

YEAR 5 MATHS CURRICULUM LEARNING JOURNEY

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		HALF TERM 1 LEARNING OBJECTIVES	
Arithmetic	A1	I can identify and use place value for different types of numbers including decimals.	
	A2	I can add numbers up to 1000000 using the formal column method.	
	A3	I can subtract numbers upto 1000000 using the formal column method.	
	A4	I can multiply a 4-digit x 1 digit, 2-digit x 2 digit 3-digit x 2 digit number using formal written method.	
	A5	I can divide a 4-digit number by a single digit divisor and show any remainder as a fraction.	
	A6	I can divide a 4-digit number by a double digit divisor and show any remainder as a fraction.	
Reasoning	R1	I can translate, with given movement and reflect 2D shapes.	
	R2	I can identify the properties of quadrilaterals.	
	R3	I can name, estimate, compare, measure and draw all types of angles.	
	R4	I can calculate with coordinates after reflection and translation.	
		HALF TERM 2 LEARNING OBJECTIVES	
Arithmetic	A7	I can order values up to and over 1000 000. Order decimals up to 3 decimal places.	
	A8	I can add a decimal value with one decimal place with a decimal of tenths, e.g. $4.2 + 0.9 =$.	
	A9	I can subtract a decimal value with one decimal place with a decimal of tenths, e.g. $2.4 + 0.7 =$.	
	A10	I can multiply numbers mentally.	
	A11	I can divide numbers mentally.	
	A12	I can multiply and divide whole numbers and decimals by 10, 100 and 1000 and understand the effect.	
Reasoning	R5	I can calculate missing angles at 90, 180, 270 and 360 degrees.	
	R6	I can identify a shape as regular or irregular using a ruler.	
	R7	I can calculate the volume of simple cubes.	
	R8	I can solve multi-step problems with addition and subtraction using the above criteria.	
		HALF TERM 3 LEARNING OBJECTIVES	
Arithmetic	A13	I can count forwards or backwards in powers of 10 from any given number, e.g. 827, 927, 1027...	
	A14	I can calculate missing values in number sequences including decimals and fractions.	
	A15	I can describe what negative numbers are count forwards or backwards through zero, such as with temperature.	
	A16	I can calculate equivalent fractions.	
	A17	I can compare and order fractions with related denominators including using symbols for inequalities.	
	A18	I can add and subtract fractions with related denominators, such as: $\frac{3}{10} + \frac{1}{5} =$.	
Reasoning	R9	I can calculate the area and perimeter of compound shapes using rectangles, given all dimensions.	
	R10	I can estimate the volume and capacity of real-life objects.	
	R11	I can calculate a missing side length of a rectangle from a given perimeter or area.	
	R12	I can calculate missing interior angles in triangles and quadrilaterals.	
		HALF TERM 4 LEARNING OBJECTIVES	
Arithmetic	A19	I can round numbers upto 1000 000 to nearest: 10, 100, 1000, 10 000 & 100 000. I can round decimals of 2dp to 1 dp and round decimals with 1dp to a whole number.	
	A20	I can convert between adjacent metric units of measurement, such as cm to m. Partition adjacent metric units, such as $3.425\text{kg} = 3\text{ whole kg and }425\text{ grams}$.	
	A21	I can identify a prime number up to 100 and recall prime numbers up to 19. Identify all other numbers as composite.	
	A22	I can calculate the factors and highest common factor (HCF) of 2 values.	
	A23	I can calculate the area and perimeter of different rectangles.	
	A24	I can solve problems involving sum, comparison and difference using a line graph.	
Reasoning	R13	I can identify and draw nets of 3D shapes.	
	R14	I can round and manipulate numbers to support estimating calculations.	
	R15	I can solve problems with decimals up to 3dp.	
	R16		
		HALF TERM 5 LEARNING OBJECTIVES	
Arithmetic	A25	I can calculate multiples and lowest common multiple (LCM) of 2 values.	
	A26	I can solve problems with all 4 operations with length, mass, volume and money (including decimals).	
	A27	I can recognise, use and generate square and cube numbers.	
	A28	Calculate the prime factors of a given number.	
	A29	I can convert between equivalent FDP up to 3dp.	
	A30	I can understanding approximate equivalences between imperial and metric units of measurement, such as $2\text{lbs} \approx 1\text{kg}$.	
Reasoning	R17	I can decide which is the MOST appropriate type of chart or graph for a given set of data.	
	R18	I can read and interpret different scales with: mass, capacity and length using appropriate equipment such as a measuring jug.	
	R19	I can estimate the area of irregular shapes.	
	R20	I can draw, read and interpret information held in tables including bus and train timetables.	
		HALF TERM 6 LEARNING OBJECTIVES	
Arithmetic	A31	I can convert between mixed numbers and improper fractions.	
	A32	I can expand a single set of brackets containing integers and explore relationships , such as: $2(3+4) = 2 \times 3 + 2 \times 4$.	
	A33	I can solve problems with adjacent units of time, such as: days to weeks, mins to seconds, etc	
	A34	I can multiply proper fractions and mixed numbers by an integer.	
	A35	I can read Roman numerals upto 1000.	
	A36		
Reasoning	R21	I can solve problems involving equivalent FDP (up to 3dp).	
	R22	I can compare and order fractions with related denominators including using symbols for inequalities.	
	R23	I can calculate equivalent ratios using real-life scale drawings such as with maps: 1:100,000	
	R24	I can calculate the median and the modal class for grouped data.	

