LincolnCarlton ACADEMY

The Mathematics Curriculum

September 2025 – July 2026

Intent

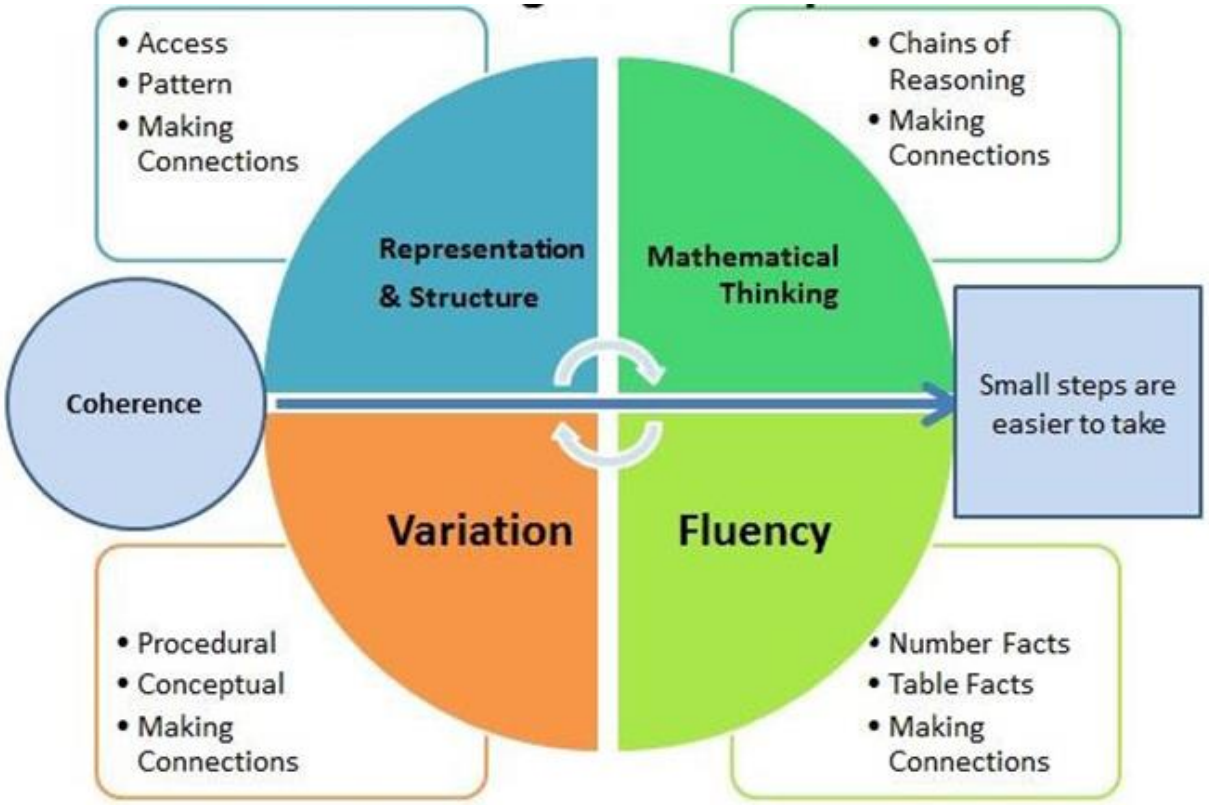
- We will deliver an inspiring and engaging mathematics curriculum, taught by highly-enthusiastic staff, which sparks curiosity and excitement and which nurtures confidence in maths. It will be progressive, well-sequenced and taught in small steps to ensure that children can keep up. We believe that everyone can do maths and that maths is for everyone…EVERYONE CAN!

We want children to:

- Use their reading skills to access mathematics lessons.
- Become confident, competent and independent mathematicians.
- Build a deep conceptual understanding of maths and its interrelated content so that children can apply their learning in different situations
- Develop their ability to articulate, discuss and explain their thinking using appropriate mathematical vocabulary and oracy skills.
- Value 'mistake friendly' classrooms where they see mistakes as learning tools – there is an emphasis placed upon developing the power to 'think' rather than just the 'do'.
- Develop into resilient and inquisitive learners – skills needed to become life-long mathematicians.
- Read between the lines to support them with problem solving and persevere.

