



Intent

Maths

Intent



Intent

Maths

Why is maths important?

Mathematics is an important creative discipline that helps us to understand and change the world. We want all children at Laureate Community Academy to experience the beauty, power and enjoyment of mathematics and develop a sense of curiosity about the subject with a clear understanding. At Laureate we foster positive attitudes and we promote the fact that ‘We can all do maths!’ We believe all children can achieve in mathematics, and teach for secure and deep understanding of mathematical concepts through manageable steps. We use mistakes and misconceptions as an essential part of learning and provide challenge through rich and sophisticated problems. At our school, the majority of children will be taught the content from their year group only. They will spend time becoming true masters of content, applying and being creative with new knowledge in multiple ways.



Intent

Maths

Aims of the maths Curriculum

The national curriculum for mathematics aims to ensure that all pupils:

- Become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop a conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- Can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.



Intent

Maths

Our maths curriculum is:

- Informed by the National Curriculum;
- Carefully planned and structured to follow a clear pathway of progression through children's time at primary school
- Shaped by our school vision which aims to enable all children, regardless of background, ability or additional needs, to flourish to become the very best version of themselves they can possibly be.



Intent

Early Years

The EYFS framework is structured very differently to the national curriculum as it is organised across seven areas of learning rather than subject areas. The aim of this document is to help subject leaders to understand how the skills taught across EYFS feed into national curriculum subjects.

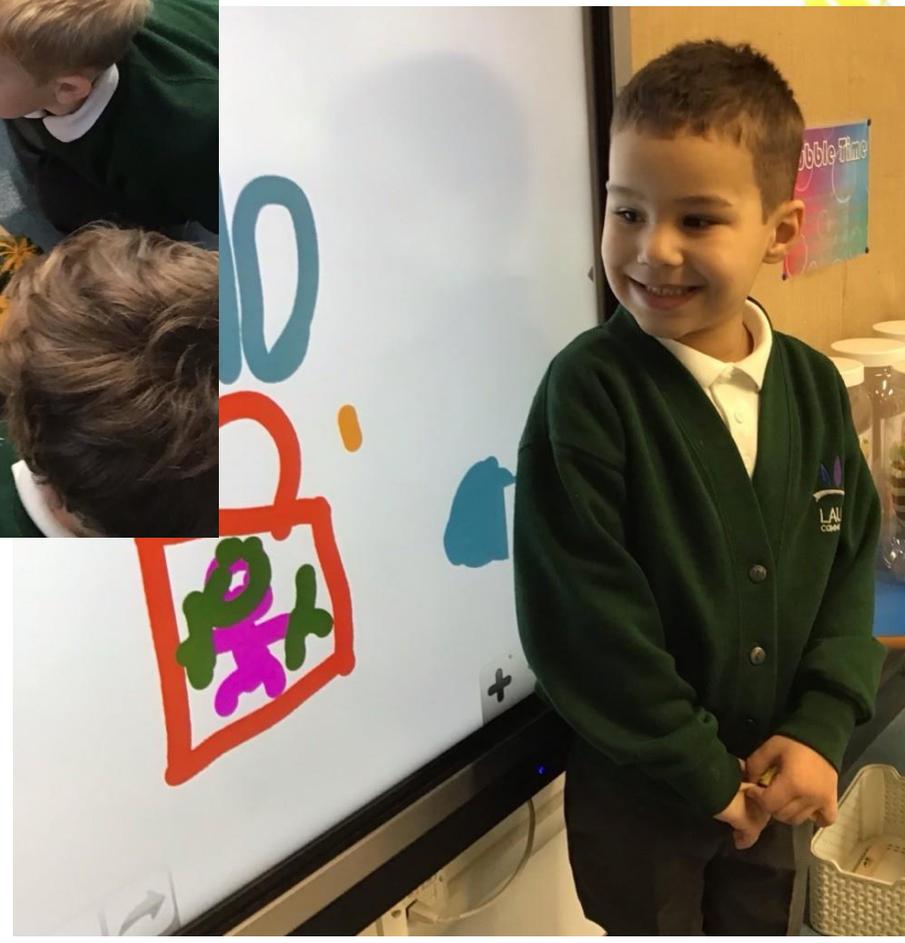
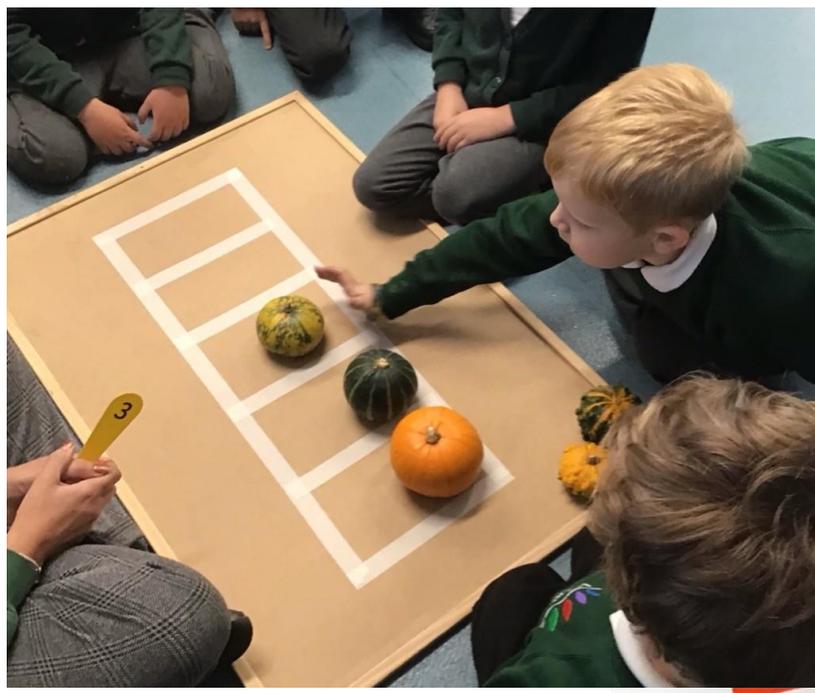
In Early Years, Math's is taught through:

- Adult led focus groups on the carpet;
- Adult led focus groups at tables;
- Independent play;
- Whole class input sessions;
- Songs, stories and poems.

Mathematical Vocabulary			
30-50 Months	Communication and Language	Speaking	To build up vocabulary that reflects the breadth of their experiences.
40-60 Months	Communication and Language	Speaking	To extend vocabulary, especially by grouping and naming, exploring the meaning and sounds of new words.
Number and Place Value			
Counting			
30-50 Months	Mathematics	Numbers	To recite numbers in order to 10. To realise not only objects, but anything can be counted including steps, claps or jumps.
40-60 Months	Mathematics	Numbers	To count up to three or four objects by saying one number name for each item. To count out up to six objects from a larger group. To count actions or objects which cannot be moved. To count objects to 10 and beginning to count beyond 10. To count an irregular arrangement of up to ten objects. To estimate how many objects they can see and check by counting them.
ELG	Mathematics	Numbers	To count reliably with numbers from one to 20.
Identifying, Representing and Estimating Numbers			
30-50 Months	Mathematics	Numbers	To use some number names and number language spontaneously. To know that numbers identify how many objects are in a set. To show an interest in representing numbers. To begin to represent numbers using fingers, marks on paper or pictures. To separate a group of three or four objects in different ways, beginning to recognise that the total is still the same. To sometimes match numeral and quantity correctly.

Maths in EYFS

Intent





Intent

Maths

Working mathematically in Key Stage 1:

The principal focus of mathematics teaching in key stage 1 is to ensure that children develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources [for example, concrete objects and measuring tools]. At this stage, children should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money. By the end of year 2, children should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency. Children should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.



Intent

Maths

Working mathematically in Lower Key Stage 2:

The principal focus of mathematics teaching in lower key stage 2 is to ensure that children become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers. At this stage, children should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that children draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number. By the end of year 4, children should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work. Children should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.



Maths

Working mathematically in Upper Key Stage 2:

Intent

The principal focus of mathematics teaching in upper key stage 2 is to ensure that children extend their understanding of the number system and place value to include larger integers. This should develop the connections that children make between multiplication and division with fractions, decimals, percentages and ratio. At this stage, children should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, children are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that children classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them. By the end of year 6, children should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages. Children should read, spell and pronounce mathematical vocabulary correctly.



Content and sequence - EYFS

EYFS maths at Laureate is taught through a bespoke scheme of lessons reflecting the needs of our pupils.

This planning is informed by a combination of:

- White Rose Hub
- Maths Mastery
- NCETM guidance

Intent

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Getting to know you (Take this time to play and get to know the children!)		Just like me!			It's me 1, 2, 3!			Light and Dark			
Spring	Alive in 5!		Growing 6, 7, 8			Building 9 and 10			Consolidation			
Summer	To 20 and Beyond		First, then, now			Find My Pattern			On the Move			

Cardinality and Counting

The cardinal value of a number refers to the quantity of things it represents, e.g. the numerosity, 'howmanyness', or 'threeness' of three. When children understand the cardinality of numbers, they know what the numbers mean in terms of knowing how many things they refer to. Counting is one way of establishing how many things are in a group, because the last number you say tells you how many there are. Children enjoy learning the sequence of counting numbers long before they understand the cardinal values of the numbers. Subitising is another way of recognising how many there are, without counting.

