Maths Curriculum Overview – Lower Key Stage 2

YEAR 3

Year 3	Declarative- knowing what	Procedural- knowing how	Conditional- knowing when and why
Autumn Block 1 Place Value	Read and write numbers up to 1000 in numerals and in words. ***ACP: Quick quiz on whiteboards.*** Recognise the place value of each digit in a three-digit number. ***ACP: Quick quiz on whiteboards, focusing on digit values.*** Identify numbers using different representations. ***ACP: How many ways can you represent 7892?*** Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number. ***ACP: Oral skip counting and 10/100 more or less than questions.*** Know that 10 tens are equivalent to 1 hundred, and that 100 is 10 times the size of10; apply this to work out how many 10s there are in other 3-digit multiples of 10. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***	Order and compare numbers up to 1000. ***ACP: Fluent in 5 questions.*** Represent and estimate numbers using different representations. ***ACP: PPT quiz.*** Compose and decompose 3-digit numbers using standard and non-standard partitioning. ***ACP: How many ways can you partition 367? When & why might you use a particular decomposition?***	Reason about the location of any 3-digit number in the linear number system, including identifying the previous and next multiple of 100 and 10. ***ACP: Oral session using*** *ITP Number Line - Mathsframe* Solve number problems and practical problems involving the declarative and procedural knowledge above. ***ACP: Low stakes quiz.***
Autumn Block 2 Number: Addition and subtraction	Calculate complements to 100. ***ACP: Quick quiz n whiteboards.*** Understand and use the commutative property of addition and understand the related property for subtraction. ***ACP: Write a brief explanation as to why addition is commutative and subtraction is not.***	Add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens; a three-digit number and hundreds. ***ACP: Quick quiz to include missing numbers.*** Add and subtract numbers with up to three digits, using formal written	Solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures. ***ACP: Low stakes test.*** Apply their increasing knowledge of mental and written methods

		methods of columnar addition and subtraction. ***ACP: Quick quiz to include missing numbers.***	Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. ***ACP: Low stakes test, including space for children to explain methods.*** Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. ***ACP: Low stakes test.***
Autumn Block 3 Number: Multiplication and Division A	Recall multiplication facts, and corresponding division facts, in the 10, 5, 2, 4 and 8 multiplication tables, and recognise products in these multiplication tables as multiples of the corresponding number. ***ACP: Use TTRS to ensure recall speed is less than 3 seconds per response.*** 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. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***		
Consolidation			
Spring Block 1 Number: Multiplication and Division B		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. ***ACP: Quick quiz to cover all element of the composite.***	Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. ***ACP: Give the children multiplication and division problems. Ask them to solve them using as many of the above ways as possible.*** Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotative division).

			ACP: Quick quiz on whiteboards. Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. ***ACP: Write a mini explanation as to why multiplication is commutative and division is not. Give examples to match!***
Spring Block 2 Measurement: Length and Perimeter		Measure, compare, add and subtract lengths (m, cm, mm). ***ACP: Practical measuring session. Record +/- calculations.*** Measure the perimeter of simple 2-D shapes. ***ACP: Practical session.***	
Spring Block 3 Fractions	Recognise fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Recognise and show, using diagrams, equivalent fractions with small denominators. ***ACP: Quick fire questions. Record on whiteboards.***	Find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. ***ACP: Quick fire questions. Record on whiteboards.*** Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators. ***ACP: Quick fire questions. Record on whiteboards.*** Compare and order unit fractions, and fractions with the same denominators. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***	
Spring Block 4 Mass and capacity		Measure, compare, add and subtract mass (kg, g), volume/capacity (l, ml). ***ACP: Practical measuring session. Record +/- calculations.***	

Summer Block 1 Fractions	Interpret and write proper fractions to represent 1 or several parts of a whole that is divided into equal parts. ***ACP: Quick fire questions. Record on whiteboards.*** Find unit fractions of quantities using known division facts. (Multiplication tables fluency). ***ACP: Quick fire questions. Record on whiteboards.***	Add and subtract fractions with the same denominator within one whole. ***ACP:*** ***Quick fire questions. Record on whiteboards.***	Solve problems that involve Year 3 declarative and procedural fractions knowledge. ***ACP: Low stakes quiz including all of the above.*** Reason about the location of any fraction within 1 in the linear number system. ***ACP:* Oral session using** ITP Number Line - Mathsframe
Summer Block 2 Measurement: Money		Add and subtract amounts of money to give change, using both £ and p in practical contexts. ***ACP: Low stakes quiz. Possibly a practical session.***	
Summer Block 3 Measurement: Time	Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Estimate and read time with increasing accuracy to the nearest minute. ***ACP: Quick fire oral questions.*** Use vocabulary such as o'clock, a.m., p.m., morning, afternoon, noon and midnight. ***ACP: Quick fire oral questions.*** Know the number of seconds in a minute and the number of days in each month, year and leap year. ***ACP: Fluent in 5 questions.***	Record and compare time in terms of minutes, seconds and hours. ***ACP: Practical session – mins and secs.*** Compare the duration of events. ***ACP: Quick quiz on whiteboards.***	
Summer Block 4 Geometry: Shape	Recognise 3-D shapes in different orientations and describe them. ***ACP: Display shapes on slides. Quick quiz in response on whiteboards.*** Recognise angles as a property of shape or a description of turn. *ACP: Write a definition of an angle.* Identify right-angles, recognise that two right-angles make a half-turn, three	Draw 2-D shapes and make 3-D shapes using modelling materials. ***ACP: Practical session.*** Identify whether angles are greater than or less than right-angle. ***ACP: Display angles on slides. Quick quiz in response on whiteboards.***	

