

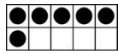
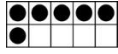
## Maths LTP

- Consolidation weeks to be planned according to End of Unit assessments and the children's needs.
- Reasoning skills threaded throughout yearly MTP overviews
- Assessment weeks to take place at three points in the year, planned out according to the school year.
- Calculation methods to be used for each year group, based on the policy.

**EYFS (Sweet Chestnut/Cherry Blossom)**

**EYFS to use WRM Shape, Space and Measure units on Monday and for planning continuous provision throughout the week. They will follow the NCETM Mastering Number scheme Tues-Fri.**

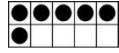
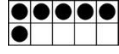
		1	2	3	4	5	6	7	8	9	10	11	12
Autumn	EYFS	<a href="#">Match, sort and compare</a>			<a href="#">Comparing measures and exploring patterns</a>			<a href="#">Circles and triangles</a> <a href="#">Shapes with Four sides</a>			Consolidation		
Spring		Mass and capacity			Length, height and time			Exploring 3D shape			Consolidation		
Summer		Shapes, manipulate and decompose			Visualise, build and map pattern			Make connections: patterns			Consolidation		

<b>EYFS</b>	Real-life objects	0-9 digit cards	Number line to 20	Numbered Counting stick	Tens frame 		Interlocking cubes -  Use one colour to represent one amount		Part-part-whole mat	Bar model with real life objects	Bead strings - 10	Numicon shapes	Double sided counters	Multilink – use one colour to model an amount
<b>Year 1</b>	Real-life objects	0-9 digit cards	Number line to 20	Counting stick	Tens frame 	Place value charts –  Tens and ones	Interlocking cubes -  Use one colour to represent one amount	Place value arrow cards – tens and ones	Part-part-whole mat	Bar model with real life objects/pictorial objects/representative objects eg. counters	Bead strings - 20	Numicon shapes	Double sided counters	Multilink – use one colour to model an amount

**Years 1/2 (Cherry Blossom and Sweet Chestnut)**

		1	2	3	4	5	6	7	8	9	10	11	12
Autumn	Year 1	Place Value (Within 10)					Addition and Subtraction (Within 10)					Shape	Consolidation*
	Year 2	Place Value			Addition and Subtraction					Shape			
Spring	Year 1	Place Value (within 20)		Addition and Subtraction (within 20)			Place Value (Within 50)		Length and Height		Mass and Volume		
	Year 2	Money	Multiplication and division					Length and Height		Mass, Capacity and Temperature			
Summer	Year 1	Multiplication and division		Fractions		Position & Direction	Place Value (within 100)		Money	Time		Consolidation*	
	Year 2	Statistics	Fractions			Position and direction		Consolidation*		Time			

**Year 1/2 Progression in Manipulatives –**

<b>Year 1</b>	Real-life objects	0-9 digit cards	0-9 cards	Number line to 20	Counting stick	Tens frame 	Place value charts – Tens and ones	Interlocking cubes - Use one colour to represent one amount	Place value arrow cards – tens and ones	Part-part-whole mat	Bar model with real life objects/pictorial objects/representative objects eg. counters	Bead strings - 20	Numicon shapes	Double sided counters	Multilink – use one colour to model an amount
<b>Year 2</b>	Real-life objects	0-9 digit cards	0-9 cards	Number line to 100	Counting stick	Tens frame 	Place value charts – Hundreds, tens and ones	Base 10	Place value arrow cards – tens and ones	Part-part-whole mat	Bar model with counters /Base 10 progressing to numbers	Bead strings - 100	Numicon shapes	Double sided counters	Multilink – use one colour to model an amount

**Years 3/4 (Silver Birch and Sycamore)**

		1	2	3	4	5	6	7	8	9	10	11	12	
Autumn	Year 3	Place Value			Addition and subtraction					Multiplication and Division				
	Year 4	Place Value			Addition and subtraction			Measure: Area	Multiplication and Division			Consolidation*		
Spring	Year 3	Multiplication and Division		Measure: Length and perimeter		Fractions			Measure: Mass and capacity					
	Year 4	Multiplication and Division		Measure: Length and perimeter	Fractions				Decimals					
Summer	Year 3	Fractions	Measure: Money	Measure: Time			Shape		Statistics		Consolidation*			
	Year 4	Decimals	Measure: Money	Measure: Time	Consolidation*	Shape		Statistics	Position and direction					

