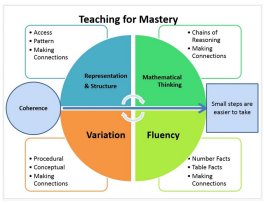
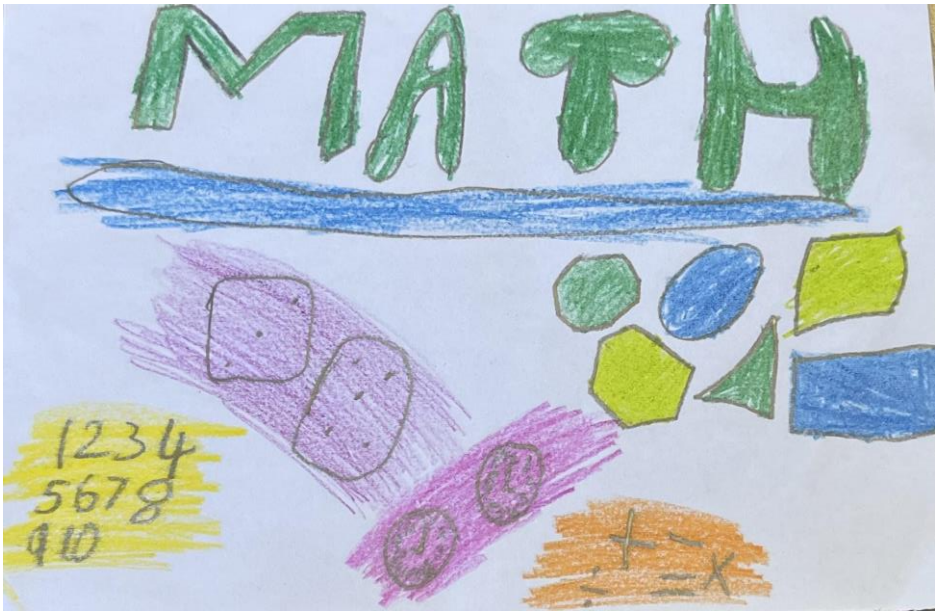


Working with NCETM
NATIONAL CENTRE FOR EXCELLENCE IN THE TEACHING OF MATHEMATICS

Maths



Shirley Infant School

KPIS should be referred to for end of EYFS and KS1 summative assessment

1. Subject Design:

A Shirley School Mathematician...

Will develop a passion for Mathematics in our children in order for them to become confident learners who are able to tackle the use of numbers in everyday life. Mathematics enables us to explain, quantify and answer questions about the world around us. Mathematics is for everyone. It empowers children with the ability to use reason and logic when solving problems, and enables them to start thinking in an abstract way. The strands of Mathematics, which we grasp at an early age, continue to be threaded through our adult lives, making it necessary for children to become confident, numerate individuals. We endeavour to ensure that children develop a healthy and enthusiastic attitude towards Mathematics that will stay with them. We believe that Mathematics learning should be fun and engaging, and that it is underpinned by our values. It is vital that the children learn in a practical way using real objects and pictures.

2. Concepts:

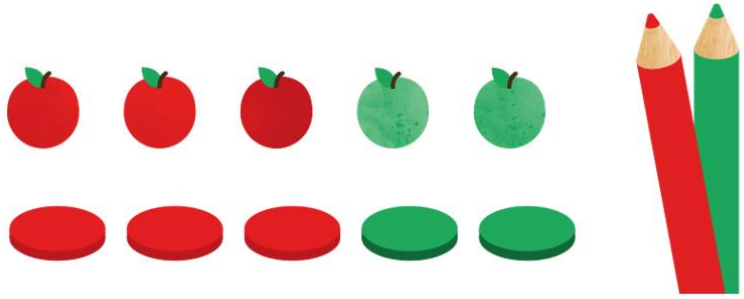
Concrete (do it), pictorial (see it), abstract (symbolic)
CPA method

Children can find maths difficult because it is abstract. The CPA approach builds on children's existing knowledge by introducing abstract concepts in a concrete and tangible way. It involves moving from concrete materials, to pictorial representations, to abstract symbols and problems.

Concrete (do it)
During this stage, students use concrete objects to model problems.