Implementation

- The Maths Curriculum is delivered through the Power Maths Program and the Mastering Number Program (NCETM). This has been designed using the Five Big Ideas of Mastery Maths.



	• Subject and pedagogical knowledge of teachers is excellent and this is the key to delivery of our exceptional curriculum. This is achieved through regular coaching and bespoke professional development. • The vast majority of children progress through the curriculum content at the same pace. This is achieved using adaptive teaching strategies, live marking and rapid intervention. Concrete and pictorial resources play a central role to the delivery of the curriculum. • Practice and consolidation play a central role. Carefully designed variation within this builds fluency and understanding of underlying mathematical concepts • Challenge is achieved by emphasizing the importance of deepening knowledge and applying concepts to a broader range of contexts. • Provision will be made for children who are not making the expected level of progress through SEND Pupil Profiles and interventions • Regular and ongoing formative assessment informs teaching, as well as intervention, to support and enable the success of each child • Summative assessments take place at the end of every big term for children in Years 2 – 6. We use NTS Tests from Rising Stars for this. <u>Specifics of Curriculum Delivery</u> • Children in EYFS follow the Mastering Number Program and tis is delivered every day. • Children in Year 1 follow the Mastering Number Program (20 minutes per day) and the Power Maths program (1 hour per day) • Children in Years 2 – 5 follow the Power Maths Program (1 hour per day) and complete Fluent in Five every day. • Children in Year 4 and 5 follow the KS2 Mastering Number Program (15 minutes per day). • Children in Year 6 follow the Power Maths Sequence of learning but teachers use a variety of different resources (including Power Maths) to deliver the curriculum. This allows for more flexibility to ensure that children are ready for their transition to the Key Stage Three Curriculum. • All children will chant everyday – times tables in Year 3 to 6 and counting in Year 1 and 2.

Impact	When children move from LCA to the next part of their mathematical learning journey, they will be: • Resilient and willing to have a go. • Fluent with procedures and fact recall. • Confident to explain their reasoning. • Inquisitive and follow their own lines of enquiry. • Reflective and evaluate their answers and learning. • Creative to find their own solutions to problems. • Able to visualise their maths. • Enjoying maths and have belief in themselves.

Maths and children with Special Educational Needs

The graduated approach handbook for SEND students should be used to provide the simple, everyday strategies that should be employed to support learners in the classroom. The strategies below are aimed more specifically at adapting the maths curriculum for SEND learners.

Use clear and simple language and avoid jargon or overly complex terminology.	Keeping instructions and content straightforward will help them understand better.	Use concrete or visual support for mathematical discussions whenever possible.	Exploit the many forms of mathematical representation − eg pie charts, number lines, abacus, bar charts, tiles − and the connections between them. ICT can enable pupils to switch quickly between different representations.	Simple audio recording devices can replace the need for written explanations to reasoning and problem solving tasks.	Adults can scribe responses to reasoning and problem solving tasks.
Scaffolding when pupils use equipment, especially for tasks requiring accuracy or skill (eg drawing or measurement).	Prepare resources − eg preprepared grids for recording information can be helpful for some pupils.	Recognise that the language of mathematics may be challenging for many pupils. For example: " the specific mathematical use of everyday words such as 'tables', 'translate', 'right angle'	Pre-learning on important mathematical vocabulary and concepts.	Give pupils with communication impairments time to answer open-ended questions.	Use discussion of mathematical investigations to inform pupils' development of mathematical language and help them to analyse and understand what they have seen.
Invite pupils to reformulate concepts in their own words to check their understanding − eg asking pupils how they would explain it to another person, using cartoons.	Use targeted questioning to check the understanding of students.				