### Year 3/4 Progression in Manipulatives –

<b>Year 3</b>	Real-life objects	0-9 digit cards	0-9 cards	Number line to 100	Counting stick	Place value charts – Thousands , hundreds, tens and ones	Base 10	Place value counters	Place value arrow cards – H, T, O	Part-part-whole model	Bar model with numbers	Bead strings - 100	Numicon shapes	Cuisenaire rods	Double sided counters	Multilink – use one colour to model an amount
<b>Year 4</b>	Real-life objects	0-9 digit cards	0-9 cards	Number line including negative numbers	Counting stick	Place value charts – Ten thousands , thousands , hundreds, tens, ones and tenths	Base 10	Place value counters	Place value arrow cards – Th, H, T, O	Part-part-whole model.	Bar model with numbers	Bead strings - 100	Numicon shapes	Cuisenaire rods	Double sided counters	Multilink – use one colour to model an amount

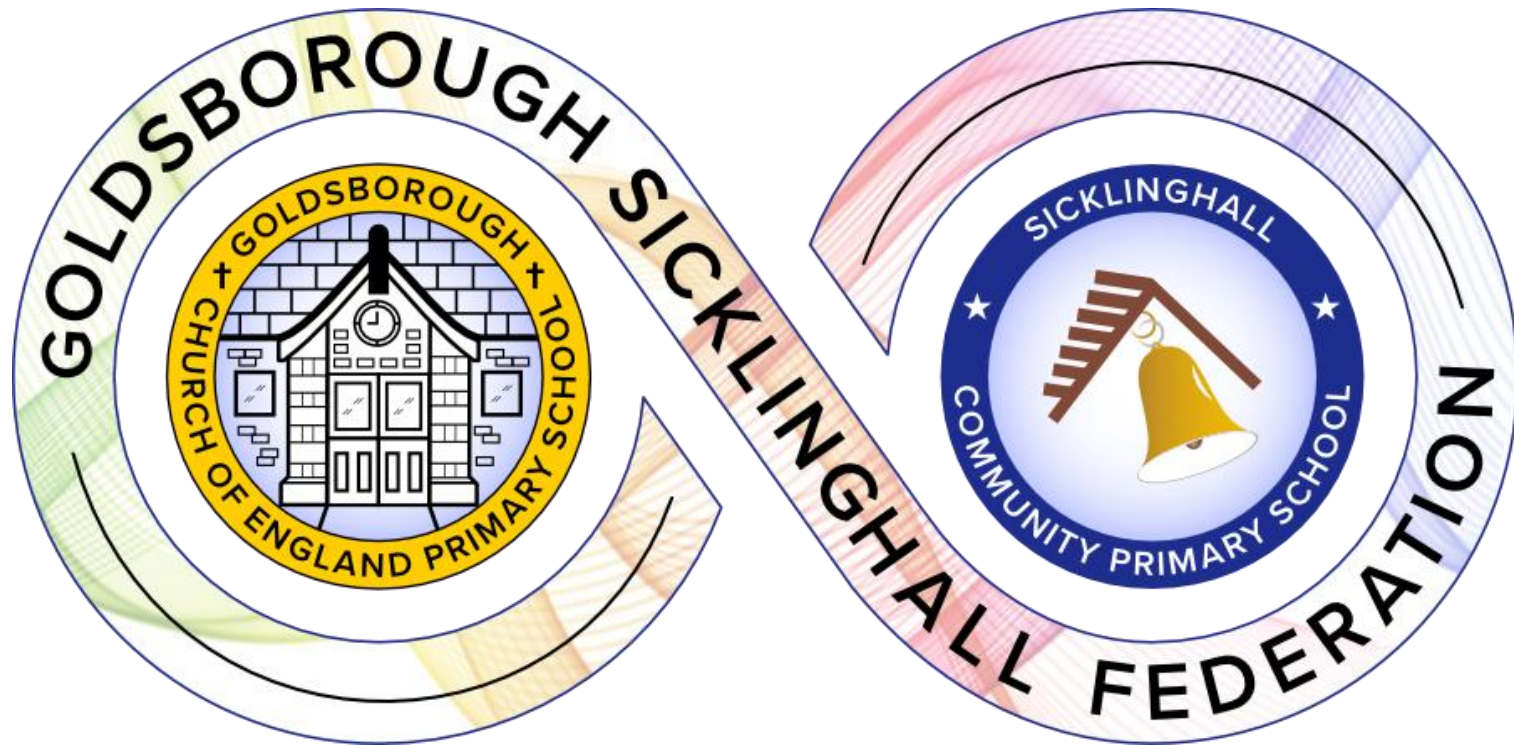
## Years 5/6 (Oak and Willow)