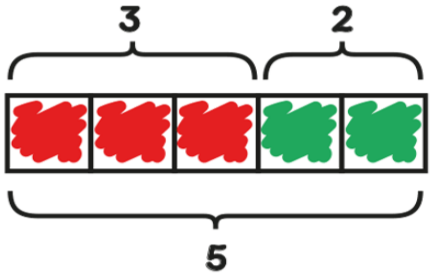
Pictorial (see it)
Building or drawing a model makes it easier for children to grasp difficult abstract concepts (for example, fractions). Simply put, it

helps students visualise abstract problems and make them more accessible.



Abstract (symbolic)

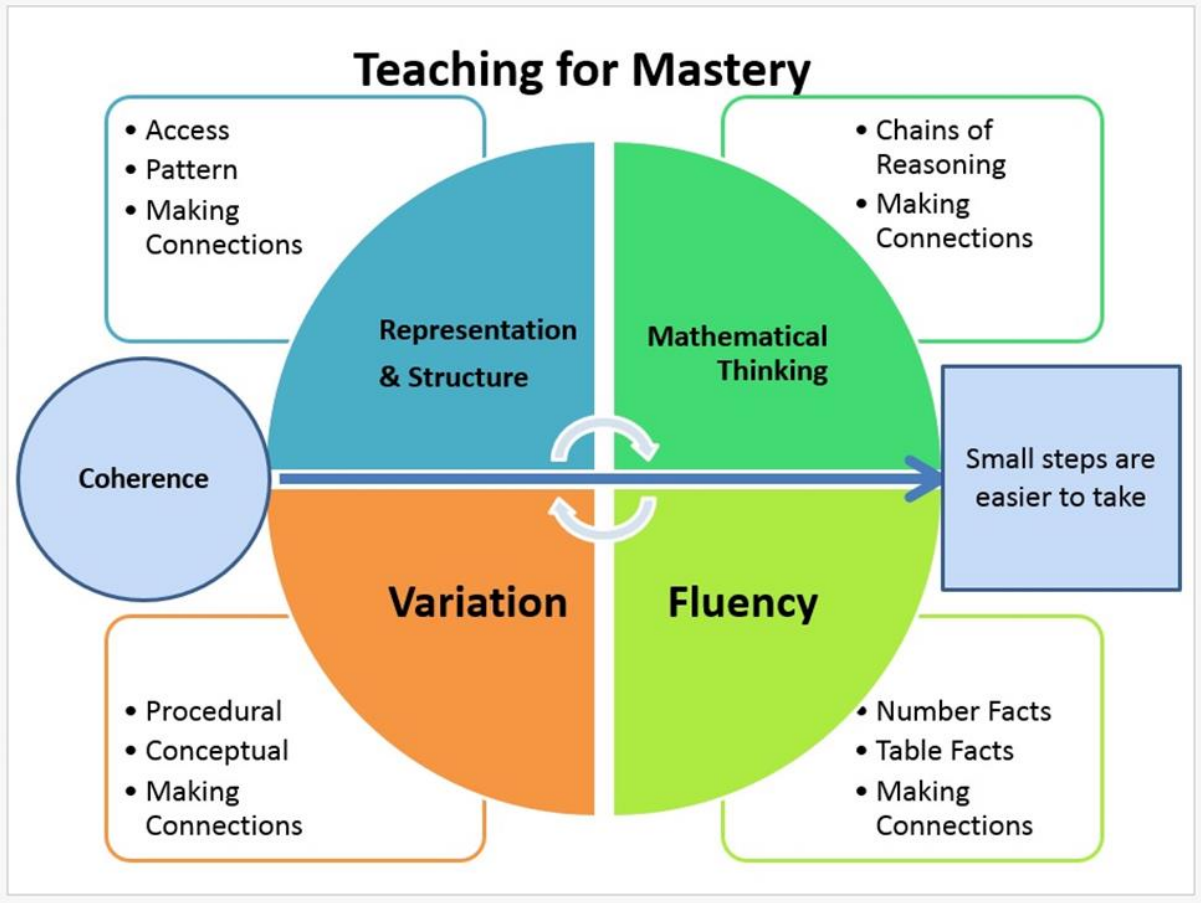
where children use abstract symbols to model problems such as addition and subtraction.



$3 + 2 = \boxed{5}$

Big Ideas of Maths Mastery:

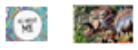
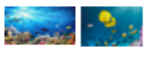
1. Representation and structure
2. Mathematical thinking
3. Variation
4. Fluency
5. Coherence (running throughout)



3. Topic Overview:

Maths overviews have interleaving and opportunities to combine concepts and apply this to different contexts. These are set from R to 2 and should be followed exactly.

