John Emmerson Batty Primary School Mathematics Curriculum – Year 6

Year 6	KEY VOCABULARY					
Number System	Number - Addition, Subtraction, Multiplications and Division	Number – Fractions/Decimals/Percentages and Ratio	Algebra	Measurement	Statistics	Geometry
Pupils should be taught to: • read, write, order and compare numbers up to 10 000 000 and determine the value of each digit • round any whole number to a required degree of accuracy • use negative numbers in context, and calculate intervals across zero • solve number and practical problems that involve all of the above.	Pupils should be taught to: • 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 long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context • divide numbers up to 4 digits by a two-digit 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 • identify common factors, common multiples and prime numbers • use their knowledge of the order of operations to carry out calculations involving the four operations • 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 • use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.	Pupils should be taught to: • use common factors to simplify fractions; use common multiples to express fractions in the same denomination • compare and order fractions, including fractions > 1 • 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 [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$] • divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$] • associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$] • identify the value of each digit in numbers given to three decimal places and 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 • recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. • 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 [for example, of measures, and such as 15% of 360] and the use of percentages for comparison • solve problems involving similar shapes where the scale factor is known or can be found • solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.	**Pupils should be taught to:** • 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.	Pupils should be taught to: • solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate • use, read, write and convert between 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 to up to three decimal places • convert between miles and kilometres • recognise that shapes with the same areas can have different perimeters and vice versa • recognise when it is possible to use formulae for area and volume of shapes • calculate the area of parallelograms and triangles • calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm3) and cubic metres (m3), and extending to other units [for example, mm3 and km3].	Pupils should be taught to: • interpret and construct pie charts and line graphs and use these to solve problems • calculate and interpret the mean as an average.	Pupils should be taught to: • draw 2-D shapes using given dimensions and angles • recognise, describe and build simple 3-D shapes, including making nets • compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons • 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 opposite, and find missing angles.
					KEY VOCABULARY	
					stick/flip/times (dividing fractions) **just times** (multiplying fractions) **add count divide** (mean/average) **Half the base times the height** (area of triangle) **Divide by the bottom, times by the top** (disco fractions – fractions of numbers)	**composite number** (1) **improper fraction** **vulgar fraction** (proper fraction) **numerator** **out of a hundred** (%) **ratio** **proportion**

Termly / Weekly Focus (Guide for the Class Teacher) – Year 6

Wk	Term 1a	Wk	Term 1b
1	Number and Place Value	1	Addition, Subtraction – including decimals
2	Addition and Subtraction, Round and order Decimals	2	Multiplication (including decimals), Division by 10/100/1000
3	Properties of Shapes	3	Draw with accuracy, Convert units of length – including miles to kilometres and vice versa
4	Multiplication	4	Common Multiples, Dividing by U/11/12
5	Factors, Multiples, Fractions	5	Fractions with division, Equivalences of Fractions, Percentages and Decimals
6	Coordinates, Translation/Reflection of shapes	6	Conversion of time, Average Speed
7	**Assessments**	7	**Assessments**

Wk	Term 2a	Wk	Term 2b
1	Negative Numbers, BODMAS order of operations	1	Pie Charts, Line Graphs, Mean as an average
2	Algebra, Formula, Linear Equations	2	Measurement – Mass
3	Properties of Shapes including drawing angles, finding missing angles	3	Area, Perimeter, properties of circles
4	Add/Subtract/Multiply/Divide Fractions	4	Measurement – Capacity, volume
5	Ratio, Proportion	5	Long Multiplication/Long Division
6	**Assessments**	6	**Assessments**

Wk	Term 3a	Wk	Term 3b
1	Further Revision to meet the needs to individual groups of children – Areas identified from previous assessments	1	BODMAS challenge, number puzzles, curious questions
2		2	Divisibility tests, review multiplication/division of whole/decimal numbers
3		3	Review Fractions, Decimals, Percentages
4	**Assessments – SATs**	4	Using and plotting coordinates to locate and translate shapes
5	Multiplication including decimals	5	Formula, Linear Sequences, Algebra Problems
6	Division including decimals	6	(TRANSITION TO SECONDARY SCHOOL)
7		7	(TRANSITION TO SECONDARY SCHOOL)

PLACE VALUE	1. Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit. Round any whole number to a required degree of accuracy.
	2. Use negative numbers in context, and calculate intervals across zero. Solve number and practical problems that involve all of the above.
ADD, SUB, MULT, DIVIDE	3. Multiply and divide numbers up to 4 digits by a 2-digit whole number using the formal written methods and interpret remainders as whole number remainders, fractions, or by rounding.
	4. Identify common factors, common multiples and prime numbers.
	5. Use their knowledge of the order of operations to carry out calculations involving the four operations.
	6. Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
FRACTIONS	7. Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.
	8. Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.
	9. Multiply simple proper fractions and simplify the answer (e.g. ¼ x ½ = ⅛). Divide proper fractions by whole numbers (e.g. ⅓ ÷ 2 = ⅙).
	10. Identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places.
	11. 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.
	12. Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
R & P	13. Solve problems involving the calculation of percentages (e.g. of measures) such as 15% of 360 and the use of percentages for comparison.
	14. Solve problems involving similar shapes where the scale factor is known or can be found. Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.
ALGEBRA	15. Express missing number problems algebraically. Use simple formulae expressed in words.
	16. Generate and describe linear number sequences.
	17. Find pairs of numbers that satisfy number sentences involving two unknowns. Enumerate all possibilities of combinations of two variables.
MEASURE	18. 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 km.
	19. Use, read, write & convert between standard units of measure, converting length, mass, volume & time from smaller to larger units, and vice versa, using decimal notation to up to 3 dec places.
	20. Recognise that shapes with the same areas can have different perimeters and vice versa.
	21. Calculate the area of parallelograms and triangles. Recognise when it is possible to use formulae for area and volume of shapes.
	22. Calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm^2) and cubic metres (m^3), and extending to other units.
GEOMETRY	23. Draw 2-D shapes using given dimensions and angles. Recognise, describe and build simple 3-D shapes, including making nets.
	24. Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.
	25. Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.
	26. Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.
POSITION	27. Describe positions on the full coordinate grid (all four quadrants).
	28. Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.
STATS	29. Interpret and construct pie charts and line graphs and use these to solve problems.
	30. Calculate and interpret the mean as an average.