		1	2	3	4	5	6	7	8	9	10	11	12
Autumn	Year 5	Place Value			Addition & Subtraction		Multiplication and Division			Fraction A			
	Year 6	Place Value		Four Operations					Fractions A		Fractions B		Converting Units
Spring	Year 5	Multiplication and Division		Fractions B		Decimals and percentages			Perimeter and Area		Statistics		
	Year 6	Ratio		Algebra		Decimals		Fractions, decimals and percentages		Area, perimeter and volume		Statistics	
Summer	Year 5	Shape		Position and direction		Decimals			Negative numbers	Converting Units		Volume	
		Summer 1 - KIRF: I can recall square numbers up to $12^2$ and their square roots.					Summer 2 - KIRF: I can find factor pairs of a number						
	Year 6	Shape		Position and Direction	SATS preparation, based on the QLA		Revision: Calculation		Revision: Measures		Revision: Geometry		

## Year 5/6 Progression in Manipulatives –

<b>Year 5</b>	Real-life objects	0-9 digit cards	Number line including negative numbers	Counting stick	Place value charts- to a million and 3dp.	Base 10	Place value counters	Place value arrow cards.	Part-part-whole model	Bar model with numbers	Bead strings - 100	Numicon shapes	Cuisenaire rods	Double sided counters	Multilink – use one colour to model an amount
<b>Year 6</b>	Real-life objects	0-9 digit cards	Number line including negative numbers	Counting stick	Place value charts – to 10 million and 3dp.	Base 10	Place value counters	Place value arrow cards.	Part-part-whole model.	Bar model with numbers	Bead strings - 100	Numicon shapes	Cuisenaire rods	Double sided counters	Multilink – use one colour to model an amount





**Maths MTP**

**EYFS (Sweet Chestnut/Cherry Blossom)**

**EYFS to use the NCETM Mastering Number scheme Mon-Thurs, with White rose being used to plan classroom provision and Fridays.**

	<b>Autumn</b>	<b>Spring</b>	<b>Summer</b>
Number (Mastering Number resources – full coverage of ELG and DM)	<p>Pupils will build on previous experiences of number from their home and nursery environments, and further develop their subitising and counting skills. They will explore the composition of numbers within 5. They will begin to compare sets of objects and use the language of comparison.</p> <p>Pupils will:</p> <ul style="list-style-type: none"> <li>• Identify when a set can be subitised and when counting is needed</li> <li>• Subitise different arrangements, both unstructured and structured, including using the Hungarian number frame</li> <li>• Make different arrangements of numbers within 5 and talk about what they can see, to develop their conceptual subitising skills</li> <li>• Spot smaller numbers ‘hiding’ inside larger numbers</li> </ul>	<p>Pupils will continue to develop their subitising and counting skills and explore the composition of numbers within and beyond 5. They will begin to identify when two sets are equal or unequal and connect two equal groups to doubles. They will begin to connect quantities to numerals.</p> <p>Pupils will:</p> <ul style="list-style-type: none"> <li>• Continue to develop their subitising skills for numbers within and beyond 5, and increasingly connect quantities to numerals</li> <li>• Begin to identify missing parts for numbers within 5</li> <li>• Explore the structure of the numbers 6 and 7 as ‘5 and a bit’ and connect this to finger patterns and the Hungarian number frame</li> <li>• Focus on equal and unequal groups when comparing numbers</li> <li>• Understand that two equal groups can be called a ‘double’ and connect this to finger patterns</li> </ul>	<p>Pupils will consolidate their counting skills, counting to larger numbers and developing a wider range of counting strategies. They will secure knowledge of number facts through varied practice.</p> <p>Pupils will:</p> <ul style="list-style-type: none"> <li>• Continue to develop their counting skills, counting larger sets as well as counting actions and sounds</li> <li>• Explore a range of representations of numbers, including the 10-frame, and see how doubles can be arranged in a 10-frame</li> <li>• Compare quantities and numbers, including sets of objects which have different attributes</li> <li>• Continue to develop a sense of magnitude, e.g. knowing that 8 is quite a lot more than 2, but 4 is only a little bit more than 2</li> <li>• Begin to generalise about ‘one more than’ and ‘one less than’ numbers within 10</li> </ul>