Year R Maths Overview 2023 -2024

How do we catch children who are not keeping up with the planned curriculum? Interventions / a rotation in Maths groups						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	 	 	 		 	
Week 1	Baseline	Pattern	Number sense - introduce zero Number sense - represent 4 and 5	Time	Number bonds to 5	Doubling
Week 2		Position	Number sense - compare 4 and 5	Number sense - represent, compare and composition of 9 and 10	Count beyond 20	Sharing and grouping
Week 3		2D shape - circles, triangles, squares and rectangles.	Number sense - composition 4 and 5	Comparing numbers to 10	Making 20 Recognising patterns of the number system	Odd and even
Week 4	Matching and sorting		Mass and capacity	3D shape	Adding	Number bonds to 5 (and 10)
Week 5	Number sense - represent 1, 2, 3	Length and height	Number sense - represent, compare and composition of 6, 7 and 8	Pattern	Subtraction	Reasoning
Week 6	Number sense - compare 1, 2, 3	One more and one less		Spatial awareness	Compose and decompose	Interleaving opportunities
Week 7	Number sense - composition 1, 2,	Time	Combination two amounts	Interleaving opportunities	Reasoning	

<u>Number sense to include:</u>

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.)

Subitise (subitising is recognising how many things are in a group without having to count them one by one. Children need opportunities to see regular arrangements of small quantities.)

Conversation (Knowing that the number does not change if things are rearranged. Children need the opportunity to recognise amounts that have been rearranged and to generalise that, if nothing has been added or taken away, then the amount is the same.)

Comparison (understanding that comparing numbers involves knowing which numbers are worth more or less than each other. Comparing numbers involves knowing which numbers are worth more or less than each other. This depends both on understanding cardinal values of numbers and also knowing that the later counting numbers are worth more (because the next number is always one more). This understanding underpins the mental number line which children will develop later, which represents the relative value of numbers, i.e. how much bigger or smaller they are than each other.

Composition (understanding that one number can be made up from (composed from) two or more smaller numbers. Knowing numbers are made up of two or more other smaller numbers involves 'part-whole' understanding. Learning to 'see' a whole number and its parts at the same time is a key development in children's number understanding. Partitioning numbers into other numbers and putting them back together again underpins understanding of addition and subtraction as inverse operations.)

Year 1 Maths Overview – 2023- 2024

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1 Prove its in books	Summer 2 Mental maths to be recorded in books
Mental Maths	Number bonds Writing numbers Counting forwards and backwards from any given number Doubles					
Week 1	**Number – number and place value** given a number, identify one more and one less	**Number – number and place value** count, read and write numbers to 20 in numerals; count in multiples of twos, fives and tens	**Number – number and place value** count, read and write numbers to 20 in numerals; count in multiples of twos, fives and tens	**Number – multiplication** solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	**Measurement** compare, describe and solve practical problems for: ♣ lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] ♣ mass/weight [for example, heavy/light, heavier than, lighter than] ♣ capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] ♣ time [for example, quicker, slower, earlier, later]	**Geometry – properties of shapes** recognise and name common 2-D and 3-D shapes, including: 2-D shapes [for example, rectangles (including squares), circles and triangles]
Week 2	**Number – number and place value** count, read and write numbers to 10 in numerals; count in multiples of twos, fives and tens	**Number – addition** add one-digit and two-digit numbers to 20, including zero	**Number – number and place value** count to and across 20, forwards and backwards, beginning with 0 or 1, or from any given number	**Number – division** solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	**Measurement** measure and begin to record the following: ♣ lengths and heights ♣ mass/weight ♣ capacity and volume ♣ time (hours, minutes, seconds)	**Number – addition** add one-digit and two-digit numbers to 20, including zero
Week 3	**Number – number and place value** count to and across 10, forwards and backwards, beginning with 0 or 1, or from any given number		**Number – subtraction** subtract one-digit and two-digit numbers to 20, including zero	**Number – number and place value** ♣ count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens ♣ count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number	**Measurement** recognise and know the value of different denominations of coins and notes	**Geometry – position and direction** describe position, direction and movement, including whole, half, quarter and three-quarter turns.
Week 4	**Number – number and place value** identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least	**Number – addition and subtraction** represent and use number bonds and related subtraction facts within 20		**Number – addition** ♣ add one-digit and two-digit numbers to 20, including zero ♣ solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = - 9	**Measurement** sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]. recognise and use language relating to dates, including days of the week, weeks, months and years	
Week 5	**Number – number and place value** read and write numbers from 1 to 20 in numerals and words	**Number – addition** solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = - 9	**Number – subtraction** solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = - 9	**Number – fractions** recognise, find and name a half as one of two equal parts of an object, shape or quantity	**Measurement** tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.	**Number – multiplication** solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher
Week 6	**Geometry – properties of shapes** recognise and name common 2-D and 3-D shapes, including: 2-D shapes [for example, rectangles (including				**Number – fractions** recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.	**Number – division** solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations

	squares), circles and triangles]					and arrays with the support of the teacher
Week 7	**Geometry – properties of shapes** recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres].	**Number – addition and subtraction** read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs				Interleaving opportunities

Year 2 Maths Overview – 2023- 2024

	Autumn 1	Autumn 2	Spring 1 Mental maths to be recorded in books	Spring 2	Summer 1 Prove its in books	Summer 2
Mental Maths	Number bonds Writing numbers Counting forwards and backwards from any given number Doubles and near doubles Halving Round, adjust, count on					
Week 1	**Number – number and place value** count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward ♣ recognise the place value of each digit in a two-digit number (tens, ones) ♣ identify, represent and estimate numbers using different representations, including the number line ♣ compare and order numbers from 0 up to 100; use and = signs ♣ read and write numbers to at least 100 in numerals and in words ♣ use place value and number facts to solve problems.	**Number – addition** solve problems with addition: ♣ using concrete objects and pictorial representations, including those involving numbers, quantities and measures ♣ applying their increasing knowledge of mental and written methods ♣ recall and use addition to 20 fluently, and derive and use related facts up to 100 ♣ add 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 ♣ one-digit numbers ♣show that	**Number – multiplication** recall and use multiplication for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers ♣ calculate mathematical statements for multiplication within the multiplication tables and write them using the multiplication (×), and equals (=) signs ♣ show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot ♣ solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and	**Measurement** ♣ compare and sequence intervals of time ♣ tell and write the time to five minutes, including quarter past/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.	**Measurement** choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels ♣ compare and order lengths, mass, volume/capacity and record the results using >, < and = ♣ recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value ♣ find different combinations of coins that equal the same amounts of money ♣ solve simple problems in	**Geometry – properties of shapes** ♣ identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line ♣ identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces ♣ identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] ♣ compare and sort common 2-D and 3-D shapes and everyday objects.

		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.	division facts, including problems in contexts.		a practical context involving addition and subtraction of money of the same unit, including giving change	
Week 2					**Number – fractions** recognise, find, name and write fractions 3 1 , 4 1 , 4 2 and 4 3 of a length, shape, set of objects or quantity ♣ write simple fractions for example, 2 1 of 6 = 3 and recognise the equivalence of 4 2 and 2 1.	**Number – addition and subtraction** 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.
Week 3	**Continue place value and start addition** solve problems with addition: ♣ using concrete objects and pictorial representations, including those involving numbers, quantities and measures up to 20. ♣ recall and use addition to 20 fluently, and derive and use related facts up to 20.	**Number – subtraction** solve problems with subtraction: ♣ using concrete objects and pictorial representations, including those involving numbers, quantities and measures ♣ applying their increasing knowledge of mental and written methods ♣ recall subtraction facts to 20 fluently, and derive and use related facts up to 100 ♣ subtract numbers using concrete objects, pictorial representations, and mentally, including: ♣ a two-digit number and ones ♣ a two-digit	**Number – division** recall and use division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers ♣ calculate mathematical statements for division within the multiplication tables and write them using division (÷) and equals (=) signs ♣ show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot ♣ solve problems involving multiplication and division, using materials, arrays, repeated	**Number – subtraction** solve problems with subtraction: ♣ using concrete objects and pictorial representations, including those involving numbers, quantities and measures ♣ applying their increasing knowledge of mental and written methods ♣ recall subtraction facts to 20 fluently, and derive and use related facts up to 100 ♣ subtract numbers using concrete objects, pictorial representations, and mentally, including: ♣ a two-digit number and ones ♣ a two-digit		**Number – subtraction** solve problems with subtraction: ♣ using concrete objects and pictorial representations, including those involving numbers, quantities and measures ♣ applying their increasing knowledge of mental and written methods ♣ recall subtraction facts to 20 fluently, and derive and use related facts up to 100 ♣ 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	addition, mental methods, and multiplication and division facts, including problems in contexts.	number and tens ♣ two two-digit numbers		number and tens ♣ two two-digit numbers
Week 4	**Geometry – position and direction** 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 and three-quarter turns (clockwise and anticlockwise).				**Number – multiplication** recall and use multiplication for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers ♣ calculate mathematical statements for multiplication within the multiplication tables and write them using the multiplication (×), and equals (=) signs ♣ show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot ♣ solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	**Geometry – position and direction** 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 and three-quarter turns (clockwise and anticlockwise).
Week 5	**Measurement** ♣ compare and sequence intervals of time ♣ tell and write the time to five minutes, including quarter past/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.		**Number – fractions** recognise, find, name and write fractions 3 1 , 4 1 , 4 2 and 4 3 of a length, shape, set of objects or quantity ♣ write simple fractions for example, 2 1 of 6 = 3 and recognise the equivalence of 4 2 and 2 1 .	**Number – addition** solve problems with addition: ♣ using concrete objects and pictorial representations, including those involving numbers, quantities and measures ♣ applying their increasing knowledge of mental and written methods ♣ recall and use addition to 20 fluently, and derive and use related facts up to 100 ♣ add numbers using concrete objects, pictorial representations, and mentally, including: ♣ a two-digit number and ones ♣ a two-digit number and tens ♣ two		**Interleaving opportunities**
Week 6	**Geometry – properties of shapes** ♣ identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line ♣ identify and describe the properties of 3-D shapes, including the number of edges,	**Statistics** interpret and construct simple pictograms, tally charts, block diagrams and simple tables ♣ ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity ♣ ask and			**Number – division** recall and use division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers ♣ calculate mathematical statements for division within the multiplication tables and write them using division (÷) and	