Activities and opportunities	Practitioner notes
Counting: saying number words in sequence Children need to know number names, initially to five, then ten, and extending to larger numbers, including crossing boundaries 19/20 and 29/30. Counting back is a useful skill, but young children will find this harder because of the demand it places on the working memory.	<ul style="list-style-type: none"> • counting backwards, for example <i>number rhymes</i> • starting from different numbers.
Counting: tagging each object with one number word Children need lots of opportunities to count things in irregular arrangements. For example, how many play people are in the sandpit? How many cars have we got in the garage? These opportunities can also include counting things that cannot be seen, touched or moved.	<ul style="list-style-type: none"> • counting things of different sizes – this helps children to focus on the numerosity of the count • counting things that can't be seen, such as sounds, actions, words • counting things that cannot be moved, such as pictures on a screen, birds at the bird table, faces on a shape.
Counting: knowing the last number counted gives the total so far Children need the opportunity to count out or 'give' a number of things from a larger group, not just to count the number that are there. This is to support them in focusing on the 'stopping number' which gives the cardinal value.	<ul style="list-style-type: none"> • playing dice games to collect a number of things • playing track games and counting along the track.

Mathematics Curriculum Map: Reception

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11
Autumn	Early mathematical experiences		Pattern and early number		Numbers within 6		Addition and subtraction within 6		Measures	Shape and sorting	
	<ul style="list-style-type: none"> • Classifying objects based on one attribute • Matching equal and unequal sets • Comparing objects and sets • Ordering objects and sets 		<ul style="list-style-type: none"> • Recognise, describe, copy and extend colour and size patterns • Count and represent the numbers 1 to 3 • Estimate and check by counting 		<ul style="list-style-type: none"> • Count up to six objects. • One more or one fewer • Order numbers 1 – 6 • Conservation of numbers within six 		<ul style="list-style-type: none"> • Explore zero • Explore addition and subtraction 	<ul style="list-style-type: none"> • Estimate, order compare, discuss and explore capacity, weight and lengths 	<ul style="list-style-type: none"> • Describe, and sort 3-D shapes • Describe position accurately 		
Spring	Numbers within 10		Calendar and time	Addition and subtraction within 10	Grouping and sharing		Number patterns within 15		Doubling and halving	Shape and pattern	
	<ul style="list-style-type: none"> • Count up to ten objects • Represent, order and explore numbers to ten • One more or fewer, one greater or less 	<ul style="list-style-type: none"> • Days of the week, seasons • Sequence daily events 	<ul style="list-style-type: none"> • Explore addition as counting on and subtraction as taking away 	<ul style="list-style-type: none"> • Counting and sharing in equal groups • Grouping into fives and tens • Relationship between grouping and sharing 		<ul style="list-style-type: none"> • Count up to 15 objects and recognise different representations • Order and explore number patterns to 15 • One more or fewer 	<ul style="list-style-type: none"> • Doubling and halving • Relationship between doubling and halving 	<ul style="list-style-type: none"> • Describe and sort 2-D and 3-D shapes • Recognise, complete and create patterns 			
Summer	Securing addition and subtraction facts		Number patterns within 20		Number patterns beyond 20	Money	Measures		Exploration of patterns within number		
	<ul style="list-style-type: none"> • Commutativity • Explore addition and subtraction • Compare two amounts 	<ul style="list-style-type: none"> • Count up to 10 and beyond with objects • Represent, compare and explore numbers to 20 • One more or fewer 	<ul style="list-style-type: none"> • One more one less • Estimate and count • Grouping and sharing 	<ul style="list-style-type: none"> • Coin recognition and values • Combinations to total 20p • Change from 10p 	<ul style="list-style-type: none"> • Describe capacities • Compare volumes • Compare weights • Estimate, compare and order lengths 	<ul style="list-style-type: none"> • Explore numbers and strategies • Recognise and extend patterns • Apply number, shape and measures knowledge • Count forwards and backwards 					



Content and Sequence: Year 1



Mathematics Curriculum Map: Year 1

Mastery

Intent

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
Autumn	Numbers to 10		Addition and subtraction within 10		Shape and patterns		Numbers to 20		Addition and subtraction within 20	
	<ul style="list-style-type: none"> • Represent, compare and explore numbers within 10 • One more and one less • Doubling and halving 		<ul style="list-style-type: none"> • Represent and explain addition and subtraction • Commutativity • Addition and subtraction facts 		<ul style="list-style-type: none"> • Identify, describe, sort and classify 2-D and 3-D shapes • Investigate repeating patterns • Use and follow instructional and positional language 		<ul style="list-style-type: none"> • Identify, represent, compare and order numbers to 20 • Doubling and halving • One more and one less 		<ul style="list-style-type: none"> • Represent and explain addition and subtraction strategies including 'Make Ten' • Use known facts to add and subtract 	