YEAR 6 MATHS CURRICULUM LEARNING JOURNEY

Q		ARITHMETIC PAPER LEARNING OBJECTIVES
1	N	I can read and write and solve problems with numbers to over 10 000 000 & decimals up to 3 decimal places and understand the value of any given digit.
2		I can round any whole number & decimal to any degree of accuracy including to the nearest 20 and 50 and solve problems with all this.
3		I can solve problems with negative numbers and calculate intervals that bridge zero.
4		I can multiply and divide decimal numbers by 10, 100 and 1000 giving answers to 3dp. Solving problems with this.
5	G	I can identify and name the parts of a circle: radius, circumference & diameter and understand that the diameter is twice the radius.
6		I can recognise and describe the properties of 3D shapes.
7		I can calculate missing angles in triangles and quadrilaterals and identify vertically opposite angles.
8		I can compare the scale factors of an enlarged shape with the original. (similar shapes)
9	N	I can multiply a 4-digit whole number with a decimal value up to 2 decimal places.
10		I can divide a 4-digit number by a single digit & a 2-digit divisor and show any remainder as a fraction, rounding where required.
11		I can calculate mentally using mixed operations with increasing values.
12		I can calculate the factors and highest common factor (HCF) of 2 numbers of increasing value.
13		I can identify and recall prime number up to 100.
14		I can calculate the multiples and lowest common multiple (LCM) of 2 numbers of increasing value.
15		I can use and begin to understand the order of operations (BIDMAS).
16		I can effectively estimate the answer to a calculation to check calculations and understand the magnitude of the estimation.
17	M	I can convert between non-adjacent metric units of measurement up to 3dp, such as, 7m = 0.007km
18		I can use formula to calculate the area of a rectangle, parallelogram and a triangle.
19		I can identify when to use a formula to calculate the volume of 3D shapes & calculate the vol. of cubes & cuboids using different units.
20	R	I can calculate equivalent ratios, finding missing ratios through multiplication or division & split a quantity into a given ratio.
21	N	I can convert between more complex equivalent FDP, such as, $\frac{3}{8} = 0.375$ & I can mentally recall equivalences between simple FDP.
22		I can identify fractions as a division statement. i.e. $\frac{5}{10} = 5 \div 10$.
23		I can calculate a percentage of a quantity & compare two different percentages in multiples of 5%.
24		I can calculate a fraction of a quantity and work backwards to find the original amount.
25		I can use common factors to calculate the lowest terms for a given fraction and recognise them as being equivalent to one another.
26		I can add and subtract fractions with unrelated denominators, including mixed numbers and improper fractions.
27		I can compare and order fractions with unrelated denominators including mixed numbers and improper fractions.
28		I can multiply a pair of simple fractions and reduce the answer into its lowest terms where necessary.
29		I can divide a whole number by a fraction, such as, $\frac{1}{4} \div 5 = \frac{1}{20}$.
30		I can mentally recall equivalences between simple fractions, decimals and percentages
31	M	I can calculate & interpret the mean, mode, median & range of a set of data & identify the most appropriate for a given set of data.
32	S	I can calculate the proportion of an angle to the whole pie chart.
33	A	I can use letters for unknowns in expressions and simple equations.
34		I can find pairs of values that can be used for two unknowns to satisfy a given equation, such as, $a + b = 12$.
35	N	I can calculate the rule of a linear number sequence and generate a linear number sequence from a given first term and rule.
Q		REASONING PAPER LEARNING OBJECTIVES
1	N	I can solve problems with negative numbers and calculate intervals that bridge zero.
2	G	I can identify and name the parts of a circle: radius, circumference & diameter and understand that the diameter is twice the radius.
3		I can draw nets and construct 3D shapes
4		I can sort all 2D shapes using their properties.
5		I can calculate missing angles in triangles and quadrilaterals and identify vertically opposite angles.
6		I can accurately draw different 2D shapes using given dimensions and angles.
7		I can compare the scale factors of an enlarged shape with the original. (similar shapes)
8	N	I can use and begin to understand the order of operations (BIDMAS).
9		I can solve multi-step problems using all four operations.
10	M	I can solve problems involving adjacent metric units of measurement.
11		I can convert between miles and km using the ratio of 5:8.
12		I can interpret simple conversion graphs, such as, converting between cm and m.
13		I can solve problems with missing dimensions in 2D shapes.
14		I can understand that rectangles with the same area can have different perimeters and vice-versa.
15	R	I can calculate equivalent ratios, finding missing ratios through multiplication or division & split a quantity into a given ratio.
16	N	I can calculate a percentage of a quantity & compare two different percentages in multiples of 5%.
17		I can calculate a fraction of a quantity and work backwards to find the original amount.
18	S	I can read and interpret a pie chart to solve problems.
19		I can construct a line graph from given data.
20		I can read and interpret line graphs to solve problems.
21	M	I can calculate & interpret the mean, mode, median & range of a set of data & identify the most appropriate for a given set of data.
22	S	I can construct a pie chart from given data.
23	G	I can translate and draw a 2D shape by a given vector in all four quadrants.
24		I can reflect a 2D shape through the x and y axis, using all four quadrants.
25		I can calculate with coordinates through reflection and translation of shapes in all four quadrants.
26	A	I can list pairs of variables to solve a problem, such as: an apple costs 30p & banana costs 20p. If I spend £2, what combination of apples and bananas can be bought?