	vertices and faces ♣ identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] ♣ compare and sort common 2-D and 3-D shapes and everyday objects.	answer questions about totalling and comparing categorical data.		two-digit numbers ♣ adding three one-digit numbers ♣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.	equals (=) signs ♣ show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot ♣ solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.	
Week 7						

4. Knowledge Progressions:

https://www.ncetm.org.uk/classroom-resources/progression-maps-for-key-stages-1-and-2/

Maths Vocabulary Progression

EYFS – new vocabulary						
Number and Place Value	**Addition and Subtraction**	**Multiplication and Division**	**Measure**	**Geometry (position and direction)**	**Geometry (properties of shape)**	**Problem solving**
Number Zero 1-20 Count on/back Lots, more Few, fewer Compare, sort, order Before, after Less Many Most The same as Ones Pair	Add More Altogether Takeaway Number line One more One less Equals Equal to Double Half How many? Make Total	Times Counting in ones Counting in twos Counting in fives Counting in tens Lots of Groups of Once Twice Five times Sharing Share Set Group Left Left over	Days of the week Week, month, year, weekend Birthday, holiday Morning, afternoon, evening, night, midnight Bedtime, dinnertime, playtime Today, yesterday, tomorrow Before, after, next, last Now, soon Early, late Quick, fast, slow Old, new Watch, clock Always, never First Size, weight, capacity, time, money Long, longer, longest Short, shorter, shortest Heavy, light Empty, full Tall, small, large Thick, thin Low, deep Ruler Far, near Holds, container Weigh, weighs coin Pound, pence, penny Cost, money Buy, sell, pay, price How many?	Position Distance After, before In, on, inside, under On top of Behind Next to Above, below Top, bottom Side, outside Around, underneath In front, front, back Before, middle Up, down Forwards, backwards Across Close, far, along To, from Slide, roll, turn Stretch, bend, move	Shape Group, sort Round, flat, straight Make, build, draw Square, circle, triangle Cube, cuboid, sphere **Fractions** Double Half Whole	Listen Join in, say Think, imagine, remember Start from, start with, start at Look at, point to Put, place Fit, change, split Carry on What comes next? Find, choose, collect, use Make, build Tell me Pick out Talk about, explain, show me Read, write Finish, copy Colour, tick, cross, draw Draw a line between Join (up), ring, arrow Cost, count Work out, answer Fill in, check In order Every Each