	make three quarters of a turn and four a whole turn. ***ACP: Quick fire questions on whiteboards.*** identify horizontal and vertical lines and pairs of perpendicular and parallel lines. ***ACP: Quick quiz – show in different orientations and sizes.*** Identify right angles in 2-D shapes in different orientations. ***ACP: Display shapes on slides. Quick quiz in response on whiteboards.***		
Summer Block 5 Statistics		Interpret and present data using bar charts, pictograms and tables. ***ACP: Low stakes quiz.***	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. ***ACP: Low stakes quiz.***
Summer Block 6 Consolidation			

YEAR 4

Year 4	Declarative- knowing what	Procedural- knowing how	Conditional- knowing when and why
Autumn Block 1 **Place Value**	Identify and represent numbers using different representations. ***ACP: How many ways can you represent 4378?*** Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones). ***ACP: Quick quiz on whiteboards, focusing on digit values.*** Count in multiples of 6, 7, 9, 25 and 1000. ***ACP: Oral counting as a class.*** Count backwards through zero to include negative numbers. ***ACP: Oral counting as a class.*** Find 1000 more or less than a given number. ***ACP: Fluent in 5 questions.*** Know that 10 hundreds are equivalent to 1 thousand, and that 1000 is 10 times the size of 100; apply this identify and work out how many hundreds there are in other 4-digit multiples of 100. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** 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. ***ACP: Fluent in 5 questions. Compare system with ours.***	Order and compare numbers beyond 1000. ***ACP: Fluent in 5 questions.*** Estimate numbers using different representations. ***ACP: Response to slides.*** Compose and decompose 4-digit numbers using standard and non-standard partitioning. ***ACP: How many ways can you partition 3679? When & why might you use a particular decomposition?*** Round any number to the nearest 10, 100 or 1000. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***	Reason about the location of any 4-digit number in the linear number system, including identifying the previous and next multiple of 1000 and 100 and rounding to the nearest of each. ***ACP: Oral session using*** *ITP Number Line - Mathsframe* Solve number and practical problems that involve all of the above and with increasingly large positive numbers. ***ACP: Low stakes quiz.***

Autumn Block 2 **Number: Addition and subtraction**		Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate. ***ACP: Quick quiz to include exchanging, missing box and find the mistake.***	Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why. ***ACP: Low stakes quiz. Include formal/mental methods.*** Solve problems involving multiplying and adding. ***ACP: Low stakes quiz on whiteboards*** Apply place-value knowledge to known additive and multiplicative number facts (scaling by 100). ***ACP: Quick quiz on whiteboards.*** Estimate and use inverse operations to check answers to a calculation. ***ACP: Quick quiz for estimation. Use whiteboards to record inverse calculation.***
Autumn Block 3 **Measurement: Area**	Recall multiplication and division facts for multiplication tables up to 12 × 12 and recognise products in multiplication tables as multiples of the corresponding number. ***ACP: Use TTRS to ensure recall speed is less than 3 seconds per response.***	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. ***ACP: Quick quiz.***	
Autumn Block 4 **Number: Multiplication and division A**		Find the area of rectilinear shapes by counting squares. ***ACP: Quick quiz.***	

