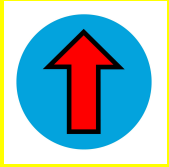
Maths Long Term Plan Hadrian Y4

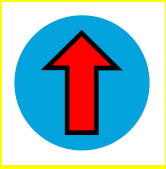
Y4 Maths	
National Curriculum Objectives Year 4	Key Links
Pupils should be taught to: TThe principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers. At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number. By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work. Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.	Year 4 – White Rose Maths Mathematics guidance: year 4 (publishing.service.gov.uk) Mathematics programmes of study: key stages 1 and 2 (publishing.service.gov.uk) ActiveLearn: Home (activelearnprimary.co.uk)

Topics		N.C Objectives	Small Steps	Key Vocab
Autumn 1	Number: Number and	Pupils should be taught to:	• round to the nearest 10	ones, thousands,

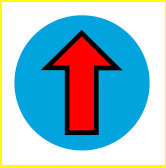
	Place Value	• count in multiples of 6, 7, 9, 25 and 1000 find 1000 more or less than a given number • count backwards through zero to include negative numbers • recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) • order and compare numbers beyond 1000 • identify, represent and estimate numbers using different representations • round any number to the nearest 10, 100 or 1000 • solve number and practical problems that involve all of the above and with increasingly large positive numbers • read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value	• round to the nearest 100 • counts in 1000s • 1000s, 100s, 10s and 1s • partitioning • number line to 10000 • 1000 more or less • compare numbers • order numbers • round ot the nearest 1000 • counts in 25s • negative numbers • roman numerals to 100	hundreds, tens, counting, compare, order, represent, more than, less than, recombine, partition, numerals rounding', 'round up' and 'round down'
Progression 	Year 3: • 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 threedigit multiples of 10. • Recognise the place value of each digit in three-digit numbers, and compose and decompose three-digit numbers using standard and non-standard partitioning • Reason about the location of any threedigit number in the linear number system, including identifying the previous and next multiple of 100 and 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. Year 5: • 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			

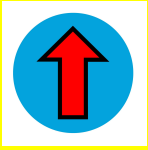
	0.01. • Recognise the place value of each digit in numbers with up to 2 decimal places, and compose and decompose numbers with up to 2 decimal places using standard and nonstandard partitioning. • Reason about the location of any number with up to 2 decimals places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each. • 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. • Convert between units of measure, including using common decimals and fractions.			
Teacher Subject Knowledge 	ActiveLearn: Planning (activelearnprimary.co.uk) ActiveLearn: Planning (activelearnprimary.co.uk)			
Cross Curricular Links 	Science Geography Computing History DT Music PE			
Autumn 1/2	Number: Addition and Subtraction	Pupils should be taught to: • add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate • estimate and use inverse operations to check answers to a calculation • solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.	• add and subtract 1s, 10s, 100s and 1000s • add two 4-dgit numbers - no exchange • add two 4-digit numbers - one exchange • add two 4-digit numbers - more than one exchange • subtract two 4-digit numbers - no exchange • subtract two 4-digit numbers - one exchange • subtract two 4-digit numbers - more	add, subtract, sum, total, difference, and exchange. : more than, less than, column method, altogether, strategy, story problem, place value, fact and digit.]

			than one exchange • efficient subtraction • estimate answers • checking strategies	
Progression 	Year 3: • Calculate complements to 100. • Add and subtract up to three-digit numbers using columnar methods. • 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. Year 5: • add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • add and subtract numbers mentally with increasingly large numbers • use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.			
Teacher Subject Knowledge 	ActiveLearn: Planning (activelearnprimary.co.uk)			
Cross Curricular Links 	Science Geography Computing History DT			
Autumn 2 - Perimeter	Measurement: Length and Perimeter	Pupils should be taught to: • Convert between different units of	• kilometres • perimeter on a grid	: square, rectangle, length,

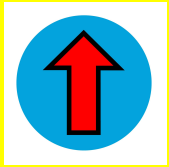
Spring 1 - Area	Measurement: Area	measure [for example, kilometre to metre; hour to minute] • measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres • find the area of rectilinear shapes by counting squares	• perimeter on a rectangle • perimeter of rectilinear shapes • what is area? • counting squares • making squares • comparing area	width, total, distance, convert, equivalent, centimetre (cm) and metre (m).) kilometre', 'perimeter' and 'rectilinear shape' area squared
Progression 	Year 3: • measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) • measure the perimeter of simple 2-D shapes Year 5: • convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) • measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres • calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes • use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.			
Teacher Subject Knowledge 	Perimeter - ActiveLearn: Planning (activelearnprimary.co.uk) Area - ActiveLearn: Planning (activelearnprimary.co.uk)			