	Year 1 – new vocabulary and previous vocabulary							
Number and Place Value	**Addition and Subtraction**	**Multiplication and Division**	**Geometry (time and money)**	**Measure (Length, Mass and Capacity)**	**Geometry (position and direction)**	**Geometry (properties of shape)**	**Fractions**	**Problem solving**
20-100 Count on/to/from Count up/down Least, fewest, smallest Greater, lesser Equal to Odd, even Units, tens Ten more/less Digit, numeral, figure(s) Compare In order/a different order Size, value Between Halfway between Above, below	Number bonds Addition, plus Sum, greater Inverse Near double Halve Is the same as Equals sign Difference between How many more to make…? How, many more is…than…? How much more is…? Subtract, minus How many fewer is…than…? How much less is…?	Odd, even Count in twos Count in fives Count in tens Count forwards from/backwards from How many times? Multiple of Multiply Repeated addition Array Row Column Halve Share equally Group in pairs, threes, etc. Equal groups of Divide Divided by	Seasons: Spring, Summer, Autumn, Winter Quicker, quickest, quickly, faster, fastest Slower, slowest, slowly Older, oldest Newer, newest Takes longer, takes less time Hour, o clock, half past, hands How long ago? How long will it be to…? How long will it take to…? How often? Often, sometimes, usually Once, twice, second, third etc. Estimate, close to, about the same as Just over/under, too many/few Not enough, enough Spend, spent, change Dear(er), costs more Costs less, cheaper Costs the same as How much?	Size, bigger, larger Length, width, height, depth Taller, tallest, high, higher, highest Wide, narrow, shallow, close Metre, metre stick Half full Balances Heavier, heaviest, lighter, lightest Scales	Over Beside Opposite Apart Between Edge, centre, corner Direction Journey Left, right Sideways Near Through Towards, away from Movement Whole turn, half turn	Pyramid, cone, cylinder Curved, hollow, solid Corner (point, pointed) Face Side Edge	Whole Equal parts Four equal parts One half Two halves A quarter Two quarters	Arrange, rearrange Change over Separate Continue, repeat Describe, explain Record, trace Complete Shade Same number(s) Different number(s) Missing number(s) Number facts Same way, different way Best way, another way In a different order Not all

Year 2 – new vocabulary and previous vocabulary							
Number and Place Value	**Multiplication and Division**	**Measure**	**Geometry (position and direction)**	**Geometry (properties of shape)**	**Fractions**	**Statistics**	**Problem solving**
Numbers to one hundred Hundreds Partition Recombine Hundred more/less Represents Exchange	Count in multiples of 3	Quarter past/to Fortnight Temperature (degrees) m/cm g/kg ml/l	Rotation Clockwise Anticlockwise Straight line Ninety degree turn Right angle	Smaller Symmetrical Line of symmetry Fold, match Mirror line, reflection Pattern Repeating pattern Vertices, vertex Pentagon Hexagon Octagon Circular, triangular Right angle	Three quarters One third A third Equivalence Equivalent	Count Tally, sort, vote Graph, block graph Pictogram Represent group Set List Table, label, title Most popular Most common Least popular Least common	Predict Describe the pattern Describe the rule Find, find all, find different Investigate

Story time books:

Year group	Name of book and author	Maths idea / concept
Year R	Mouse Count - Ellen Stoll Walsh	Addition Ordering numbers to 10 (forwards and backwards)
	The littlest yak – Lu Fraser and Kate Hindley	Bigger and smaller
	Frog goes on holiday – Carly Gledhill	Position and direction
	Ten minutes to bed little dragon – Rhiannon Fielding and Chris Chatterton	Time (minutes) Counting back from 10
	One night in the zoo – Judith Kerr	Numbers 0 - 10 Addition
	One Ted Falls Out of Bed - Julia Donaldson	Numbers 0 - 10 Counting forwards and backwards
	Inch by Inch - Leo Lionni	Measurement
	None the Number - Oliver Jeffers	Numbers 0 - 10
	The lion on the bus – Gareth P Jones and Jeff Harter	Pattern - repetition Addition / subtraction
	Handa's surprise – Eileen	Subtraction Counting back from 10

	Browne	
Year 1	Superworm – Julia Donaldson and Alex Scheffler	Open - investigation Measurement - length
	The bug collector – Alex G Griffiths	Open - investigation 4 operations
	The spots and the dots – Helen Baugh	Number bonds
	How many legs? – Kes Gray and Jim Field	Addition
	Diary of a Wombat – Jackie French	Measurement (time - days of the week)
	One Is a Snail, Ten Is a Crab - April Sayre, Jeff Sayre	Addition Number bonds - representation Partitioning numbers Multiplication
	What's the Time, Mr Wolf? - Debi Gliori	Measurement (time - o'clock)
	When a line bends…a shape begins - Rhonda Gowler Greene	2D shapes **ONLINE**