EYFS Long Term Plan

		Half Term 1	Half Term 2
Autumn Term	Number	• Perceptual subitising to 3 • Counting sequence; 1:1 correspondence, cardinality • Composition of 3 and 4; all numbers can be made of ones. • Subitising to 4; perceptual and conceptual; making. • Comparison Focus on language and thinking about attributes. • Cardinality - Focus on counting to 5 and the key representation of '5 fingers on one hand', and the die-five pattern	• Comparison by matching, including when groups are equal. • Composition: Focus on the concept of a 'whole' • Composition: Focus on the composition of 5 • Cardinality and counting: Counting beyond 5 • Subitising: Connect subitised quantities to numerals. • Ordinality: Order numbers to 5 • Focus on each number being 1 more than the previous number
	Shape, Space and Measures	• Prepositional Language • Exploring AB patterns • Explore 2D and 3D shapes	
Spring Term	Number	• Composition: Focus on the composition of 5 and identify missing parts • Composition: Introduce the '5 and a bit' structure using fingers and die frames as key representations. • Comparison: Focus on equal and unequal groups • Counting: Connect the counting sequence to ordinality. Connect ordinality and cardinality through the use of the 'staircase' pattern and explore '1 more' and '1 less' • Comparison using knowledge of ordinality rather than comparison by matching of quantities. Focus on noticing whether a change creates a number which is more or less than another • Composition of 7 as 2 groups, with a focus on '5 and a bit'	• Subitising: Practice subitising within 6. Explore doubles. • Composition: Sort odd and even numbers by looking at their tops; odd blocks and flat tops. • Counting, cardinality and ordinality: Count larger amounts and focus on strategies for counting. • Subitising: Focus on structured arrangements including the 10-frame. • Composition: Focus on representations of numbers using fingers and 10-frames. Focus on doubles using different representations
	Shape, Space and Measures	**Comparing measures – Length and Height** **Time – Daily routines and visual timetables**	

Summer Term	Number	• Comparison: Focus on ordinality: comparing numbers • Subitising and the rekenrek: 'Seeing' small quantities and numbers within larger quantities • Introduction to the rekenrek: Link familiar representations such as numbers of fingers to representations on the rekenrek. • Counting: Strategies for counting. Recognise the pattern of the counting system when beginning to count beyond 20. • Comparison: Compare groups of objects that are of different sizes/colours/attributes. Develop a sense of magnitude e.g., knowing that 8 is a lot more than 2, but that 4 is only a little bit more than 2. • Pattern in number: Investigate parts and wholes. Explore the composition of numbers to 10. Investigate equivalence, doubles and making odd and even numbers. • Deep understanding of numbers to 10: Continue to practically explore the composition of numbers to 10. Investigate 5 as a key 'anchor' in the number system. Begin to generalise about 1 more/1 less within 10. • Recall of number facts • Recall the 'numbers within' 3, 4, 5 and 10 • Recall double facts, up to '5 and 5 make 10' • Recall missing parts within 5	
	Shape, Space and Measures	• Complex patterns – AAB, ABB, AABB • Comparing measures – weight and capacity.	

Year 1 – Long Term Overview

	Week 1	Week 2	Week3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value (within 10)				Number: Addition and Subtraction (within 10)					Geometry: Shape	Number: Place Value (within 20)	
Spring	Consolidation	Number: Addition and Subtraction (within 20)			Number: Place Value (within 50)			Measurement: Length and Height		Measurement: Mass and Capacity		Consolidation
Summer	Consolidation	Number: Multiplication and Division			Number: Fractions		Geometry: Position and Direction	Number: Place Value (within 100)		Measurement: Money	Measurement: Time	

Year 2 – Long Term Overview

	Week 1	Week 2	Week3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value				Number: Addition and Subtraction					Geometry: Properties of shape.		Consolidation
Spring	Measurement: Money		Number: Multiplication and Division				Measurement: Length and Height		Measurement: Mass, capacity and temperature.		Consolidation	
Summer	Number: Fractions				Measurement: Time	Consolidation	Number: Problem Solving and efficient methods			Geometry: Position and direction.	Statistics	Consolidation

