Maths Curriculum Overview – Upper Key Stage 2

YEAR 5

Year 5	Declarative- knowing what	Procedural- knowing how	Conditional- knowing when and why
Autumn Block 1 Place Value	Read and write numbers to at least 1 000 000 and determine the value of each digit. ***ACP: Quick quiz on whiteboards, focusing on digit values.*** Recognise the place value of each digit in numbers with up to 2 decimal places. ***ACP: Quick quiz on whiteboards, focusing on digit values.*** Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000. ***ACP: Oral whole class chanting.*** Count forwards and backwards with positive and negative whole numbers, including through zero. ***ACP: Oral whole class chanting.*** Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Read Roman numerals to 1000 (M) and recognise years written in Roman numerals. ***ACP: Quick quiz with responses on whitebaords.***	Order and compare numbers to at least 1 000 000. ***ACP: Quick quiz with responses on whitebaords.*** Compose and decompose numbers with up to 2 decimal places using standard and non-standard partitioning. ***ACP: Quick quiz with responses on whitebaords.*** Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000. ***ACP: Oral session using*** *ITP Number Line - Mathsframe*	Reason about the location of any number with up to 2 decimal 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. ***ACP: Oral session using*** *ITP Number Line - Mathsframe* Solve number problems and practical problems that involve all Year 5 Declarative and Procedural knowledge. ***ACP: Low stakes quiz.*** Interpret negative numbers in context. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***

Autumn Block 2 Number: Addition and subtraction		Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction). ***ACP: Quick quiz to include exchanging, missing box and find the mistake.*** Add and subtract numbers mentally with increasingly large numbers. ***ACP: Quick quiz on whiteboards and oral reasoning.***	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. ***ACP: Low stakes test; orally assess choice of methods.*** Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth). ***ACP: Quick quiz with responses on whiteboards.*** Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of =. ***ACP: Low stakes test.*** Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***

Autumn Block 3 Multiplication and division A	Secure fluency in multiplication table facts, and corresponding division facts, through continued practice. ***ACP: Use TTRS to ensure recall speed is less than 3 seconds per response.*** Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3). ***ACP: Fluent in 5 questions.*** Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. ***ACP: Write definitions of the 3 terms.*** Recall prime numbers up to 19. ***ACP: Quick fire questions – responses on whiteboards.*** 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. ***ACP*: *Quick fire questions – responses on whiteboards. Include all vocabulary in composite.***		
Autumn Block 4 Fractions A	Recognise mixed numbers and improper fractions and write mathematical statements > 1 as a mixed number. ***ACP: Quick quiz on whiteboards.*** Identify, name and write equivalent fractions of a given fraction, including tenths and hundredths, and understand they have the same position in the linear number system. ***ACP: Quick quiz on whiteboards.*** Compare and order fractions whose denominators are all multiples of the same number. ***ACP: Quick quiz on whiteboards.***	Add and subtract fractions with the same denominator and denominators that are multiples of the same number. ***ACP: Quick quiz on whiteboards. Oral reasoning.*** Convert from mixed numbers and improper fractions. ***ACP: Quick quiz on whiteboards.***	

Spring Block 1 Multiplication and division B	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. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** 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. ***ACP: Quick fore questions, including above vocabulary.***	Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000. ***ACP: Quick quiz – responses on whiteboards.*** Multiply and divide numbers mentally drawing upon known facts. ***ACP: Quick quiz – responses on whiteboards.*** 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. ***ACP: Quick quiz to assess all elements of the composite.*** Find factors and multiples of positive whole numbers, including common factors and common multiples, finding all factor pairs of a number, and express a given number as a product of 2 or 3 factors. ***ACP: Low stakes test.***	Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. ***ACP: Low stakes test. Orally assess knowledge of factors, multiples, squares and cubes.*** Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth). ***ACP: Quick quiz on whiteboards.*** Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign. ***ACP: Low stakes test.*** Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***
Spring Block 2 Fractions B		Find non-unit fractions of quantities. ***ACP: Quick quiz on whiteboards. Oral reasoning.*** Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. ***ACP: Low stakes test – free choice of resources.***	

Spring Block 3 Number: Decimals and percentages	Read and write decimal numbers as fractions. ***ACP: Fluent in 5.*** Recall decimal fraction equivalents for 1/2, 1/4, 1/5, and 1/10, and for multiples of these unit fractions. ***ACP: Quick fire questions – record on whiteboards*** Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Read and write numbers with up to three decimal places. ***ACP: Fluent in 5.*** Recognise the percent 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. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***	Order and compare numbers with up to three decimal places. ***ACP: Quick quiz on whiteboards. Oral reasoning.*** Round decimals with two decimal places to the nearest whole number and to one decimal place. ***ACP: Quick quiz on whiteboards. Oral reasoning.***	
Spring Block 4 Perimeter and area	Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) including using common decimals and fractions. **ACP: Quick quiz, multiple choice: plan in answers with misconceptions.**	Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. A**CP: Measure - practical session. Calculate - quick quiz** Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes. **ACP: Quick quiz, multiple choice: plan in answers with misconceptions.**	Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. **ACP: Low stakes test to include all aspects of the composite.**
Spring Block 5 Statistics		Complete, read and interpret information in tables, including timetables. ***ACP: Provide a partially completed (time)table for children to complete, read and interpret.***	Solve comparison, sum and difference problems using information presented in a line graph. ***ACP: Low stakes test to cover all elements of the composite.***