	Captain Invincible and the space shapes - Stuart J. Murphy	3D shapes **ONLINE**
	2 x 2 = Boo - Loreen Leedy https://www.youtube.com/watch?v=fyhaKXil3bE	Multiplication **ONLINE**
	Give Me Half! Stuart J. Murphy https://www.youtube.com/atch?v=GbWFfWwyB5s	Fractions **ONLINE**
	We're Going on a Bear Hunt - Michael Rosen https://www.youtube.com/watch?v=0gyI6ykDwds	Position and direction **ONLINE**
Year 2	Spinderella – Julia Donaldson and Sebastian Braun	Repeated addition Multiplication Division Counting (addition / ordering)
	Sir Cumference and the Off-the-Charts Dessert - Cindy Neuschwander	Data (tally, charts and graphs)

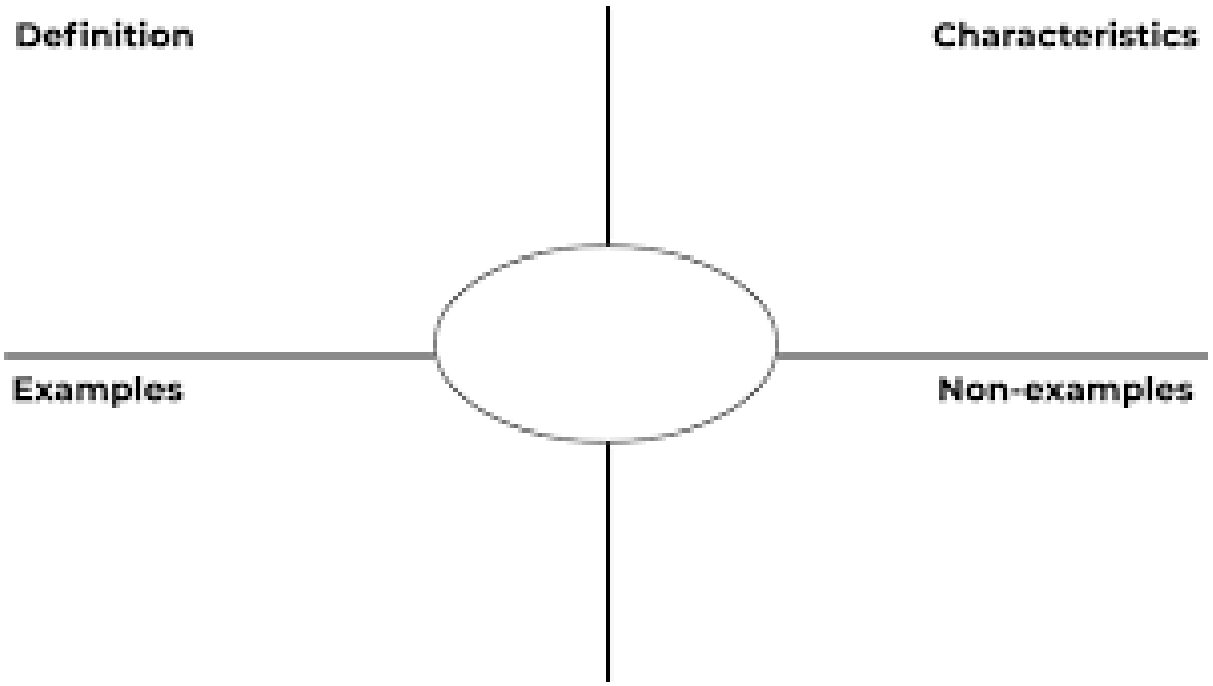
	365 Penguins - Jean-Luc Fromental	Addition Multiplication Division Measurement (time - months and days)
	Jim and the Beanstalk - Raymond Briggs	Measurement (time, cm, length)
	Fish – Brendan Kearney	Open - investigations (fits to many concepts) Ordering Addition / subtraction