Year 3 – Long Term Overview

	Week 1	Week 2	Week3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autum	Number: Place Value			Number: Addition and Subtraction					Number: Multiplication and Division			
Spring	Number: Multiplication and Division			Measurement: Length and Perimeter		Number: Fractions		Measurement: Mass		Measurement: Capacity		Consolidation
Summer	Number: Fractions		Measurement: Money		Measurement: Time		Geometry: Angles and Properties of Shape		Statistics		Consolidation	

Year 4 – Long Term Overview

	Week 1	Week 2	Week3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value				Number: Addition and Subtraction			Measurement: Area	Number: Multiplication			Consolidation
Spring	Number: Multiplication and Division			Measurement Length and perimeter		Number: Fractions			Number: Decimals			Consolidation
Summer	Number: Decimals		Measurement: Money and Time		Geometry: Angles and 2D shapes.		Statistics	Geometry: Position and Direction		Consolidation		

Year 5 – Long Term Overview

	Week 1	Week 2	Week3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value			Number: Addition and Subtraction		Number: Multiplication and Division			Number: Fractions			
Spring	Number: Multiplication and Division		Number: Fractions		Number: Decimals and percentages			Measurement: Perimeter and area		Statistics: Graphs and tables		Consolidation
Summer	Geometry: Properties of Shapes		Geometry: Position and direction.		Number: Decimals			Number: Negative numbers.	Measurement: Converting Units		Measurement: Volume	Consolidation

Year 6 Long Term Overview

	Week 1	Week 2	Week3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value		Number: Addition, subtraction, multiplication and division					Number: Fractions				Geometry: Position and Direction
Spring	Number: Decimals		Number: Percentages		Statistics	Measuring: Converting Units	Measurement: Perimeter, Area and Volume		Number: Ratio			Geometry: Shape
Summer	Number: Algebra	Consolidation			Problem solving		Geometry: Shape		Statistics		Number: Ratio, proportion and algebra.	

Cross Curricular Links

Subject	Cross Curricular Links

Science	• Scientific skills:
	  ○ Measuring time, temperature, capacity, length, height
	  ○ Statistics: tables, tally charts, pictograms, bar charts, line graphs, pie charts
	• Earth and space – day and night, using vocabulary related to time. Orbits and the link to length of days, years, seasons
	• Changes of state and the link to temperature change.

Geography	• Weather patterns – measuring temperature in degrees Celsius. • Mapping and coordinates. • Field studies: measuring length, height, volume, weight
Design and Technology	• Nutrition and cooking – measures (weight, capacity) • Use tools and equipment to measure length and height. • Using nets to build 3D shapes.
Computing	• Patterns and sequencing
PE	• Read, interpret and record the time e.g. sprints, use of a stopwatch • Record the measurement in athletics e.g. cm and m

Progression in Mathematics: Number: Place Value

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Place Value: Counting	Count beyond 10.	Count to and across 10, forwards and backwards, beginning with 0 or 1, or from any given number. Count numbers to 100 in numerals. Count in multiples of twos, fives and tens.	Count in steps of 2, 3 and 5 from 0, and in tens from any number, forward and backwards.	Count from 0 in multiples of 4, 8, 50 and 100. Find 10 or 100 more or less than a given number.	Count in multiples of 6, 7, 9, 25 and 1000. Count backwards through zero to include negative numbers.	Count forwards and backwards in steps of powers of 10 for any given number up to 1 000 000. Count forwards and backwards with positive and negative whole numbers, including through zero.	
Place Value: Representing	Count objects, actions and sounds. Subitise (recognise quantities without counting) up to 5. Have a deep understanding of number to 10, including the composition of each number. Link the number symbol (numeral) with its cardinal number value.	Identify and represent numbers using objects and pictorial representations. Read and write numbers from 1 to 20 in numerals and words.	Read and write numbers to at least 100 in numerals and words. Identify, represent and estimate numbers using different representations, including the number line.	Identify, represent and estimate numbers using different representations. Read and write numbers up to 1000 in numerals and in words.	Identify, represent and estimate numbers using different representations. 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.	Read, write, order and compare numbers to least 1 000 000 and determine the value of each digit. Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit.
Place Value: Use place value and compare	Compare numbers using Use vocabulary: 'more than', 'less than', 'fewer', 'the same as', 'equal to'. Understand the 'one more than/one less than' relationship between consecutive numbers.	Given a number, identify one more and one less.	Recognise the place value of each digit in a two-digit number (tens and ones). Compare and order numbers from 0 to 100 using the <, > and + signs.	Recognise the place value of each digit in a three-digit number (hundreds, tens and ones). Compare and order numbers up to 1000.	Find 1000 more or less than a give number. Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones). Compare and order numbers beyond 1000.	Order and compare numbers to at least 1 000 000 and determine the value of each digit.	Order and compare numbers up to 10 000 000 and determine the value of each digit.