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	
Spring	Time		Exploring calculation strategies within 20		Numbers to 50		Addition and subtraction within 20		Fractions		Measures: Length and mass
	<ul style="list-style-type: none"> • Read, write and tell the time to o'clock and half past on analogue clock • Sequencing daily activities • Whole and half turns linked to time 		<ul style="list-style-type: none"> • Model, explain and choose addition and subtraction strategies 		<ul style="list-style-type: none"> • 2-digit numbers – represent, sequence, explore, compare. • Count in 2s, 5s and 10s • Describe and complete number patterns 		<ul style="list-style-type: none"> • Illustrate, explain and link addition and subtraction with equations • Apply 'Make Ten' strategy • Use language to quantify and compare difference 		<ul style="list-style-type: none"> • Identify $\frac{1}{2}$ and $\frac{1}{4}$ of a shape or object • Find $\frac{1}{2}$ and $\frac{1}{4}$ of a quantity 		<ul style="list-style-type: none"> • Compare and measure lengths and mass using cm and kg • Doubling and halving

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
Summer	Numbers 50 to 100 and beyond		Addition and subtraction		Money		Multiplication and division		Measures: Capacity and volume	
	<ul style="list-style-type: none"> • Read, write, represent, compare and order numbers to 100 • One more / fewer, ten more / fewer • Identify number patterns 		<ul style="list-style-type: none"> • Explore addition and subtraction involving 2-digit numbers and ones • Represent and explain addition and subtraction with regrouping • Investigate number bonds within 20 		<ul style="list-style-type: none"> • Name coins and notes and understand their value • Represent the same value using different coins • Find change 		<ul style="list-style-type: none"> • Share equally into groups • Doubling • Link halving to fractions • Add equal groups • Explore arrays 		<ul style="list-style-type: none"> • Compare capacities, volumes and lengths • Explore litres • Apply understanding of fractions to capacity 	

Content and Sequence: Year 2

		Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn		Numbers within 100		Addition and subtraction of 2-digit numbers		Addition and subtraction word problems		Measures: Length		Graphs	Multiplication and division: 2, 5, and 10		
		<ul style="list-style-type: none"> Read, write, represent, partition, compare and order numbers to 100 Explore patterns including, odds and evens, tens and ones 	<ul style="list-style-type: none"> Apply number bonds to add and subtract Represent and explain addition and subtraction of two 2-digit numbers. Add three 1-digit numbers 	<ul style="list-style-type: none"> Introduction to bar models as a representation Create, label and sketch bar models 	<ul style="list-style-type: none"> Draw and measure lengths in centimetres Use $<$, $>$ and $=$ to compare and order lengths in metres and centimetres 	<ul style="list-style-type: none"> Represent and interpret: pictograms, block diagrams, tables and tally charts. 	<ul style="list-style-type: none"> Calculate the times tables of 2, 5, and 10 by skip counting Relate the 2 times table to doubling Explore representations of multiplication and division Commutativity 						
Spring		Time		Fractions		Addition and subtraction of 2-digit numbers		Money		Face, shapes and patterns; lines and turns			
		<ul style="list-style-type: none"> Tell the time on an analogue clock: quarter past, quarter to and five minute intervals Calculate durations of time in minutes and seconds Sequence daily events Minutes in an hour and hours in a day 	<ul style="list-style-type: none"> Part-whole relationships Fractions as part of a whole or a whole set Relate to division Equivalent fractions 	<ul style="list-style-type: none"> Illustrate, represent and explain addition and subtraction involving regrouping including 'Make Ten', 'Round and adjust' and near doubles strategies 	<ul style="list-style-type: none"> Recognise coins and notes Use £ and p accurately Add and subtract amounts Calculate change 	<ul style="list-style-type: none"> Explore, sort and describe 2-D shapes Lines of symmetry in 2-D shapes Identify 2-D shapes on 3-D shapes Compare and sort 2-D and 3-D shapes Use language to describe position, direction and rotation to follow a route 							
Summer		Numbers within 1000	Measures: Capacity and volume		Measures: Mass	Exploring calculation strategies		Multiplication and division: 3 and 4					
		<ul style="list-style-type: none"> Represent in different ways Compare using symbols Read scales 	<ul style="list-style-type: none"> Read and measure temperature Estimate, measure and understand litres and millilitres Compare and order capacities 	<ul style="list-style-type: none"> Weigh and compare masses in kilograms and grams 	<ul style="list-style-type: none"> Apply addition and subtraction strategies to solve equations Illustrate and explain addition and subtraction using column method 	<ul style="list-style-type: none"> Multiplication and division facts for 3 and 4 Relate 4 times table to doubling the 2 times tables Describe, interpret and represent using arrays and bar models Recognise inverse relationship 							