	<ul style="list-style-type: none"> <li>• Connect quantities and numbers to finger patterns and explore different ways of representing numbers on their fingers</li> <li>• Hear and join in with the counting sequence, and connect this to the 'staircase' pattern of the counting numbers, seeing that each number is made of one more than the previous number</li> <li>• Develop counting skills and knowledge, including: that the last number in the count tells us 'how many' (cardinality); to be accurate in counting, each thing must be counted once and once only and in any order; the need for 1:1 correspondence; understanding that anything can be counted, including actions and sounds</li> <li>• Compare sets of objects by matching</li> <li>• begin to develop the language of 'whole' when talking about objects which have parts</li> </ul>	<ul style="list-style-type: none"> <li>• Sort odd and even numbers according to their 'shape'</li> <li>• Continue to develop their understanding of the counting sequence and link cardinality and ordinality through the 'staircase' pattern</li> <li>• Order numbers and play track games</li> <li>• Join in with verbal counts beyond 20, hearing the repeated pattern within the counting numbers</li> </ul>	<ul style="list-style-type: none"> <li>• Continue to identify when sets can be subitised and when counting is necessary</li> <li>• Develop conceptual subitising skills including when using a rekenrek</li> </ul>
<p>Measure, shape and spatial thinking: (WRM resources)</p>	<p><b><u>Match, sort and compare</u></b></p> <p><b><u>Reasoning Thread:</u> <i>What comes next</i></b></p> <ul style="list-style-type: none"> <li>• Match objects</li> <li>• Match pictures and objects</li> <li>• Identify a set</li> <li>• Sort objects to a type</li> </ul>	<p><b><u>Mass and capacity</u></b></p> <p><b><u>Reasoning Thread:</u> <i>True or False</i></b></p> <ul style="list-style-type: none"> <li>• Compare mass</li> <li>• Find a balance</li> <li>• Explore capacity</li> <li>• Compare capacity</li> </ul>	<p><b><u>Manipulate, compose decompose</u></b></p> <p><b><u>Reasoning Thread:</u> <i>Odd one out</i></b></p> <ul style="list-style-type: none"> <li>• Select shapes for a purpose</li> <li>• Rotate shapes</li> <li>• Manipulate shapes</li> <li>• Explain shape arrangements</li> </ul>

- Explore sorting techniques
- Create sorting rules
- Compare amounts

**Talk about measure and patterns**

**Reasoning Thread: *Odd one out***

- Comparing size
- Comparing Mass
- Comparing capacity
- Comparing simple patterns
- Copy and continue simple patterns
- Create simple patterns

**NRICH SUGGESTION:** [The Voting Station \(maths.org\)](http://maths.org)

**Circles and triangles**

**Reasoning Thread: *Missing Answers***

- Identify and name circles and triangles
- Compare circles and triangles
- Shapes in the environment
- Describe position

**NRICH SUGGESTION:** [Making a Picture \(maths.org\)](http://maths.org)

**Shapes with four sides**

- Identify and name shapes with 4 sides
- Combine shapes with 4 sides
- Shapes in the environment
- My day and night

**NRICH PROBLEM:** [Golden Beans \(maths.org\)](http://maths.org)

**Length, height and time**

**Reasoning Thread: *Missing Numbers***

- Explore length
- Compare length
- Explore height
- Compare height
- Talk about time
- Order and sequence time

**NRICH PROBLEM:** [Shopping - Pirate Poundland \(maths.org\)](http://maths.org)

[Balances \(maths.org\)](http://maths.org)