Place Value: Problems and Rounding			Use place value and number facts to solve problems.	Solve number problems and practical problems involving these ideas.	Round any number to the nearest 10, 100 or 1000. Solve number and practical problems that involve all of the above and with increasingly large positive numbers.	Interpret negative numbers in context. Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000. Solve number problems and practical problems that involve all of the above.	Round any whole number to the 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.

Progression in Mathematics: Addition and Subtraction

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Recall, represent and use	Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.	Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. Represent and use number bonds and related subtraction facts within 20.	Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.	Estimate the solution to a calculation and use inverse operations to check.	Estimate and use inverse operations to check solutions to a calculation.	Use rounding to check solutions to calculations and determine, in the context of a problem, levels of accuracy.	
Calculations		Add and subtract one-digit and two-digit numbers to 20, including 0.	Add and subtract numbers using concrete objects, pictorial representations and mentally, including: • A two-digit number and ones. • A two-digit number and tens. • Two two-digit numbers. • Adding three one-digit numbers.	Add and subtract numbers mentally, including: • A three-digit number and ones. • A three-digit number and tens. • A three-digit number and hundreds Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.	Add and subtract numbers with up to 4 digits using formal written methods of columnar addition and subtraction where appropriate.	Add and subtract whole numbers with more than 4 digits, including formal with methods (columnar addition and subtraction). Add and subtract numbers mentally with increasingly large numbers.	Perform mental calculations, including mixed operations and large numbers. Use their knowledge of the order of operations to carry out calculations involving the four operations.

Solve Problems		Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems.	Solve problems with addition and subtraction: • Using concrete objects and pictorial representations, including those involving numbers, quantities and measures. • Applying their increasing knowledge of mental and written methods.	Solve problems, including missing number problems, using number facts, place value and more complex addition and subtraction.	Solve addition and subtraction 2-step problems in contexts, deciding which operations and methods to use and why.	Solve addition subtraction multi-step problems in contexts, deciding which operations and methods to use and why. Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

Progression in Mathematics: Multiplication and Division

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Recall, represent and use	Recall some double facts.		Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.	Recall and use multiplication and division facts for 3, 4 and 8 multiplication tables.	Recall multiplication and division facts for multiplication tables up to 12 x 12. Use place value, known and derived facts to multiply and divide mentally, including: • Multiplying by 0 and 1. • Dividing by 1 • Multiplying three numbers together. Recognise and use factor pairs and commutativity in mental calculations.	Identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 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 numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3})	Identify common factors, common multiples and prime numbers. Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.
Calculations			Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=)	Write and calculate mathematical statements for multiplication and division using the multiplication tables that are known, including two-digit numbers multiplied by one-digit numbers, using mental and progressing to formal written methods.	Multiply two-digit and three-digit by one-digit numbers using formal written layout.	Multiply numbers up to 4 digits by one- or two-digit numbers using formal written method, including long multiplication for two-digit numbers. Multiply and divide numbers mentally drawing upon known facts.	Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the written formal 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

						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. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.	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 context. Perform mental calculations, including with mixed operations and large numbers.
Solve Problems		Solve one-step problems including multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.	Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	Solve problems including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which *n* objects are connected to *m* objects.	Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as *n* objects are connected to *m* objects.	Solve problems involving multiplication and division including using their knowledge of factors and multiplies, squares and cubes. Solve problems involving division, including scaling by simple fractions and problems involving simple rates.	Solve problems involving addition, subtraction, multiplication and division.
Combined Operatives						Solve problems involving addition, subtraction, multiplication and division and a combination of these including understanding and meaning of the equals sign.	Use knowledge of the order of operations to carry out calculations involving the four operations.