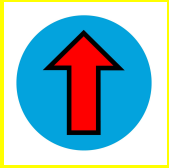
Cross Curricular Links 	DT Science Geography Computing			
Autumn 2/Spring 1	Numer: Multiplication and Division	Pupils should be taught to: • recall multiplication and division facts for multiplication tables up to 12 × 12 • use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers • recognise and use factor pairs and commutativity in mental calculations multiply two-digit and three-digit numbers by a one-digit number using formal written layout solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects	• multiply by 10 • multiply by 100 • divide by 10 • divide by 100 • multiply by 1 and 0 • divide by 1 and itself • multiply and divide by 6 • 6 times table and division facts • multiply and divide by 9 • 9 times table and division facts • multiply and divide by 7 • 7 times table and division facts	ones (1s), tens (10s), hundreds (100s), zero (0), times, multiple, sharing, share, times, equal, total, divide, multiply (x), multiplication fact, division fact, lots of, grouping, groups of, times-table, array multiplication, multiply (x), divide (÷), division, group, remainder, share, left over, times-tables, equal, correspondence, combination, repeated addition, whole, one-step, two-step, multi-step
Progression	Year 3:			

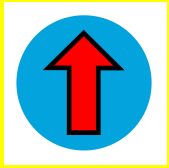
	• recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables • write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods • 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 Year 5: • 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. • 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. • Multiply any whole number with up to 4 digits by any one-digit number using a formal written method. • 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
Teacher Subject Knowledge 	Multiplication and Division 1 - ActiveLearn: Planning (activelearnprimary.co.uk) Multiplication and Division 2 - ActiveLearn: Planning (activelearnprimary.co.uk)
Cross Curricular Links 	Science Geography Computing

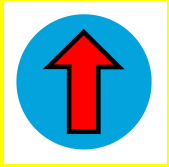
Spring 1/2	Number: Fractions	Pupils should be taught to: • recognise and show, using diagrams, families of common equivalent fractions • count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. • solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number • add and subtract fractions with the same denominator • recognise and write decimal equivalents of any number of tenths or hundredths • solve simple measure and money problems involving fractions and decimals to two decimal places	• what is a fraction? • equivalent fractions • fractions greater than 1 • count in fractions • add 2 or more fractions • subtract 2 fractions • subtract from whole amounts • calculate fractions of a quantity • problem solving - calculate quantities	fraction, numerator, denominator, whole, part, fraction wall, fraction strip, simplify, simplest form, greater than (>), equal to, equivalent to, less than (<), tenth.) hundredths', 'improper fractions' and 'mixed numbers'
Progression 	Year 3: • count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10 • recognise, find and write fractions of a discrete set of objects: unit fractions and nonunit fractions with small denominators • recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators recognise and show, using diagrams, equivalent fractions with small denominators add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7] • compare and order unit fractions, and fractions with the same denominators solve problems that involve all of the above. Year 5: • Find non-unit fractions of quantities. • Find equivalent fractions and understand that they have the same value and the same position in the linear number system. • Recall decimal fraction equivalents for 1/2, 1/4, 1/5 and 1/10 and for multiples of these proper fractions.			

Teacher Subject Knowledge 	Fractions 1 - ActiveLearn: Planning (activelearnprimary.co.uk) Fractions 2 - ActiveLearn: Planning (activelearnprimary.co.uk)			
Cross Curricular Links 	DT Science			
Spring 2/Summer 1	Number: Decimals	Pupils should be taught to: • recognise and write decimal equivalents of any number of tenths or hundredth • recognise and write decimal equivalents to 1/4 , 1/2 , 3/4 find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths • round decimals with one decimal place to the nearest whole number • compare numbers with the same number of decimal places up to two decimal places • solve simple measure and money problems involving fractions and decimals to two decimal places	• recognise tenths and hundreths • tenths as decimals • tenths on a place value grid • tenths on a number line • divide 1-digit by 10 • divide 2-digits by 10 • hundredths • hundredths as decimals • hundredths on a place value grid • divide 1 or 2-digits by 100 • bonds to 10 and 100 • make a whole • write decimals • compare decimals • order decimals • round decimals • halves and quarters	'regroup', 'partition', 'equivalent' and 'fractions', as well as 'tenths' and 'hundredths' columns integer, one more, one less, greater than (>), less than (<), regroup, partition, equivalent, fraction, tenths column and hundredths column. decimal point, decimal place,