Content and Sequence: Year 3



Mathematics Curriculum Map: Year 3

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11
Autumn	Number sense and exploring calculation strategies			Place value		Graphs	Addition and subtraction			Length and perimeter	
	<ul style="list-style-type: none"> • Read, write, order and compare numbers to 100 • Calculate mentally using known facts, round and adjust, near doubles, adding on to find the difference • Derive new facts from a known fact 			<ul style="list-style-type: none"> • Read, write, represent, partition, order and compare 3-digit numbers • Find 10 and 100 more or less • Round to the nearest multiple of 10 and 100 		<ul style="list-style-type: none"> • Collect, interpret and present data using charts and tables 	<ul style="list-style-type: none"> • Develop and use a range of mental calculation strategies • Illustrate and explain formal written methods – column method 			<ul style="list-style-type: none"> • Measure, draw and compare lengths • Add and subtract lengths • Calculate perimeter 	
Spring	Multiplication and division		Deriving multiplication and division facts			Time		Fractions			
	<ul style="list-style-type: none"> • Multiplication and division facts for 2, 3, 4, 5, 6, 8 and 10 • Multiplicative structures: equal groups/parts, change and comparison, correspondence problems • Relationships: commutativity and inverse 		<ul style="list-style-type: none"> • Multiply and divide by 10 and 100 • Multiply a 2-digit number by 2, 3, 4, 5 and corresponding division situations • Divide 2-digit by a 1-digit 			<ul style="list-style-type: none"> • Tell, record, write and order the time analogue and digital • 12-hour, a.m., p.m. • Measure, calculate and compare durations 		<ul style="list-style-type: none"> • Part-whole relationships • Fractions as part of a whole or a whole set and as a number • Add, subtract, compare and order fractions 			
Summer	Angles and shape			Measures			Securing multiplication and division		Exploring calculation strategies and place value		
	<ul style="list-style-type: none"> • Identify angles including right angles and recognise as a quarter of a turn • Identify and draw parallel and perpendicular lines • Draw/make, classify and compare 2-D and 3-D shapes • Measure the perimeter 			<ul style="list-style-type: none"> • Read scales with different intervals when measuring mass and volume • Weigh and compare masses and capacities with mixed units • Estimate mass and capacity 			<ul style="list-style-type: none"> • Recall and use multiplication and division facts for 6 and 8 times table 		<ul style="list-style-type: none"> • Add and subtract mentally • Find 10, 100 and 1000 more or less • Order and compare beyond 1000 • Round numbers 		



Content and Sequence: Year 4



Mathematics Curriculum Map: Year 4

Intent

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
Autumn	Reasoning with large numbers		Addition and subtraction			Multiplication and division			Discrete and continuous data	
	<ul style="list-style-type: none"> •4-digit place value. Read, write, represent, order and compare •Find 10, 100 or 1000 more or less •Round numbers to the nearest 10, 100 or 1000 		<ul style="list-style-type: none"> •Select appropriate strategies to add and subtract •Illustrate and explain appropriate addition and subtraction strategies including column method with regrouping 				<ul style="list-style-type: none"> •Distributive property including multiplying three 1-digit numbers •Mental multiplication and division strategies using place value and known and derived facts •Short multiplication and division 			<ul style="list-style-type: none"> •Read, interpret and construct pictograms, bar charts and time graphs •Compare tables, pictograms and bar charts

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11
Spring	Securing multiplication facts		Fractions			Time		Decimals		Area and perimeter	
	<ul style="list-style-type: none"> •Identify and explore patterns in multiplication tables including 7 and 9 	<ul style="list-style-type: none"> •Explore different interpretations and representations of fractions •Equivalent fractions •Represent fractions greater than one as mixed number and improper fractions •Add and subtract fractions with the same denominator including fractions greater than one 				<ul style="list-style-type: none"> •Analogue to digital, 12-hour and 24-hour •Convert between units of time 	<ul style="list-style-type: none"> •Decimal equivalents to tenths, quarters and halves •Compare and order numbers with same number of decimal places •Multiply and divide by 10 and 100 including decimals 			<ul style="list-style-type: none"> •Perimeter of rectangles and rectilinear shapes •Area of rectangles and rectilinear shapes •Investigate area and perimeter 	

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
Summer	Solving measures and money problems			Shape and symmetry			Position and direction	Reasoning with pattern and sequences		3-D shape
	<ul style="list-style-type: none"> •Convert units of measure •Select appropriate units to measure •Use strategies to investigate problems: trial and improvement, organising using lists and tables, working systematically 			<ul style="list-style-type: none"> •Classify, compare and order angles •Compare and classify 2-D shapes •Identify lines of symmetry 			<ul style="list-style-type: none"> •Describe and plot using coordinates •Describe translations 	<ul style="list-style-type: none"> •Roman numerals up to 100 •Place value of other number systems •Number sequences and patterns 		<ul style="list-style-type: none"> •Use understanding of 3-D shapes •Identify 3-D shapes from 2-D representations