Summer Block 1 Shape	Identify 3-D shapes, including cubes and other cuboids, from 2-D representations. ***ACP: Show 2D representations on slides. Children identify 3D shapes orally.*** Know angles are measured in degrees. ***ACP: Write a definition of degrees in the context of shape.*** Identify: angles at a point and one whole turn (total 360°); angles at a point on a straight line and 1/2 a turn (total 180°); other multiples of 90°. ***ACP: Low stakes test.***	Estimate and compare acute, obtuse and reflex angles. ***ACP: Show angles on slides. Children estimate and compare orally.*** Draw given angles, and measure them in degrees (°). ***ACP: Low stakes test.***	Use the properties of rectangles to deduce related facts and find missing lengths and angles. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Distinguish between regular and irregular polygons based on reasoning about equal sides and angles. ***ACP: Show polygons slides. Orally assess reasoning re sides and angles.***
Summer Block 2 Position and direction		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. ***ACP: Low stakes test.***	
Summer Block 3 Decimals			Solve problems involving number up to three decimal places. ***ACP: Low stakes test.*** Solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25. ***ACP: Low stakes test.***
Summer Block 4 Negative numbers			Interpret negative numbers in context. **ACP: Quick quiz, multiple choice: plan in answers with misconceptions.**

YEAR 6

Year 6	Declarative- knowing what	Procedural- knowing how	Conditional- knowing when and why
Autumn Block 1 **Place Value**	Read and write numbers up to 10 000 000 and determine the value of each digit. ***ACP: Quick quiz on whiteboards regarding digit values.*** Recognise the place value of each digit in numbers with up to 10 million, including decimal fractions. ***ACP: Quick quiz on whiteboards regarding digit values.*** Understand the relationship between the powers of 10 from 1 hundredth to 10 million, and use this to make a given number 10, 100, 1000, 1 tenth, 1 hundredth or 1 thousandth times the size (multiply by 10, 100 and 1000). ***ACP: Oral assessment of relationships.*** Round any whole number to a required degree of accuracy. ***ACP: Quick multiple-choice quiz – plan in misconception options.***	Order and compare numbers up to 10 0000. ***ACP: Quick whiteboard quiz.*** Compose and decompose numbers with up to 10 million using standard and non-standard partitioning. ***ACP: How many ways can you partition 5, 964, 267? When and why might you use a particular decomposition?*** Use negative numbers in context and calculate intervals across zero. ***ACP: Quick multiple-choice quiz – plan in misconception options.***	Reason about the location of any number with up to 2 decimal 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. ***ACP: Oral session using*** ITP Number Line - Mathsframe Solve number problems and practical problems that involve all Year 6 Declarative and Procedural knowledge. ***ACP: Low stakes test.***
Autumn Block 2 **Number: Addition, subtraction, multiplication and division**	Sustain fluency in multiplication table facts, and corresponding division facts, through continued practice. ***ACP: Use TTRS to ensure recall speed is less than 3 seconds per question.*** Identify common factors, common multiples and prime numbers. ***ACP: Fluent in 5 questions.***	Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication. ***ACP: Quick quiz to assess all elements of the composite.*** 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. ***ACP: Quick quiz to assess all elements of the composite.***	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. ***ACP: Low stakes quiz to assess all elements of the composite. Oral assessment of choice o methods.*** Solve problems involving addition, subtraction, multiplication, and division. ***ACP: Low stakes quiz to assess all elements of the composite. Oral assessment of choice o methods.*** Use estimation to check answers to calculations and determine, in the

		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. ***ACP: Quick quiz to assess all elements of the composite.*** Perform mental calculations, including with mixed operations and large numbers. ***ACP: Quick whiteboard quiz.*** Use their knowledge of the order of operations to carry out calculations involving the four operations. ***ACP: Quick whiteboard quiz.***	context of a problem, an appropriate degree of accuracy. ***ACP: Quick multiple-choice quiz – plan in misconception options.***
Autumn Block 3 **Fractions A**		Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. ***ACP: Quick whiteboard quiz.*** Compare and order fractions, including fractions > 1. ***ACP: Quick whiteboard quiz.*** Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. ***ACP: Quick multiple-choice quiz – plan in misconception options.***	
Autumn Block 4 **Fractions B**		Multiply simple pairs of proper fractions, writing the answer in its simplest form. ***ACP: Quick multiple-choice quiz – plan in misconception options.*** Divide proper fractions by whole numbers. ***ACP: Quick whiteboard quiz.***	