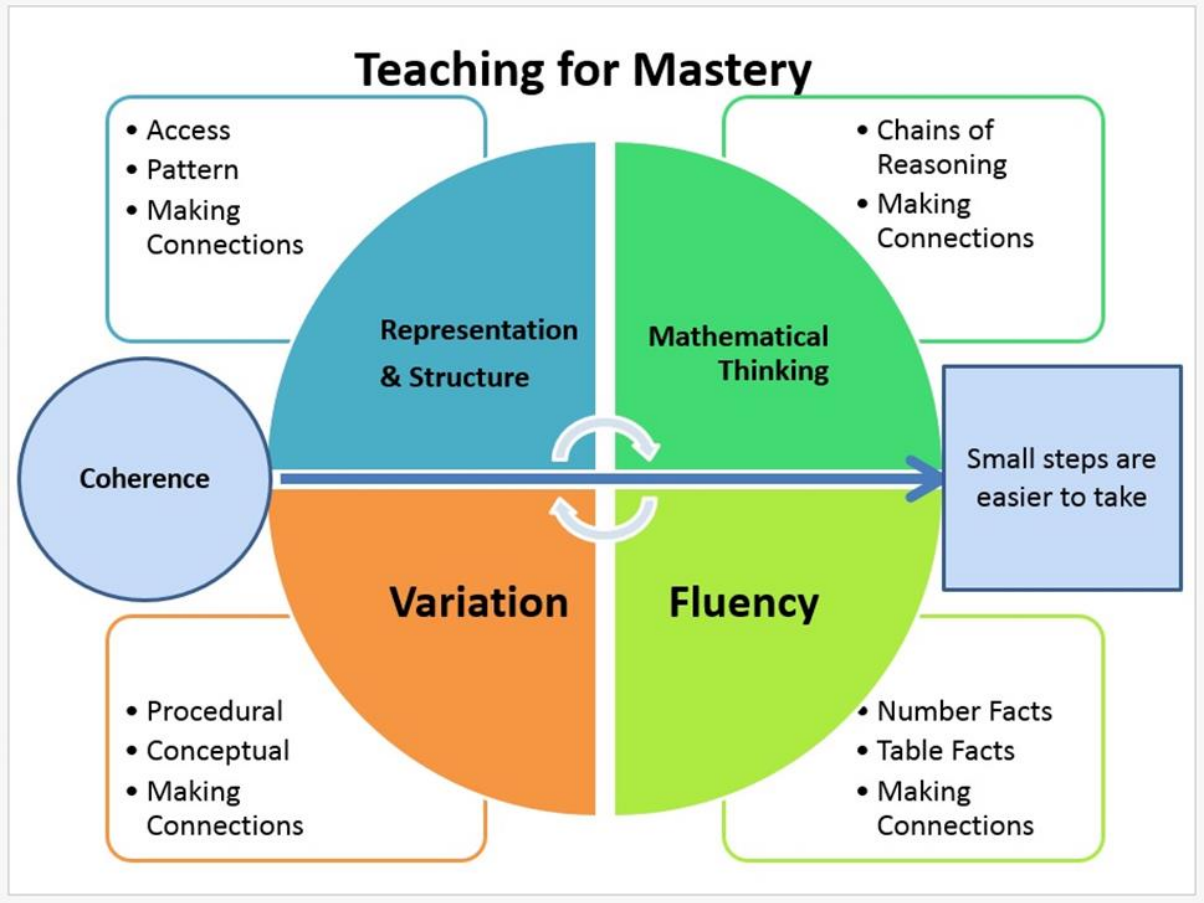
Adaptive teaching:

1. Pre-teach of key concept/method: planned week before
2. Use of high quality representations and resources to be used practically to explore.
3. Teaching of key skill/method
4. I do, you do, we do modelling
5. Interventions e.g. number box

Extra information:

Frayer model - useful planning tool





Representation & Structure

Quality images and models expose the structure of the Maths

Get children NOTICING

ALL children are supported by quality images and models.

When I'm making / drawing it, I can really understand it.

Bridge the gap between the concrete and the abstract.

Fluency

Efficiency – they use efficient methods and they don't lose track mid-method!

Accuracy – quick recall and understanding of key facts: times tables, number bonds etc.

Flexibility – the ability to move between methods and concepts easily

- Which way will be better in this context and why?

Mathematical Thinking

The importance of stepping back and thinking

Making connections

Variation

Influencing the way children think through:

what we keep the SAME

what we CHANGE

Conceptual Variation – varying the context in which the children are applying their skill

Procedural Variation – in teaching how we proceed through the lesson. Apply small steps on the journey and connect each step to the previous step by altering (varying) just one aspect. Another element of this is varying the methods that the children use.

Promoting reasoning opportunities

Most reasoning remains invisible. It stays inside people's heads. In order for students to improve their reasoning, it needs to be made visible and audible through oral or written explanations.

Malcolm Swann (2011)

Focus on the how and the why, not answer