Content and Sequence: Year 5

Mathematics Mastery Curriculum Map: Year 5

Intent

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
Autumn	Reasoning with large whole integers		Integer addition and subtraction		Line graphs and timetables		Multiplication and division			Perimeter and area
	<ul style="list-style-type: none"> • Read, write, order and compare numbers up to one million • Round numbers within one million to the nearest multiple of powers of ten • Read Roman numerals up to M 		<ul style="list-style-type: none"> • Use rounding to estimate • Use a range of mental calculation strategies to add and subtract integers • Illustrate and explain the written method of column addition and subtraction • Select efficient calculation strategies 		<ul style="list-style-type: none"> • Complete, read and interpret data presented in line graphs • Read and interpret timetables including calculating intervals 		<ul style="list-style-type: none"> • Identify multiples and factors • Investigate prime numbers • Multiply and divide by 10, 100 and 1000 (integers) • Derived facts • Illustrate and explain formal multiplication and division strategies such as short and long • Use a range of mental calculation strategies 			<ul style="list-style-type: none"> • Investigate area and perimeter of rectilinear shapes • Estimate area of non-rectilinear shapes

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
Spring	Fractions and decimals			Angles		Fractions and percentages			Transformations	
	<ul style="list-style-type: none"> • Read, write, order and compare decimals • Round decimals to the nearest whole number • Represent, identify, name, write, order and compare fractions (including improper and mixed numbers) • Calculate fractions of amounts 			<ul style="list-style-type: none"> • Classify, compare and order angles • Measure and draw angles with a protractor • Understand and use angle facts to calculate missing angles 		<ul style="list-style-type: none"> • Add, subtract fractions with denominators that are multiples of the same number • Multiply fractions (and mixed numbers) by a whole number • Explore percentage, decimal, fractions equivalence 			<ul style="list-style-type: none"> • Coordinates in all four quadrants • Translation and reflection • Calculate intervals across zero as a context for negative numbers 	

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
Summer	Converting units of measure		Calculating with whole numbers and decimals			2-D and 3-D shape		Volume	Problem solving	
	<ul style="list-style-type: none"> • Convert between metric units of length, mass and capacity and units of time • Know and use approximate conversion between imperial and metric 		<ul style="list-style-type: none"> • Mental strategies to add and subtract involving decimals • Formal written strategies to add, subtract and multiply involving decimals • Multiply and divide by 10, 100 and 1000 involving decimals • Derive multiplication facts involving decimals 			<ul style="list-style-type: none"> • Classify 2-D shapes and reason about regular and irregular polygons • Properties of diagonals of quadrilaterals • Classify 3-D shapes • 2-D representations of 3-D shapes. 		<ul style="list-style-type: none"> • Use cube numbers and notation • Estimate volume • Convert units of volume 	<ul style="list-style-type: none"> • Negative numbers and calculating intervals across zero • Calculating the mean • Interpret remainders • Investigate numbers: consecutive, palindromic, multiples 	



Content and Sequence: Year 6



Mathematics Curriculum Map: Year 6 Mastery

The first two units need to be taught before any other units as these cover place value and the four operations and ensure firm foundations for the rest of the learning.

The remaining units can be taught in any order with the following caveats:

- The first five lessons of the first Fractions unit should be taught prior to learning on calculating with fractions.
- The Proportion problems unit should only be taught after the units on fractions, decimals and percentages.

Intent

1) Integers and decimals (10 lessons)	2) Multiplication and division (15 lessons)	3) Calculation problems (10 lessons)	4) Fractions (10 lessons)	5) Missing angles and length (5 lessons)
<ul style="list-style-type: none"> • Represent, read, write, order and compare numbers up to ten million • Round numbers, make estimates and use this to solve problems in context • Solve multi-step problems involving addition and subtraction 	<ul style="list-style-type: none"> • Identify and use properties of number, focusing on primes • Multiply larger integers and decimal numbers using a range of strategies • Divide integers by 1-digit and 2-digit numbers representing remainders appropriately • Illustrate and explain formal multiplication and division strategies 	<ul style="list-style-type: none"> • Understand the use of brackets • Use knowledge of the order of operations to carry out calculations • Generate and describe linear number sequences • Express missing number problems algebraically • Solve equations with unknown values 	<ul style="list-style-type: none"> • Deepen understanding of equivalence • Order, simplify and compare fractions, including those greater than one • Recall equivalence between common fractions and decimals • Find decimal quotients using short division • Add and subtract fractions 	<ul style="list-style-type: none"> • Compare and classify a range of geometric shapes • Use angle facts to find unknown angles
6) Coordinates and shapes (10 lessons)	7) Fractions (5 lessons)	8) Decimals and measure (15 lessons)	9) Percentage and statistics (10 lessons)	10) Proportion problems (10 lessons)
<ul style="list-style-type: none"> • Draw a range of geometric shapes using given dimensions and angles • Describe, draw, translate and reflect shapes on a co-ordinate plane • Recognise and construct 3-D shapes • Name and illustrate parts of a circle 	<ul style="list-style-type: none"> • Represent multiplication involving fractions • Multiply two proper fractions • Divide a fraction by an integer 	<ul style="list-style-type: none"> • Use, read, write and convert between standard units of measures; length, mass, time, money and volume as well as imperial units • Calculate the area of parallelograms and triangles • Calculate, estimate and compare the volume of cuboids 	<ul style="list-style-type: none"> • Calculate and compare percentages of amounts • Connect percentages with fractions • Explore the equivalence of fractions, decimals and percentages • Calculate the mean • Construct and interpret lines graphs and pie charts • Compare pie charts 	<ul style="list-style-type: none"> • Use fractions to express proportion • Identify ratio as a relationship between quantities and as a scale factor • Unequal sharing involving ratio