Progression in Mathematics: Fractions, decimals and percentages

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Fractions: Recognise and Write		Recognise, find and name a half as one of two equal parts of an object, shape or quantity. Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.	Recognise, find, name and write fractions 1/3, ¼, 2/4 and ¾ of a length, shape, set of objects or quantity.	Count up and down in tenths. Recognise that tenths arise from dividing an object into ten equal parts and in dividing one-digit numbers or quantities by ten. Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.	Count up and down in hundredths. Recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.	Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number.	
Fractions: Compare			Recognise the equivalence of 2/4 and ½.	Recognise and show, using diagrams, equivalent fractions with small denominators. Compare and order unit fractions, and fractions with small denominators.	Recognise and show, using diagrams, families of common equivalent fractions.	Compare and order fractions whose denominators are all multiples of the same number.	Use common factors to simplify fractions. Use common multiples to express fractions in the same denomination. Compare and order fractions including fractions > 1

Fractions: Calculations			Write simple fractions for example, ½ of 6 = 3	Add and subject fractions with the same denominator within one whole.	Add and subtract fractions with the same denominator.	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.	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 their simplest form. Divide proper fractions by whole numbers.
Fractions: Solve Problems				Solve problems using all of the above.	Solve problems involving increasingly larger fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number.		
Decimals: Recognise and write					Recognise and write decimal equivalents of any number of tenths or hundredths. Recognise and write decimal equivalents to ¼, ½ and ¾	Read and write decimals as fractions. Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.	Identify the value of each digit in numbers given to three decimal places.
Decimals: Compare					Round decimals with one decimal place to the nearest whole number. Compare numbers with the same number of decimal places up to 2 decimal places.	Round decimals with two decimal places to the nearest whole number and to one decimal place. Read, write, order and compare numbers with up to three decimal places.	

Decimals: Calculations and problems					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.	Solve problems involving numbers up to three decimal places.	Multiply and divide numbers by 10, 100 and 1000 giving answers to up to three decimal places. Multiply one digit numbers with up to 2 decimal places by whole numbers. Use written division methods in cases where the answer has up to 2 decimal places. Solve problems that require answers to be rounded to a specified degree of accuracy.
Fractions, decimals and percentages					Solve simple measures and money problems involving fractions and decimals to two decimal places.	Recognise the percent (%) symbol and understand that percent relates to 'number of parts per 100' and write percentages as a fraction with denominator 100, and a decimal. Solve problems which require knowing percentage and decimal equivalents of ½, ¼, 1/5, 2/5 and 4/5 and those fractions with a denominator of a multiple of 10 or 25.	Associate a fraction with division and calculate decimal fraction equivalents. Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

Progression in Mathematics: Ratio and Proportion

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Ratio and Proportion							Solve problems involving the relative sizes of two quantities where missing values can be found using integer multiplication and division facts. Solve problems involving the calculation of percentages and use 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.

Progression in Mathematics: Algebra

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Algebra		*Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems. **	*Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. **	*Solve problems, including missing number problems. **			Use simple formulae. Demonstrate and describe simple linear number sequences. Express missing number problems algebraically. Find pairs of numbers that satisfy and equation with two unknowns. Enumerate possibilities of combinations of two variables.