YEAR 7 MATHS CURRICULUM LEARNING JOURNEY

ARITHMETIC PAPER LEARNING OBJECTIVES		
1	N	I can identify and use place value for different types of numbers.
2		I can recognise the place value and the effect when multiplying and dividing by 10, 100 and 1000.
3		
4		I can use the four operations with positive and negative whole and decimal numbers.
5		I can use standard column methods for addition and subtraction of whole numbers and decimals up to 2 decimal places.
6		I can use standard column methods for multiplication and division of whole numbers and decimals
7		I understand where to position the decimal point by considering equivalent calculations
8	S	I can calculate statistics for small sets of data including the median, mode and range.
9	A	I can read and use algebraic notation.
10		I understand the difference between an expression, equation, inequality, terms and factors.
11		I can simplify algebraic expressions by grouping like terms.
12		I can solve simple linear equations with one or two steps.
13	G & A	I can convert one metric unit to another with length, mass and capacity.
14		I know and I can use the formula for the area of a rectangle.
15		I can calculate the volume and surface area of cubes and cuboids.
16	I can solve problems with missing angles.	
17	N	I understand powers, roots, reciprocals and square numbers.
18		I can round numbers to given decimal places or significant figures.
19	A	I can use number sequences.
20	G	I can use known facts of angles in geometrical shapes.
21	S	I understand how to calculate and describe the probability of an event occurring.
22	A	I can solve problems with function machines.
23	N	I understand what per cent means and I can find a percentage of an amount
24		I know equivalent fractions, percentages and decimals.
25		I can calculate equivalent fractions.
26		I can use fractions and percentages.
27		I can calculate a percentage increase or decrease.
28		I can divide an integer by a fraction.
29		I can add, subtract, multiply and divide two fractions.
30		I can use division to convert a fraction to a decimal and identify decimal equivalents of a mixed number.
31	A	I can write and use simple formulae.
32		I can simplify linear expressions and expand a set of brackets. I can also use letter symbols to represent unknown variables.
33		I know the difference between an equation, an expression and a formula.
34	N	I can recognize and use multiples, lowest common multiples, factors, highest common factors and prime numbers.
35		I can use prime factor decomposition to find the HCF and LCM of a pair of numbers and calculate the product of its prime factors.
REASONING PAPER LEARNING OBJECTIVES		
1	S	I can calculate the median and the modal class for grouped data.
2	A	I can substitute numerical values into formulae and expressions.
3	G & A	I can choose and use units of measurement to measure, estimate, calculate and solve problems in everyday contexts.
4		I can read and interpret scales on a range of simple measuring instruments with appropriate accuracy.
5		I can calculate the perimeter and area of compound shapes made from rectangles and triangles.
6	I can draw 3d shapes using isometric paper.	
7	S	I can plan and organise the collection of data and represent it using different graphs.
8		I can read different types of charts and graphs.
9		
10	G & M	I can use the correct vocabulary, notation for labelling lines, angles and shapes. I can also measure and draw reflex angles to the nearest degree.
11		I can use known facts of angles in geometrical shapes.
12		I can read and plot coordinates in all four quadrants and calculate the coordinate of a missing vertex of a 2D shape.
13	N	I can calculate using the correct order of operations using BIDMAS.
14		I can estimate an answer to help identify any potential mistakes.
15	A	I can read and interpret different number sequences including using the nth term.
16	G & M	I can measure and draw angles with a protractor and construct a triangle knowing some of the side and angle properties.
17		I can identify and use the properties of 2D shapes.
18	S	I can populate tables, grids and Venn diagrams.
19		I can collect data from a simple experiment and record in a frequency table. I can also compare experimental and theoretical probabilities.
20		I can read and interpret coordinates and straight lines on a graph.
21	A	I can draw and interpret graphs from real-life situations.
22	N	I can reflect a shape in a mirror line and describe a translation using vectors and recognise when shapes are congruent.
23		I can rotate a shape using a centre of rotation and find the rotational symmetry of a 2D shape.
24		I can construct equations. I can also construct and solve linear equations with unknowns on both sides.
25	A	I can calculate, plot and interpret linear graphs.