Implementation

Maths

Implementation



Implementation

We teach the National Curriculum using the Maths Mastery scheme which supports a clear skills and knowledge progression. This is also supported where appropriate with other rigorously tested schemes including White Rose. This ensures that skills and knowledge are built on year by year and sequenced appropriately to maximise learning for all children.



Implementation

Teaching of maths:

- Maths Mastery is our primary scheme of work for mathematics across key stage 1 and 2.
- White Rose Hub is used as an additional quality assured scheme to support Maths Mastery where needed.
- Numbots is used in Years 1 and 2 for the consolidation of key number facts.
- Times Table Rockstars is used from Year 2 to 6 for practicing and consolidation of key number facts.
- Arithmetic tests are used from Year 2 upwards on a bi weekly or weekly basis (dependent on year group) to practice and monitor core fluency skills.



Interleaved learning

Maths Mastery is a blocked learning scheme. As such, certain strands of maths are not covered until a later date. To ensure the revisiting of concepts, we plan and deliver interleaved learning sessions as part of weekly maths meetings. These focus on fluency skills and a themed approach to each session.

We also use Assessment For Learning (AFL) to adapt planning, plan for boosters and deliver post teaching.



Implementation

Maths Meetings

We believe that Maths Meetings are a vital part of our approach to teaching mathematics. They are used to consolidate key learning for 10-15 minutes three times per week.

Maths Meetings provide an opportunity to teach and revise 'general knowledge maths' which may not explicitly be covered during the maths lesson. They are also used to consolidate key areas of mathematics within our classes.

This means that children are practising concepts and skills on a regular basis, therefore they are continually building on their mastery of these concepts.

Singing and chanting should form an integral part of the Maths Meetings. The elements of maths covered in Maths Meetings should be fun and enjoyable for children, so it is important that children appreciate, learn from and relish these experiences.



Minimum lesson expectations

All maths lessons will incorporate the following elements:

- Explicit teaching of vocabulary
- Revisiting of prior learning
- Question comprehension and applying a method
- Whole class feedback
- Every child challenged every lesson
- Fluency, reasoning and problem solving in most lessons
- Evidence of learning in pupil's books



Vocabulary in EYFS - 6

When discussing their findings or presenting information, children are encouraged to speak using full sentences and incorporating key mathematical vocabulary to explain their thinking. This is modelled by teachers using strategies such as thinking talk.

Pupils are encouraged to use sentence stems to develop their explanation and reasoning skills. These stems sentences include:

I know this.....because...

I can explain it by.....

I have noticed that.....

I think this because.....

If I know this....I know that.....



Planning

Staff are expected to adapt the long term and medium term plans from Maths Mastery for the needs of their learners and use the flexible time within the year to meet the current needs of all children.

Plans should be printed off and annotated with the following information: changes to lessons; directions for additional adults; use of additional resources (such as White Rose Hub materials etc) and other information as appropriate.



Tailoring for SEND

At Laureate we aim for all mathematics lessons and learning questions to be accessible to all pupils.

We provide concrete and pictorial prompts to aid understanding and recall.

In addition, working walls are utilised in all lessons to minimise cognitive overload, so children can use and apply their knowledge more easily.

Sentence stems can be used where necessary to aid with written reasoning and problem solving.

Pre and post teaching of mathematical vocabulary and fluency skills provide all children with the opportunity to demonstrate an understanding of their mathematical learning.