**Explore 3D shapes**

**Reasoning Thread: *Odd one out***

- Recognise and name 3D shapes
- Find 2D shapes within 3D shapes
- Use 3D shapes for tasks
- 3D shapes in the environment
- Identify more complex patterns
- Copy and continue patterns
- Patterns in the environment

**NRICH PROBLEM:** [Owl's Packing List \(maths.org\)](http://maths.org)

[Pattern Making \(maths.org\)](http://maths.org)

- Compose shapes
- Decompose shapes
- Copy 2D shape pictures
- Find 2D shapes within 3D shapes

**NRICH PROBLEM:** [Exploring 2D Shapes \(maths.org\)](http://maths.org)

**NRICH PROBLEM:** [Building Towers \(maths.org\)](http://maths.org)

**Visualise, build and map**

**Reasoning Thread: *What comes next?***

- Identify units of repeating patterns
- Create own pattern rules
- Explore own patterns rules
- Replicate and build scenes and constructions
- Visualise from different positions
- Describe positions
- Give instructions to build
- Explore mapping
- Represent maps with models
- Create own maps from familiar places
- Create own maps and plans from story situations

**NRICH PROBLEM:** [Paths \(maths.org\)](http://maths.org)

**NRICH PROBLEM:** [Obstacle Course \(maths.org\)](http://maths.org)

	<p><b>NRICH SUGGESTION:</b> <a href="#">Hidden Jewels (maths.org)</a></p> <p><a href="#">Calendar Muddle (maths.org)</a></p>		
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Years 1/2 (Cherry Blossom/Sweet Chestnut) AUTUMN

	Place Value		Addition and Subtraction  (Use inverse/ estimations as part of the success criteria to check calculation)		Shape	
Reasoning thread	What comes next?  True or False		True or False  Spot the mistakes  Missing numbers and symbols		Prove it  Always, sometimes, never	
	Year 1  (Within 10)	Year 2	Year 1  (Within 10)	Year 2  To incorporate column +/- without exchanging.	Year 1	Year 2
	<ul style="list-style-type: none"> <li>Sort objects</li> <li>Count objects</li> <li>Represent objects</li> <li>Recognise numbers as words</li> <li>Count on from any number RTP</li> <li>1 more</li> <li>Count backwards within 10 RTP</li> <li>1 less</li> <li>Compare groups by matching</li> <li>Fewer, more, same RTP</li> <li>Less than, Greater than, equal to RTP</li> <li>Compare numbers RTP</li> <li>Order objects and numbers RTP</li> <li>The number line RTP</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="http://makingsticks.maths.org">Making Sticks (maths.org)</a></p>	<ul style="list-style-type: none"> <li>Numbers to 20</li> <li>Count objects to 100 by making 10s</li> <li>Recognise tens and ones RTP</li> <li>Use a place value chart RTP</li> <li>Partition numbers to 100 RTP</li> <li>Write numbers to 100 in words</li> <li>Flexibly partition numbers to 100 RTP</li> <li>Write numbers to 100 in expanded form. RTP</li> <li>10s on the number lines to 100 RTP</li> <li>10s and 1s on the number line to 100 RTP</li> <li>Estimate numbers on a number line RTP</li> <li>Compare objects</li> <li>Compare numbers</li> <li>Order objects and numbers</li> <li>Count in 2s, 5s and 10s</li> </ul>	<ul style="list-style-type: none"> <li>What are parts and wholes</li> <li>Part-whole model</li> <li>Writing number sentences</li> <li>Fact families – addition facts RTP</li> <li>Number bonds within 10 RTP</li> <li>Systematic number bonds within 10 RTP</li> <li>Number bonds to 10 RTP</li> <li>Addition – add together RTP</li> <li>Addition – Add more RTP</li> <li>Addition problems RTP</li> <li>Finding a part RTP</li> <li>Subtraction – find a part RTP</li> <li>Fact families – the eight facts RTP</li> <li>Subtraction – take away/cross out RTP</li> <li>Take away (How many left?) RTP</li> <li>Subtraction on a number line RTP</li> <li>Add or subtract 1 or 2</li> </ul>	<ul style="list-style-type: none"> <li>Bonds to 10 RTP</li> <li>Fact families – addition and subtraction bonds within 20.</li> <li>Related facts</li> <li>Bonds to 100 (10s)</li> <li>Add and subtract 1s RTP</li> <li>Add by making 10 RTP</li> <li>Add three 1d numbers</li> <li>Add to the next 10 RTP</li> <li>Add across a 10 RTP</li> <li>Subtract across 10 RTP</li> <li>Subtract from 10 RTP</li> <li>Subtract a 1d number from a 2d number RTP</li> <li>10 more/less RTP</li> <li>Add/subtract 10s RTP</li> </ul>	<ul style="list-style-type: none"> <li>Recognise and name 3D shapes RTP</li> <li>Sort 3D shapes RTP</li> <li>Recognise and name 2D shapes RTP</li> <li>Sort 2D shapes RTP</li> <li>Pattern with 2D and 3D shapes RTP</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="http://jigshapes.maths.org">Jig Shapes (maths.org)</a></p>	<ul style="list-style-type: none"> <li>Recognise 2D and 3D shapes RTP</li> <li>Count sides on 2D shapes RTP</li> <li>Count vertices on 3D shapes RTP</li> <li>Draw 2D shapes</li> <li>Lines of symmetry</li> <li>Use lines of symmetry to complete shapes</li> <li>Sort 2D shapes RTP</li> <li>Count faces on 3D shapes RTP</li> <li>Count edges on 3D shapes RTP</li> <li>Count vertices on 3D shapes RTP</li> <li>Sort 3D shapes RTP</li> <li>Make patterns with 2D and 3D shapes</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="http://skeletonshapes.maths.org">Skeleton Shapes (maths.org)</a></p>

