a three-digit number and ones. -a three-digit number and tens. -a three-digit number and hundreds. Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction	**Number – Addition and Subtraction** -estimate the answer to a calculation and use inverse operations to check answers. -solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. **Number – Multiplication and Division** -recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. - write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.	**Number – Multiplication and Division** -solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects. -embed use of formal written methods. **Measurement – Length, Perimeter and Area** -measure, compare, add and subtract: **lengths** (m/cm/mm); -measure the **perimeter** of simple 2-D shapes. **Number – Fractions** -recognise, find and write fractions of a discrete set of objects: unit fractions and non-	**Number – Fractions** -recognise and show, using diagrams, equivalent fractions with small denominators. -add and subtract fractions with the same denominator within one whole. -compare and order unit fractions, and fractions with the same denominators. -solve problems involving fractions. **Measurement – Mass and Capacity** -measure, compare, add and subtract: **mass** (kg/g); **volume/capacity** (l/ml) *Revisiting concepts, consolidating learning and more practise at applying*	**Number – Decimals** -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 tenths. -add and subtract amounts of **money** to give change, using both £ and p in practical contexts. **Measurement – Time** -compare durations of events, for example to calculate the time taken by particular events or tasks. -estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight. -tell and write the time from an analogue clock, including using Roman numerals from	**Statistics – Interpreting, Constructing and Presenting Data** -interpret and present data using bar charts, pictograms and tables. -solve one-step and two-step questions [e.g. 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables. **Geometry – Properties of Shape** -draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them. -recognise angles as a property of shape or a description of a turn. -identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle.

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			unit fractions with small denominators. -recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.	*knowledge and skills learnt*	I to XII, and 12-hour and 24-hour clocks. -know the number of seconds in a minute and the number of days in each month, year and leap year.	-identify horizontal and vertical lines and pairs of perpendicular and parallel lines. *Revisiting concepts, consolidating learning and more practise at applying knowledge and skills learnt*
Year 4	**Number – Place Value** -count in multiples of 6, 7, 9, 25 and 1000. -find 1000 more or less than a given number. -order and compare numbers beyond 1000. -count backwards through zero to include negative numbers. -round any number to the nearest 10, 100 or 1 000. -recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones). -read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value. **Number – Addition and Subtraction** -add and subtract numbers with up to 4 digits using the formal written methods of	**Number – Addition and Subtraction** -estimate and use inverse operations to check answers to a calculation. -solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. **Number – Multiplication and Division** -recall multiplication and division facts for multiplication tables up to 12 × 12. -use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers. -recognise and use factor pairs and commutativity in mental calculations. -multiply two-digit and three-digit numbers by a	**Number – Multiplication and Division** -solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects. **Measurement – Length, Perimeter and Area** -measure and calculate the **perimeter** of a rectilinear figure (including squares) in centimetres and metres. -find the area of rectilinear shapes by counting squares. **Number – Fractions**	**Number – Fractions** -count up and down in hundredths. -recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. **Number – Decimals** -compare numbers with the same number of decimal places up to two decimal places. -round decimals with one decimal place to the nearest whole number. -recognise and write decimal equivalents of any number of tenths or hundredths. -recognise and write decimal equivalents to $^{1}/_{4}$; $^{1}/_{2}$; $^{3}/_{4}$	**Number – Decimals** -find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths. -solve simple measure and money problems involving fractions and decimals to two decimal places. -estimate, compare and calculate different measures, including money in pounds and pence. **Measurement – Time** -read, write and convert time between analogue and digital 12 and 24-hour clocks. -solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. **Statistics – Interpreting, Constructing and Presenting Data**	**Geometry – Properties of Shape** -identify lines of symmetry in 2-D shapes presented in different orientations. -complete a simple symmetric figure with respect to a specific line of symmetry. -compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. -identify acute and obtuse angles and compare and order angles up to two right angles by size. **Geometry – Position and Direction** -describe positions on a 2-D grid as coordinates in the first quadrant. -describe movements between positions as translations of a given unit to the left/right and up/down. -plot specified points and draw sides to complete a given polygon.

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	columnar addition and subtraction where appropriate.	one-digit number using formal written layout.	-recognise and show, using diagrams, families of common equivalent fractions. -add and subtract - fractions with the same denominator. 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.	*Revisiting concepts, consolidating learning and more practise at applying knowledge and skills learnt*	-interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. -solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	*Revisiting concepts, consolidating learning and more practise at applying knowledge and skills learnt*
Year 5	**Number – Place Value** -count forwards or backwards in steps of powers of 10 for any given number up to 1000 000. -read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit. -interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero. -read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	**Statistics – Interpreting, Constructing and Presenting Data** -complete, read and interpret information in tables, including timetables. -solve comparison, sum and difference problems using information presented in a line graph. **Number – Multiplication and Division** -multiply and divide numbers mentally drawing upon known facts. -multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.	**Number – Multiplication and Division** -multiply numbers up to 4 digits by a one or two-digit number using a formal written method, including long multiplication for two-digit numbers. -divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context. -recognise and use square numbers and	**Number – Fractions** -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. $^{2}/_{5} + {}^{4}/_{5} = {}^{6}/_{5} = 1\,{}^{1}/_{5}$) -multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. **Number – Decimals and Percentages**	**Number – Decimals** -recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. -read, write, order and compare numbers with up to three decimal places. -read, write, order and compare numbers with up to three decimal places. -round decimals with two decimal places to the nearest whole number and to one decimal place. -solve problems involving numbers up to three decimal places. -solve problems which require knowing percentage	**Geometry – Properties of Shape** -distinguish between regular and irregular polygons based on reasoning about equal sides and angles. -use the properties of rectangles to deduce related facts and find missing lengths and angles. -identify 3-D shapes, including cubes and other cuboids, from 2-D representations. **Geometry – Position and Direction** -identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and