Impact

Maths

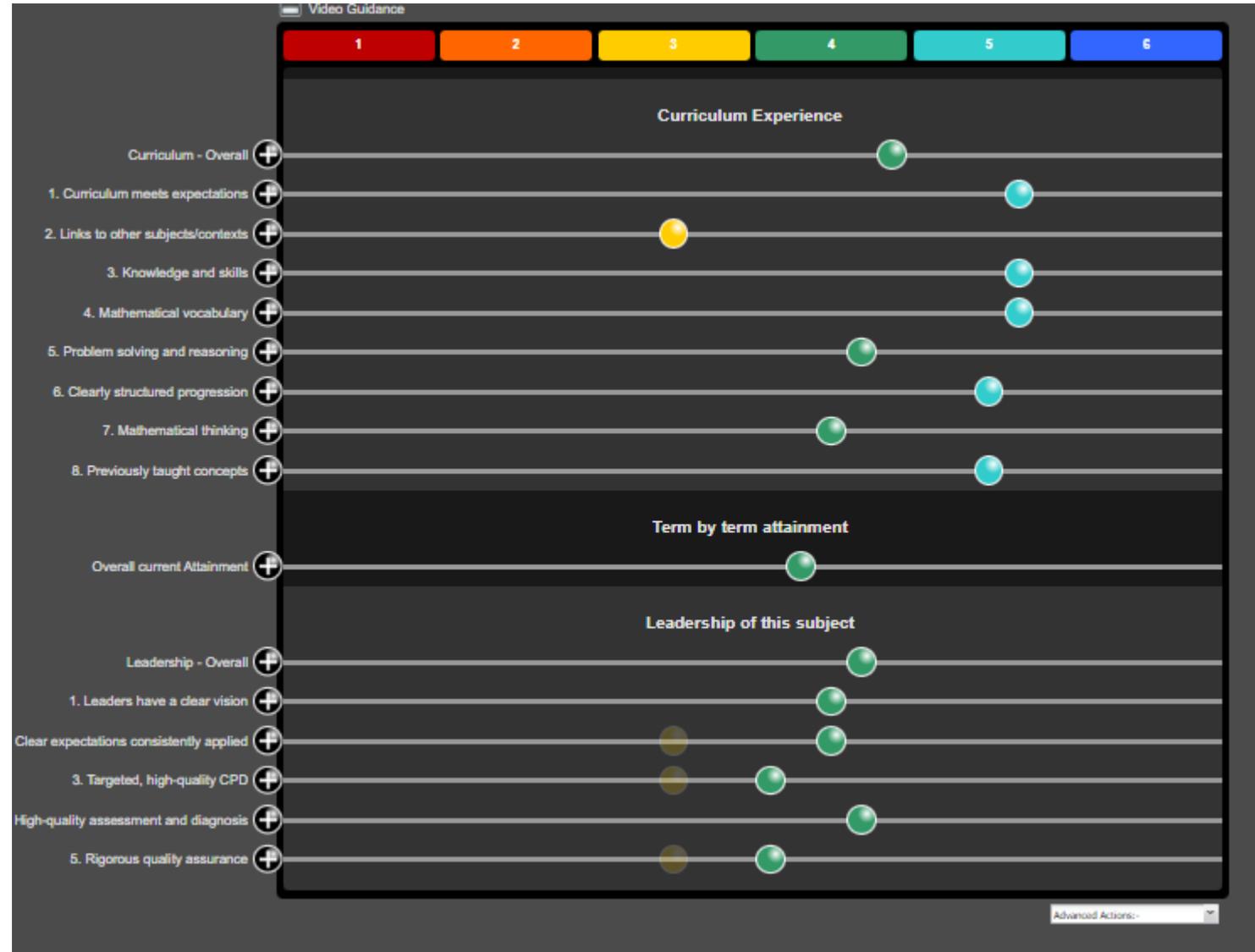
Impact



Impact

How do we measure the impact of Maths teaching?

Subject Leaders use iAbacus as a self-assessment and planning tool for developing their subject, as seen in this example:





Impact

Multiplication Tables Check

Schools in England are required to administer an online multiplication tables check (MTC) to year 4 children. The purpose of the MTC is to determine whether children can recall their times tables fluently, which is essential for future success in mathematics. It will help schools to identify children who have not yet mastered their times tables, so that additional support can be provided.

Children in Year 4 are given staggered times tables tests to identify focus areas and to help build fluency. To further support children with their multiplication practice we use 'Times Tables Rockstars' as an online learning platform, which also offer resources to be used in the classroom.



Impact

Arithmetic assessments

The purpose of the arithmetic assessments is to give children discrete weekly time in which to consolidate and develop their core arithmetic skills, which are essential for future success in mathematics. It will help teachers to identify children who have not yet mastered their core fluency skills in preparation for end of key stage 2 assessment.

Weekly breakdown

- Year 2, 3 and 4 complete arithmetic assessments fortnightly.
- Years 5 and 6 complete these weekly.



Impact

Pupil book study

Senior leaders and subject leaders regularly undertake a Book Study to monitor the effectiveness of teaching and learning. This includes sessions with small groups of pupils using questioning to check and ensure information and knowledge is acquired and understood with increasing confidence. Feedback is given to teaching staff to inform future planning.

These also provide an opportunity for subject leaders to provide targeted CPD opportunities for



Impact

Teacher assessment

- Key questioning
- Key vocabulary
- Verbal feedback
- Plenaries designed to check understanding of lesson topic and reasoning
- Weekly arithmetic papers to measure progress
- Fortnightly times tables tests
- Use of trust assessment grid and PiXL assessments
- Use of termly tests to help measure progress