**Although algebraic notation is not included until Year 6, algebraic thinking starts much earlier as exemplified by 'missing number' objectives in years 1, 2 and 3.*

Progression in Mathematics: Measurement

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Measures: Using measures	Compare length, weight and capacity.	Compare, describe and solve practical problems for: • Lengths and heights • Mass and weight • Capacity and volume • Time Measure and begin to record the following: • Lengths and heights • Mass and weight • Capacity and volume • Time	Choose and use appropriate standard units to estimate and measure: Length/height in any direction (cm/m) Mass (kg, g) Temperature (°C) Capacity (l/ml) To the nearest appropriate unit using rulers, scales, thermometers and measuring vessels. Compare and order lengths, mass, volume/capacity and use <, > and = to record.	Measure compare, add and subtract lengths, mass and volume/capacity.	Convert between different units of measure (metric). Estimate, compare and calculate different measures.	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. Use all four operations to solve problems involving measure.	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 mass, length, volume and time from a smaller unit of measure to a larger unit and vice versa using decimal notation up to three decimal places. Convert between miles and kilometres.
Measures: Money		Recognise and know the value of different denominations of coins and notes.	Recognise and use symbols for pounds (£) and pence (p). Combine amounts to make a given value. Find different combinations of coins that equal the same amount of money.	Add and subtract amounts of money and give change, using both £ and p in practical contexts.	Estimate, compare and calculate different measures, including money in pounds (£) and pence (p).	Use all four operations to solve problems involving money.	

Measures: Time	Day and Night Morning, afternoon and evening Now and Next	Sequence events in chronological order using language such as tomorrow, today and yesterday, morning, afternoon and evening. Recognise and use language relating to dates including days of the week and months of the year. Tell the time to the hour and half past the hour and draw hands on a clock face to show these times.	Compare and sequence intervals of time. Tell and write the time to five minutes, including quarter past and to the hour and draw the hands on a clock face to show these times. Know the number of minutes in an hour and the number of hours in a day.	Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12- and 24-hour clocks. Estimate and read time with increasing accuracy to the nearest minute. Record and compare time in terms of seconds, minutes and hours. Use vocabulary such as o'clock, am/pm, morning, afternoon, noon and midnight. Know the number of seconds in a minute and the number of days in each month, year and leap year. Compare durations of events.	Read, write and convert time between digital and analogue 12-hour and 24-hour clocks. Solve problems involving converting for hours to minutes, minutes to seconds, years to months and weeks to days.	Solve problems involving converting units of time.	Use, read, write and convert between standard units, converting measurements of time from a smaller unit of measure to a larger unit and vice versa.

Measures: Perimeter, area and volume				Measure the perimeter of simple 2D shapes.	Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. Find the area of rectilinear shapes by counting squares.	Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. Calculate and compare the area of rectangles including the use of standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes. Estimate volume and capacity.	Recognise that shapes with the same area can have a different perimeter and vice versa. Recognise that it is possible to use formulae for area and volume of shape. Calculate the area of parallelograms and triangles. Calculate, estimate and compare volume of cubes and cuboids using standard units including cubic centimetres (cm^3) and cubic metres (m^3) and extending to other units such as mm^2 and km^2.