YEAR 8 MATHS CURRICULUM LEARNING JOURNEY

Q		ARITHMETIC PAPER LEARNING OBJECTIVES
1	N	I can multiply and divide integers and decimals by 0.1 and 0.01.
2		I can round numbers and measures to a given degree of accuracy, including using significant figures.
3		I can convert between equivalent fractions, decimals and percentages and reduce a fraction into its simplest terms.
4		I can calculate and use the correct notation for squared and cubed.
5		I can read and write positive integer powers of 10, e.g. 10, 100, 1000...
6		I can calculate a fraction of a quantity.
7		I can multiply and divide an integer by a fraction.
8		I can use the correct order of operations using BIDMAS.
9		I can calculate a percentage of a quantity and calculate a percentage increase and decrease.
10		I can write and read standard numbers using standard form.
11		I can use division to convert a fraction into a decimal.
12		I can reduce a ratio into its simplest form.
13	A	I can use and calculate the interior and exterior angles in different polygons.
14		I know and I can use the formula to calculate the volume of cuboid.
15		I can convert between commonly used imperial and metric units of measurement.
16		I can convert between units of area and volume.
17		I can calculate the area and circumference of a circle.
18		I can use 3-figure bearings.
19		I can use map scales.
20		I can use simple examples of loci.
21	S	I can identify the modal class from a table of continuous data.
22		I can calculate the mean, mode, median and range from a frequency table.
23		I can calculate the probability of an event <i>not</i> occurring using the formula $1 - p$.
24	G & M	I can use simple indices for positive integer powers.
25		I can identify and use the <i>n</i> th term of a linear sequence.
26		I can continue arithmetic and geometric sequences.
27		I can expand a set of brackets.
28		I can factorise an expression.
29		I can construct and solve linear equations with unknowns on both sides and with brackets.
30		I can solve equations with fractions.
31		I can calculate the midpoint of two sets of coordinates.
32		I understand the properties of a straight-line graph including its gradient and y-axis intercept.
33		I can plot a graph to show the relationship between <i>x</i> and <i>y</i> .
34		I can rearrange and change the subject of a formula.
35		I can calculate the inverse of a linear function.
Q		REASONING PAPER LEARNING OBJECTIVES
1	N	I can recognise and calculate powers of 2, 3, 4, 5 and 10.
2		I can add and subtract fractions.
3		I can divide a quantity by a given ratio.
4		I can solve problems using direct proportion.
5	G & M	I can identify and use alternate and corresponding angles in parallel lines.
6		I can calculate the volume of cuboids and 3D shapes made from cuboids.
7		I can identify 3D shapes across a range of different representations.
8		I can solve problems involving the properties of quadrilaterals.
9		I know that the translation, reflection and rotation of a 2D shape maintains the shape's side lengths and angle size.
10		I can transform 2D shapes using a combination of rotation, reflection and translation.
11		I can enlarge a 2D shape using a positive scale factor.
12		I understand and use the language of the enlargement of 2D shapes.
13	S	I can draw a range of constructions including bisectors of angles and lines and triangles using specified properties.
14		I can identify planes of symmetry in 3D shapes.
15		I can identify and collect appropriate data.
16		I can identify an effective method to best communicate the results of an enquiry.
17		I can interpret and plot a scatter graph and two-way table.
18		I can interpret and plot a stem-and-leaf diagram.
19		I can interpret and construct a pie chart.
20		I can use a systematic approach to find all the possible outcomes of a single and two successive events using diagrams and tables.
21	A	I understand that the reliability of outcomes increases as the number of trials increases.
22		I can use algebraic notation in expressions, equations and functions and substitute values into each of these.
23		I can continue an arithmetic and geometric sequence.
24		I can identify the properties of a straight-line graph including its gradient and y-axis intercept.