Spring Block 1 **Number: Multiplication and division B**	Recognise factor pairs. ***ACP: Fluent in 5 questions.*** Divide 1000 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in multiples of 1000 with 2, 4, 5 and 10 equal parts. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Multiply and divide whole numbers by 10 and 100 (keeping to whole number quotients); understand this as equivalent to making a number 10 or 100 times the size. ***ACP: Quick quiz.***	Multiply two-digit and three-digit numbers by a one-digit number using formal written layout. ***ACP: Quick quiz to include exchanging, missing box and find the mistake.*** Use factor pairs and commutativity in mental calculations. ***ACP: Fluent in 5.*** Solve division problems, with 2-digit dividends and 1-digit divisors that involve remainders. ***ACP: Quick quiz to include algorithm and word problems.***	Interpret remainders appropriately according to the context. ***ACP: Hinge questions.*** Solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one digit. ***ACP: Low stakes quiz.*** Apply place-value knowledge to known additive and multiplicative number facts (scaling by 100). ***ACP: Quick quiz on whiteboards.*** Manipulate multiplication and division equations and understand and apply the commutative property of multiplication. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** Understand and apply the distributive property of multiplication. ***ACP: Explain how the distributive property of multiplication works to a Y3 child.*** Estimate and use inverse operations to check answers to a calculation. ***ACP: Quick quiz for estimation. Use whiteboards to record inverse calculation.***
Spring Block 2 **Measurement: Length and perimeter**		Convert between different units of measure (for example, kilometre to metre; hour to minutes). ***ACP*: *Quick quiz on whiteboards.*** Measure and calculate the perimeter of rectilinear figures (including squares) in centimetres and metres. ***ACP*: *Low stakes test.*** Find the perimeter of regular and irregular polygons. ***ACP*: *Quick quiz.***	

Spring Block 3 **Number: Fractions**	Recognise families of common equivalent fractions. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.***	Show, using diagrams, families of common equivalent fractions. ***ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.*** 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. ***ACP: Quick quiz.*** Add and subtract improper and mixed fractions with the same denominator, including bridging whole numbers. ***ACP: Fluent in 5 questions.*** Convert mixed numbers to improper fractions and vice versa. ***ACP: Quick quiz on whiteboards.***	Solve simple measure and money problems involving fractions and decimals to two decimal places. ***ACP: Low stakes quiz.*** Reason about the location of mixed numbers in the linear number system. ***ACP: Oral session using*** *ITP Number Line - Mathsframe*
Spring Block 4 **Number: Decimals A**	Recognise and write decimal equivalents to 1/4, 1/2, 3/4. ***ACP: Quick fire questions.*** Recognise and write decimal equivalents of any number of tenths or hundredths. ***ACP: Quick fire questions.***	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.] ***ACP: Record on whiteboards and explain orally. Can children use the correct vocabulary?***	
Summer Block 1 **Number: Decimals B**		Compare numbers with the same number of decimal places up to two decimal places. ***ACP: Compare 2 numbers on whiteboards using < and >.*** Round decimals with one decimal place to the nearest whole number. ***ACP: Oral session using*** *ITP Number Line - Mathsframe*	Solve simple measure and money problems involving fractions and decimals to two decimal places. ***ACP: Low stakes quiz.***
Summer Block 2 **Measurement: Money**		Estimate, compare and calculate different measures, including money in pounds and pence. ***ACP***: *Low stakes quiz.*	
Summer Block 3 **Measurement: Time**	Read and write time in analogue and digital 12- and 24-hour clocks.	Convert time between analogue and digital 12- and 24-hour clocks. ***ACP: Quick quiz on whiteboards.***	Solve problems involving converting units of time. ***ACP: Quick quiz on whiteboards.***

	ACP: Quick multiple-choice quiz. Plan in answers with misconceptions.	Convert from hours to minutes; minutes to seconds; years to months; weeks to days. ***ACP: Quick quiz on whiteboards.*** Convert between different units of measure (for example, kilometre to metre; hour to minutes). ***ACP: Quick quiz on whiteboards.***	
Consolidation			
Summer Block 4 Geometry: Shape	Identify acute and obtuse angles. ***ACP: Show angles on slides. Children identify orally.*** Identify regular polygons, including equilateral triangles and squares, as those in which the side-lengths are equal, and the angles are equal. ***ACP: Write a definition of a regular polygon and give examples.***	Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. ***ACP: Practical sorting activity, Explain reasoning.*** Compare and order angles up to two right angles by size. ***ACP: Quick quiz.*** Identify lines of symmetry in 2-D shapes presented in different orientations. ***ACP: Quick quiz.*** Reflect shapes in a line of symmetry and complete a symmetric figure or pattern with respect to a specified line of symmetry. ***ACP: Quick quiz.***	
Summer Block 5 Statistics		Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. ***ACP: Provide a set of data for children to present and interpret.***	Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. ***ACP Low stakes quiz.***

Summer Block 6 **Geometry: Position and direction**	Describe positions on a 2-D grid as coordinates in the first quadrant. ***ACP: Quick fire questions. Show positions on slides.***	Describe movements between positions as translations of a given unit to the left/right and up/down. ***ACP: Quick quiz.*** Plot specified points and draw sides to complete a given polygon. ***ACP: Low stakes quiz.*** Draw polygons specified by coordinates in the first quadrant and translate within the first quadrant. ***ACP: Low stakes quiz.***	