Autumn Block 5 **Measurement: Converting units**	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. ***ACP: Low stakes quiz to include all aspects of the composite.***	Convert between miles and kilometres. ***ACP: Quick whiteboard quiz.***	Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. ***ACP: Low stakes quiz to include all aspects of the composite.***
Spring Block 1 **Ratio**		Calculate percentages of quantities. ***ACP: Quick multiple-choice quiz – plan in misconception options.*** Calculate scale factors of similar shapes. ***ACP: Quick multiple-choice quiz – plan in misconception options.***	Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts. ***ACP: Quick multiple-choice quiz – plan in misconception options.*** Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison. ***ACP: Quick multiple-choice quiz – plan in misconception options.*** Solve problems involving similar shapes where the scale factor is known or can be found. ***ACP: Quick multiple-choice quiz – plan in misconception options.*** Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. ***ACP: Quick multiple-choice quiz – plan in misconception options.***

Spring Block 2 Algebra		Use simple formulae. ***ACP: Quick multiple-choice quiz – plan in misconception options.*** Generate and describe linear number sequences. ***ACP: Quick whiteboard quiz. Orally assess reasoning to check for any misconceptions.*** Express missing number problems algebraically. ***ACP: Quick multiple-choice quiz – plan in misconception options.*** Find pairs of numbers that satisfy an equation with two unknowns. ***ACP: Low stakes quiz (2 or 3 questions). Orally assess reasoning.*** Enumerate possibilities of combinations of two variables. ***ACP: Low stakes quiz (2 or 3 questions). Orally assess reasoning.***	
Spring Block 3 Decimals	Identify the value of each digit in numbers given to three decimal places. ***ACP: Quick whiteboard quiz to ascertain awareness of digit values.***	Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8]. ***ACP: Quick whiteboard quiz. Orally assess understanding of association.*** Multiply and divide numbers by 10, 100 and 1000, giving answers up to three decimal places. ***ACP: Quick fire whiteboard quiz.*** Use written division methods in cases where the answer has up to two decimal places. ***ACP: Quick multiple-choice quiz – plan in misconception options.***	Solve problems which require answers to be rounded to specified degrees of accuracy. ***ACP: Quick multiple-choice quiz – plan in misconception options.***
Spring Block 4 Fractions, decimals and percentages	Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. ***ACP: Quick fire whiteboard quiz.***		

Spring Block 5 **Area, perimeter and volume**	Recognise that shapes with the same areas can have different perimeters and vice versa. ***ACP: Low stakes quiz. Orally assess reasoning.*** Recognise when it is possible to use formulae for area and volume of shapes. ***ACP: Quick quiz. Multiple choice of methods.***	Calculate the area of parallelograms and triangles. ***ACP: Low stakes quiz. Orally assess reasoning.*** 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]. ***ACP: Low stakes quiz. Orally assess reasoning.***	
Spring Block 6 **Statistics**		Interpret and construct pie charts and line graphs. ***ACP: Low stakes quiz. Pay attention to accuracy.*** Calculate and interpret the mean as an average. ***ACP: Quick multiple-choice quiz – plan in misconception options.***	Solve problems from pie charts and line graphs which have been constructed. ***ACP: Quick multiple-choice quiz – plan in misconception options.***
Summer Block 1 **Properties of Shape**	Recognise and describe simple 3-D shapes. ***ACP: Show shapes on IWB – name and describe on whiteboards/orally.*** Name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. ***ACP: Quick quiz – label circle and complete formula (d = 2r).*** Recognise angles where they meet at a point, are on a straight line, or are vertically opposite. ***ACP: Low stakes quiz to include all elements of the composite.***	Draw 2-D shapes using given dimensions and angles. ***ACP: Low takes quiz including 2 or 3 questions, Assess accuracy.*** Build simple 3-D shapes, including making nets. ***ACP: Practical session.*** Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons. ***ACP: Low stakes quiz. Orally assess reasoning.*** Illustrate parts of circles, including radius, diameter, and circumference. ***ACP: Low stakes quiz. Assess accuracy.***	
Summer Block 2 **Position and direction**	Describe positions on the full coordinate grid (all four quadrants). ***ACP: PPT displaying co-ordinate grid. Record on whiteboards.***	Draw and translate simple shapes on the coordinate plane and reflect them in the axes. ***ACP: Low stakes quiz (2 or 3 questions). Assess accuracy.***	

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