Progression in Mathematics: Geometry

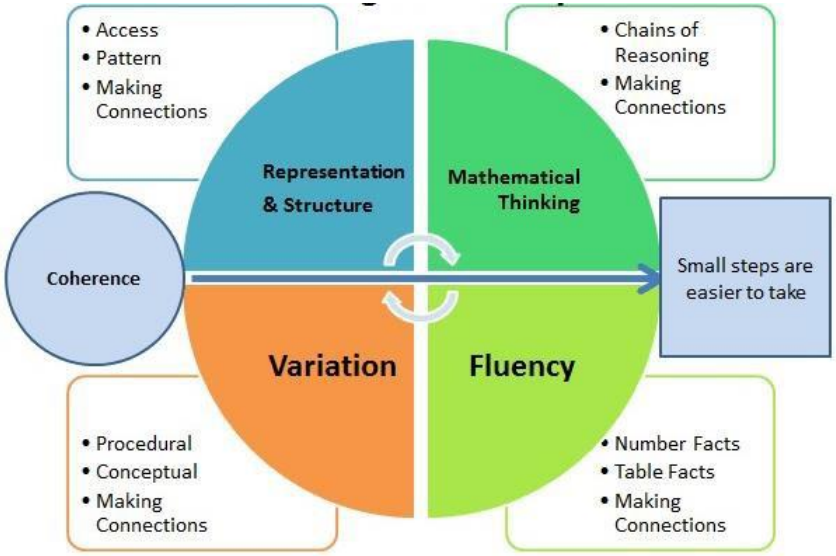
	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Geometry: 2D Shapes	Select, rotate and manipulate shapes in order to develop spatial reasoning skills. Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.	Recognise and name common 2D shapes including rectangles, squares, triangles and circles.	Identify and describe the properties of 2D shapes, including the number of sides and line of symmetry in a vertical line. Identify 2D shapes on the surface of 3D shapes (eg. Circles on cylinders and triangles on pyramids). Compare and sort common 2D shapes and everyday objects.	Draw 2D shapes.	Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. Identify lines of symmetry in 2D shapes presented in different orientations.	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.	Draw 2D shapes using given dimensions and angles. Compare and classify geometric shapes based on their properties and sizes. Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.
Geometry: 3D Shapes		Recognise and name common 3D shapes including cubes, cuboids, pyramids and spheres.	Recognise and name common 3D shapes Compare and sort common 3D shapes and everyday objects.	Make 3D shapes using modelling materials. Recognise 3D shapes in different orientations and describe them.		Identify 3D shapes including cubes and other cuboids, from 2D representations.	Recognise and build simple 3D shapes, including making nets.

Geometry: Angles and lines				Recognise angles as properties of shapes or descriptions of turns. Identify right angles, recognise that two right angles make a half turn, three make three-quarters of a turn and four make a full turn. Identify whether angles are greater than or less than a right angle. Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.	Identify acute and obtuse angles and compare and order angles up to two right angles in size. Identify lines of symmetry in 2D shapes presented in different orientations. Complete a simple symmetric figure with respect to a specific line of symmetry.	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 ½ and turn (total 180°) • Other multiples of 90°.	Find unknown angles in any triangles, quadrilaterals and regular polygons. Recognise angles where they meet at a point, are on a straight line or are 'vertically opposite' and find missing angles.
Geometry: Position and Direction	Continue, copy and create repeating patterns.	Describe position, direction and movement, including whole, half and quarter and three-quarter turns.	Order and arrange combinations of mathematical objects in patterns and sequences. Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half, three quarter and full turns (clockwise and anti-clockwise).		Describe positions on a 2D grid as coordinates in the first quadrant. Describe movements between positions as translations of a given unit to the left or right, up or down. Plot specified points and draw sides to complete a given polygon.	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.	Describe positions on the full coordinate grid (all four quadrants). Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.

Progression in Mathematics: Statistics

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Statistics: Present and interpret			Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.	Interpret and present data using bar charts, pictograms and tables.	Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.	Complete, read and interpret information in tables, including timetables.	Interpret and construct pie charts and line graphs and use these to solve problems.
Statistics: Solve problems			Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. Ask and answer questions about totalling and comparing categorical data.	Solve one-step and two-step questions using information presented in scaled bar charts and pictograms and tables.	Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.	Solve comparison, sum and difference problems using information presented in a line graph.	Calculate and interpret the mean as an average.

Appendix 1 - The Five Big Ideas for Mastery Maths



Coherence

Connecting new ideas to concepts that have already been understood, and ensuring that, once understood and mastered, new ideas are used again in next steps of learning, all steps being small steps

Representation and Structure

Representations used in lessons expose the mathematical structure being taught, the aim being that students can do the maths without recourse to the representation

Mathematical Thinking

If taught ideas are to be understood deeply, they must not merely be passively received but must be worked on by the student: thought about, reasoned with and discussed with others

Fluency

Quick and efficient recall of facts and procedures and the flexibility to move between different contexts and representations of mathematics

Variation

Varying the way a concept is initially presented to students, by giving examples that display a concept as well as those that don't display it. Also, carefully varying practice questions so that mechanical repetition is avoided, and thinking is encouraged.