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	Number – Addition and Subtraction -add and subtract numbers mentally with increasingly large numbers. -add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction). -solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.	-identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. **Measurement – Length, Perimeter and Area** -measure and calculate the **perimeter** of composite rectilinear shapes in centimetres and metres. -calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes.	cube numbers, and the notation for squared (^{2}) and cubed (^{3}) -solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. **Number – Fractions** -compare and order fractions whose denominators are all multiples of the same number. -add and subtract fractions with the same denominator and multiples of the same number.	-read and write decimal numbers as fractions (e.g. 0.71 = $^{71}/_{100}$) -recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. -recognise the per cent symbol (%) and understand that per cent relates to "number of parts per hundred", and write percentages as a fraction with denominator 100 as a decimal fraction. *Revisiting concepts, consolidating learning and more practise at applying knowledge and skills learnt*	and decimal equivalents of $^1/_2$, $^1/_4$, $^1/_5$, $^2/_5$, $^4/_5$ and those with a denominator of a multiple of 10 or 25. **Geometry – Properties of Shape** -draw given angles, and measure them in degrees °. -know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. -identify angles at a point and one whole turn (total 360°); angles at a point on a straight line and ½ a turn (total 180°) and other multiples of 90° -use the properties of rectangles to deduce related facts and find missing lengths and angles.	know that the shape has not changed. **Measurement – Converting Units and Volume** -solve problems involving converting between units of time. -convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre). -understand and use equivalences between metric units and common imperial units such as inches, pounds and pints. -estimate volume (e.g. using 1 cm^3 blocks to build cubes and cuboids) and capacity (e.g. using water).
Year 6	**Number – Place Value** -read, write, order and compare numbers up to 10 000000 and determine the value of each digit. -use negative numbers in context, and calculate intervals across zero. -round any whole number to a required degree of accuracy.	**Number – Addition, Subtraction, Multiplication and Division** -identify common factors, common multiples and prime numbers. -use their knowledge of the order of operations to carry out calculations	**Number – Decimals** -identify the value of each digit in numbers given to three decimal places. -associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a	**Measurement – Converting Units** -solve problems involving the calculation and conversion of **units of measure**, using decimal notation up to three decimal places where appropriate.	**Number – Ratio** -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 similar shapes where the scale factor is known or can be found.	**Geometry – Properties of Shape.** -illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. -recognise angles where they meet at a point, are on a straight line, or are vertically

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	Number – Addition, Subtraction, Multiplication and Division -perform mental calculations, including with mixed operations and large numbers. -solve problems involving addition, subtraction, multiplication and division. -multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication. -divide numbers up to 4-digits by a two-digit whole number using the formal written method of short division where appropriate for the context divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.	involving the four operations. **Number – Fractions** -compare and order fractions, including fractions >1 -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. -multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. $^1/_4 \times ^1/_2 = ^1/_8$) -multiply one-digit numbers with up to two decimal places by whole numbers (e.g. $^1/_3 \div 2 = ^1/_6$) **Geometry – Position and Direction** -describe positions on the full coordinate grid (all four quadrants) -draw and translate simple shapes on the coordinate	simple fraction (e.g. $^3/_8$) **Number – Percentages** -recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. -solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison. **Number – Algebra** -express missing number problems algebraically. -find pairs of numbers that satisfy number sentences involving two unknowns. -enumerate all possibilities of combinations of two variables. -use simple formulae. -generate and describe linear number sequences.	-solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. -convert between miles and kilometres. **Measurement – Perimeter, Area and Volume.** -calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm^3) and cubic metres (m^3), and extending to other units such as mm^3 and km^3. -recognise that shapes with the same areas can have different **perimeters** and vice versa. -calculate the area of parallelograms and triangles. -recognise when it is possible to use formulae for area and volume of shapes.	-solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. **Statistics – Interpreting, Constructing and Presenting Data** -interpret and construct pie charts and line graphs and use these to solve problems. -calculate and interpret the mean as an average. **Geometry – Properties of Shape.** -recognise, describe and build simple 3-D shapes, including making nets. -draw 2-D shapes using given dimensions and angles. -compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.	opposite, and find missing angles. *Revisiting concepts, consolidating learning and more practise at applying knowledge and skills learnt*

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		plane, and reflect them in the axes.		*Revisiting concepts, consolidating learning and more practise at applying knowledge and skills learnt*		