St James' Church of England Primary School
Key Learning in Maths – Year 5

Haslingden St. James' C. E. Primary School
Curriculum Map 2023-2024 with Key Objectives
Year 5

Autumn Term

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Autumn 1	**PLACE VALUE** • Read, write, order and compare numbers to at least 1000000 and determine the value of each digit. • Count forwards or backwards in steps of powers of 10 for any given number up to 1000000. • Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero. • Round any number up to 1000000 to the nearest 10, 100, 1000, 10000 and 100000 • Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.			**ADDITION & 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) • 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.		
Autumn 2	**MULTIPLICATION AND DIVISION** • Multiply and divide numbers mentally drawing upon known facts. • Multiply and divide whole numbers by 10, 100 and 1000. • Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. • Recognise and use square numbers and 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. • Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. • Establish whether a number up to 100 is prime and recall prime numbers up to 19 •			**PERIMETER AND AREA** • Find the perimeter of rectangles, and other polygons. • Find the area of rectangles and other composite shapes. • Estimate area of irregular shapes.		**ASSESSMENT AND CONSOLIDATION**

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Spring Term

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Spring 1	**STATISTICS** • Draw, read and interpret line graphs • Use appropriate graphs and tables to display information • Read and interpret timetables		**MULTIPLICATION AND DIVISION** • Use written methods to solve multiplication problems involving 4 digit x 1 digit, 3 digit x 2 digit. • Use written methods to solve division problems involving a 4 digit number divided by a 1 digit number including those with and without remainders. • Decide upon the most efficient methods to solve multiplication and division problems.			**FRACTIONS** • Compare and order fractions whose denominators are multiples of the same number. • Identify, name and write equivalent fractions of a given fraction, represented visually including tenths and hundredths.
Spring 2	**FRACTIONS** • Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number • Add and subtract fractions with the same denominator and denominators that are multiples of the same number. • Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. • Read and write decimal numbers as fractions • Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. • Multiply fractions by an integer • Multiply mixed numbers by a fraction • Find the fraction of a quantity • Find the whole when given the fraction				**DECIMALS AND PERCENTAGES** • Round decimal numbers to the nearest who and the nearest tenth. • Identify equivalent decimals, percentages and fractions • Identify the place value of numbers with up to 3 decimal places.	

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Summer Term

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Summer 1	**DECIMALS** • Add and subtract decimals within 1 and across 1 • Add and subtract decimals with the same number of places • Add and subtract decimals with different numbers of decimal places • Continue sequences involving those with decimal numbers • Multiply and divide by 10, 100 and 1000			**SHAPE** • Understand and use degrees to classify and estimate angles • Measure and draw angles accurately up to 180 degrees • Calculate angles around a point and straight lines • Identify lengths and angles in shapes • Identify and describe regular and irregular polygons		
Summer 2	**POSITION AND DIRECTION** • Read and plot coordinates • Translate shapes across a grid • Recognise lines of symmetry • Reflect shapes across vertical and horizontal lines		**CONVERTING UNITS** • Convert between grams and kilograms • Convert between millilitres and litres • Convert between units of length • Convert between metric and imperial units of measurement • Convert between units of time • Interpret information from timetables		**ASSESSMENT AND CONSOLIDATION**	**MEASUREMENT (Volume)** • Compare and estimate volume and capacity

Number – number and place value	Number – addition and subtraction	Number – multiplication and division
▪ Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000. ▪ *Count forwards and backwards in decimal steps.* ▪ Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit. ▪ Read, write, order and compare numbers with up to 3 decimal places. ▪ *Identify the value of each digit to three decimal places.* ▪ *Identify represent and estimate numbers using the number line.* ▪ *Find 0.01, 0.1, 1, 10, 100, 100 and other powers of 10 more or less than a given number.* ▪ Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000. ▪ Round decimals with two decimal places to the nearest whole number and to one decimal place. ▪ Multiply/divide whole numbers and decimals by 10, 100 and 1000. ▪ Interpret negative numbers in context, count on and back with positive and negative whole numbers, including through zero. ▪ *Describe and extend number sequences including those with multiplication/division steps and where the step size is a decimal.* ▪ Read Roman numerals to 1000 (M); recognise years written as such. ▪ Solve number and practical problems that involve all of the above.	▪ *Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).* ▪ *Select a mental strategy appropriate for the numbers involved in the calculation.* ▪ *Recall and use addition and subtraction facts for 1 and 10 (with decimal numbers to one decimal place).* ▪ *Derive and use addition and subtraction facts for 1 (with decimal numbers to two decimal places).* ▪ Add and subtract numbers mentally with increasingly large numbers *and decimals to two decimal places.* ▪ Add and subtract whole numbers with more than 4 digits *and decimals with two decimal places,* including using formal written methods (columnar addition and subtraction). ▪ 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. ▪ *Solve addition and subtraction problems involving missing numbers.* ▪	▪ *Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).* ▪ Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. ▪ Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. ▪ Establish whether a number up to 100 is prime and recall prime numbers up to 19. ▪ Recognise and use square (^{2}) and cube (^{3}) numbers, and notation. ▪ *Use partitioning to double or halve any number, including decimals to two decimal places.* ▪ Multiply and divide numbers mentally drawing upon known facts. ▪ Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. ▪ 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. ▪ *Use estimation/inverse to check answers to calculations; determine, in the context of a problem, an appropriate degree of accuracy.* ▪ Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.

		Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.
Number – fractions	**Geometry – properties of shapes**	**Geometry – position and direction**

▪ Recognise mixed numbers and improper fractions and convert from one form to the other.
▪ Read and write decimal numbers as fractions (e.g. $0.71 = \frac{71}{100}$).
▪ *Count on and back in mixed number steps such as* $1\frac{1}{2}$.
▪ Compare and order fractions whose denominators are all multiples of the same number *(including on a number line).*
▪ Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.
▪ Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.
▪ Add and subtract fractions with denominators that are the same and that are multiples of the same number *(using diagrams).*
▪ Write statements > 1 as a mixed number (e.g. $\frac{2}{5} + \frac{4}{5} = \frac{6}{5}$ $=1\frac{1}{5}$).
▪ Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.
	▪ 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 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 360°).
	  - angles at a point on a straight line and half a turn (total 180°).
	- other multiples of 90°.
		▪ *Describe positions on the first quadrant of a coordinate grid.*
		▪ *Plot specified points and complete shapes.*
		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.

- Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal.
- *Solve problems involving fractions and decimals to three places.*
- Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}$ and fractions with a denominator of a multiple of 10 or 25.

Measurement	Statistics
- *Use, read and write standard units of length and mass.* - Estimate *(and calculate)* volume ((e.g., using 1 cm^3 blocks to build cuboids (including cubes)) and capacity (e.g. using water). - *Understand the difference between liquid volume and solid volume.* - *Continue to order temperatures including those below 0°C.* - Convert between different units of metric measure. - Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. - Measure/calculate the perimeter of composite rectilinear shapes. - Calculate and compare the area of rectangle, use standard units square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes. - *Continue to read, write and convert time between analogue and digital 12 and 24-hour clocks.* - Solve problems involving converting between units of time. - Use all four operations to solve problems involving measure using decimal notation, including scaling.	- *Complete and interpret information in a variety of sorting diagrams (including those used to sort properties of numbers and shapes).* - Complete, read and interpret information in tables and timetables. - Solve comparison, sum and difference problems using information presented in *all types of graph including* a line graph. *Calculate and interpret the mode, median and range.*