		<ul style="list-style-type: none"> <li>Count in 3s</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">100 Square Jigsaw (maths.org)</a></p>	<p><b>NRICH PROBLEM:</b> <a href="#">The Tall Tower (maths.org)</a></p>	<ul style="list-style-type: none"> <li>Add two 2d numbers (not across a 10) <b>RTP</b></li> <li>Add two 2d numbers (across a 10) <b>RTP</b></li> <li>Subtract two 2d numbers (not across a 10) <b>RTP</b></li> <li>Subtract two 2d numbers (across a 10) <b>RTP</b></li> <li>Mixed addition and subtraction <b>RTP</b></li> <li>Compare number sentences</li> <li>Missing number problems</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Birthday Cakes (maths.org)</a></p>		
<b>NCETM Spine Links</b>	NCETM: Number, addition and subtraction: 1.1, 1.3, 1.4, 1.9, 1.10	NCETM: Number, addition and subtraction: 1.9 Multiplication and division: 2.1	NCETM: Number, addition and subtraction: 1.2, 1.5-1.7, 1.10, 1.11 Multiplication and division: 2.1	NCETM: Number, addition and subtraction: 1.2, 1.8, 1.7, 1.9, 1.11, 1.13, 1.14, 1.15, 1.16 Multiplication and division: 2.1		