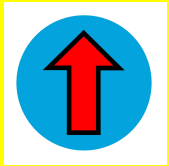
				tenth (0·1), hundredth (0·01), digit, whole number, ascending, fraction, equivalent, convert, number bond, rounding up, rounding down, place value
Progression 	Year 3: Topic starts in Year 4 Year 5: • read and write decimal numbers as fractions [for example, 0.71 = 100 71] • recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents • round decimals with two decimal places to the nearest whole number and to one decimal place • read, write, order and compare numbers with up to three decimal places • solve problems involving number up to three decimal places			
Teacher Subject Knowledge 	Decimals 1 - ActiveLearn: Planning (activelearnprimary.co.uk) Decimals 2 - ActiveLearn: Planning (activelearnprimary.co.uk)			
Cross Curricular Links 	Computing Science Geagraphy DT			

Summer 1	Measurement: Money	Pupils should be taught to: • estimate, compare and calculate different measures, including money in pounds and pence	• pounds and pence • ordering money • estimating money • four operations	pounds (£), pence (p), notes, coins, change, cheaper, more expensive, rounding, nearest, estimate, over estimate, under estimate, greater than (>), less than (<).)
Progression 	Year 3: • add and subtract amounts of money to give change, using both £ and p in practical contexts Year 5: • use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.			
Teacher Subject Knowledge 	ActiveLearn: Planning (activelearnprimary.co.uk)			
Cross Curricular Links 				

Summer 1	Measurement: Time	Pupils should be taught to: • Convert between different units of measure [for example, kilometre to metre; hour to minute]	• hours, minutes and seconds • years, months, weeks and days • analogue to digital - 12 hour • analogue to digital - 24 hour	seconds, minute, hours, days, weeks, months, years, convert, equal to (=), compare, 12-hour, digital, units of time, analogue, 24-hour, am, pm
Progression 	Year 3: • tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks • estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight • know the number of seconds in a minute and the number of days in each month, year and leap year compare durations of events [for example to calculate the time taken by particular events or tasks]. Year 5: • solve problems involving converting between units of time.			
Teacher Subject Knowledge 	ActiveLearn: Planning (activelearnprimary.co.uk)			
Cross Curricular Links 	PE Science History Geography			

Summer 1/2	Statistics	Pupils should be taught to: • 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	• interpret charts • comparison, sum and difference • introducing line graphs • line graphs	line graph', 'discrete data' and 'continuous data' table, bar chart, pictogram, key, compare, altogether, more than, less than, least, most, greatest, smallest, line graph, discrete data, continuous data
Progression 	Year 3: • interpret and present data using bar charts, pictograms and tables • solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables Year 5: • 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			
Teacher Subject Knowledge 	ActiveLearn: Planning (activelearnprimary.co.uk)			
Cross Curricular Links	Geography Science Computing			

				
Summer 2	Geometry: Properties of Shapes	Pupils should be taught to: • compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes • identify acute and obtuse angles and compare and order angles up to two right angles by size • identify lines of symmetry in 2-D shapes presented in different orientations • complete a simple symmetric figure with respect to a specific line of symmetry.	• identify angles • compare and order angles • triangles • quadrilaterals • lines of symmetry • complete a symmetric figure	equilateral, scalene and isosceles angle translation coordinate quadrant right angle
	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	• Descibe position • draw on a grid • move on a grid • describe movement on a grid	
Progression	Year 3: • 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. • Draw polygons by joining marked points, and identify parallel and perpendicular sides Year 5:			

	• identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed. • identify 3-D shapes, including cubes and other cuboids, from 2-D representations • know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles • draw given angles, and measure them in degrees • identify: angles at a point and one whole turn (total 360o) angles at a point on a straight line and 1/2 a turn (total 180o) other multiples of 90o • use the properties of rectangles to deduce related facts and find missing lengths and angles • distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
Teacher Subject Knowledge 	Angles and 2D shapes - ActiveLearn: Planning (activelearnprimary.co.uk) Position and Direction - ActiveLearn: Planning (activelearnprimary.co.uk)
Cross Curricular Links 	Geography Science Computing PE DT Art

Key texts 	The Case of the Missing Birthday Party - Joanne Rocklin Less Than Zero - Stuart. J. Murphy How Many Jelly Beans - Andrea Monetti RECOMMENDATIONS - MathsThroughStories.org - for specific topics