Years 1/2 (Cherry Blossom/Sweet chestnut) SPRING

	Place value (Within 20)	Money	Addition and subtraction (Within 20)	Multiplication and division	Place Value (Within 50)	Length and height		Mass and Volume	Mass, capacity and temperature
Reasoning thread	What comes next  True or false	Other possibilities	Missing numbers and symbols  True or false	True or False  Spot the mistake	What comes next  True or false	Prove it		True or false	Prove it
	Year 1	Year 2	Year 1	Year 2	Year 1	Year 1	Year 2	Year 1	Year 2
	<ul style="list-style-type: none"> <li>Count within 20 RTP</li> <li>Understanding 10</li> <li>Understanding 11,12,13</li> <li>Understand 14,15,16</li> <li>Understand 17,18,19</li> <li>Understand 20</li> <li>1 more and 1 less</li> <li>The number line to 20. RTP</li> <li>Use a number line to 20 RTP</li> <li>Estimate on a number line to 20</li> <li>Compare numbers to 20 RTP</li> <li>Order numbers to 20. RTP</li> </ul> <p><b>NRICH PROBLEM:</b></p>	<ul style="list-style-type: none"> <li>Count money - pence.</li> <li>Count money – pounds (notes and coins)</li> <li>Count money – pounds and pence</li> <li>Choose notes and coins</li> <li>Make the same amount</li> <li>Compare amounts of money</li> <li>Calculate with money.</li> <li>Make a pound RTP</li> <li>Find change RTP</li> <li>Two-step problems</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="http://maths.org">The Puzzling Sweet Shop (maths.org)</a></p> <p><a href="http://maths.org">Fruity Pairs (maths.org)</a></p>	<ul style="list-style-type: none"> <li>Add by counting on within 20 RTP</li> <li>Add ones using number bonds RTP</li> <li>Find and make number bonds to 20.</li> <li>Doubles</li> <li>Near doubles</li> <li>Subtract ones using number bonds RTP</li> <li>Subtraction – counting back RTP</li> <li>Subtraction – finding the difference. RTP</li> <li>Related number facts</li> <li>Missing number problems. RTP</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="http://maths.org">The Tall Tower (maths.org)</a></p>	<ul style="list-style-type: none"> <li>Recognise equal groups</li> <li>Make equal groups</li> <li>Add equal groups</li> <li>Introduce the multiplication symbol</li> <li>Multiplication sentences</li> <li>Use arrays</li> <li>Make equal groups – grouping</li> <li>Make equal groups – sharing.</li> <li>The two times table.</li> <li>Divide by 2</li> <li>Doubling and halving</li> <li>Odd and even numbers</li> <li>The 10 times table</li> <li>Divide by 10</li> <li>The 5 times table</li> <li>Divide by 5</li> <li>The 5 and 10 times table</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="http://maths.org">Odd Times</a></p>	<ul style="list-style-type: none"> <li>Count from 20 to 50 RTP</li> <li>20, 30, 40 and 50.</li> <li>Count by making groups of tens. RTP</li> <li>Groups of tens and ones</li> <li>Partition into tens and ones</li> <li>The number line to 50 RTP</li> <li>Estimate on a number line to 50</li> <li>1 more, 1 less.</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="http://maths.org">All Change (maths.org)</a></p>	<ul style="list-style-type: none"> <li>Compare lengths and heights.</li> <li>Measure length using objects</li> <li>Measure length in centimetres</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="http://maths.org">Can You Do it Too? (maths.org)</a></p>	<ul style="list-style-type: none"> <li>Measure in cm</li> <li>Measure in m</li> <li>Compare lengths and heights</li> <li>Order lengths and heights</li> <li>Four operations with lengths and heights RTP</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="http://maths.org">Little Man (maths.org)</a></p>	<ul style="list-style-type: none"> <li>Heavier and lighter</li> <li>Measure mass</li> <li>Compare mass</li> <li>Full and empty</li> <li>Compare volume</li> <li>Measure capacity</li> <li>Compare capacity.</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="http://maths.org">Bottles (2) (maths.org)</a></p>	<ul style="list-style-type: none"> <li>Compare mass</li> <li>Measure in g</li> <li>Measure in kg</li> <li>Four operation with mass</li> <li>Compare volume and capacity</li> <li>Measure in ml</li> <li>Measure in l</li> <li>Four operations with volume and capacity</li> <li>Temperature</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="http://maths.org">Order, Order! (maths.org)</a></p>



	<a href="#">What's in a Name? (maths.org)</a>			<a href="#">Even (maths.org)</a>					
<b>NCETM Spine Links</b>	NCETM: Number, addition and subtraction: 1.1, 1.3, 1.4, 1.10		NCETM: Number, addition and subtraction: 1.2, 1.5-1.7, 1.10, 1.11 Multiplication and division: 2.1	NCETM: Multiplication and division: 2.2-2.6.	NCETM: Number, addition and subtraction: 1.9		NCETM: Number, addition and subtraction: 1.1	NCETM: Number, addition and subtraction: 1.1	

Years 1/2 (Cherry Blossom/Sweet chestnut) SUMMER

	Multiplication and division	Statistics	Fractions		Position and Direction		Place Value (Within 100)	Money	Time	
Reasoning thread	Missing numbers  True or false	True or false	Odd one out		Always, sometimes, never  Convince me		What comes next  Possible answers	Possible answers  True or false	Spot the mistake	
	Year 1	Year 2	Year 1	Year 2	Year 1	Year 2	Year 1	Year 1	Year 1	Year 2
<b>NCETM Spine Links</b>	<ul style="list-style-type: none"> <li>Count in 2s</li> <li>Count in 10s</li> <li>Count in 5s</li> <li>Recognise equal groups</li> <li>Make arrays</li> <li>Make doubles</li> <li>Make equal groups – grouping</li> <li>Make equal groups – sharing</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Lots of Biscuits! (maths.org)</a></p>	<ul style="list-style-type: none"> <li>Make tally charts</li> <li>Tables</li> <li>Block diagrams</li> <li>Draw pictograms (1-1)</li> <li>Interpret pictograms (1-1)</li> <li>Draw pictograms (2,5 and 10)</li> <li>Interpret pictograms (2, 5 and 10)</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Ladybird Count (maths.org)</a></p> <p><a href="#">What Shape and Colour? (maths.org)</a></p>	<ul style="list-style-type: none"> <li>Recognise a half of an object or a shape</li> <li>Find half of an object or a shape</li> <li>Recognise a half of a quantity</li> <li>Recognise a quarter of an object or a shape</li> <li>Find a quarter of an object of a shape</li> <li>Recognise a quarter of a quantity.</li> <li>Find a quarter of a quantity.</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Halving (maths.org)</a></p>	<ul style="list-style-type: none"> <li>Introduction to parts and wholes.</li> <li>Equal and unequal parts.</li> <li>Recognise a half</li> <li>Find a half</li> <li>Recognise a quarter</li> <li>Find a quarter</li> <li>Recognise a third</li> <li>Find a third.</li> <li>Find the whole</li> <li>Unit fractions</li> <li>Non-unit fractions</li> <li>Recognise the equivalence of a half and two quarters</li> <li>Recognise three-quarters</li> <li>Find three-quarters</li> <li>Count in fractions up to a whole.</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Tangram Tangle (maths.org)</a></p>	<ul style="list-style-type: none"> <li>Describe turns</li> <li>Describe position – left and right</li> <li>Describe position – forwards and backwards</li> <li>Describe position – above and below</li> <li>Ordinal numbers</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">En-counters (maths.org)</a></p>	<ul style="list-style-type: none"> <li>Language of position</li> <li>Describe movement</li> <li>Describe turns</li> <li>Describe movement and turns</li> <li>Shape patterns with turns.</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Snap (maths.org)</a></p>	<ul style="list-style-type: none"> <li>Count from 50 to 100</li> <li><b>RTP</b></li> <li>Tens to 100</li> <li>Partition into tens and ones</li> <li>The number line to 100</li> <li>1 more, 1 less</li> <li>Compare numbers with the same number of tens</li> <li>Compare any two numbers</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">100 Square Jigsaw (maths.org)</a></p>	<ul style="list-style-type: none"> <li>Unitising coins</li> <li>Recognise notes</li> <li>Count in coins</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Five Coins (maths.org)</a></p>	<ul style="list-style-type: none"> <li>Before and after</li> <li>Days of the week</li> <li>Months of the year</li> <li>Hours, minutes and seconds</li> <li>Tell the time to the hour</li> <li>Tell the time to the half hour</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Snap (maths.org)</a></p>	<ul style="list-style-type: none"> <li>O'clock and half past</li> <li>Quarter past and quarter to</li> <li>Tell the time past the hour</li> <li>Tell the time to the hour</li> <li>Tell the time to 5 minutes</li> <li>Minutes in an hour</li> <li>Hours in a day.</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Matching Time (maths.org)</a></p>

				<b>NRICH PROBLEM:</b> No Nrich suggested, to base don children's needs.						
				NCETM: Fractions 3.0						NCETM: Number, addition and subtraction: 1.12

Years 3/4 (Silver Birch and Sycamore) AUTUMN

	Place Value		Addition and Subtraction (Use inverse/ estimations as part of the success criteria to check calculation)		Area	Multiplication and Division (Use inverse/ estimations as part of the success criteria to check calculation)	
Reasoning thread	<p>Missing numbers</p> <p>Possible answers</p> <p>What comes next?</p>		<p>Missing numbers and symbols</p> <p>Other possibilities</p>		<p>Convince me</p>	<p>Missing numbers and symbols</p> <p>Other possibilities</p>	
	Year 3	Year 4	Year 3	Year 4	Year 4	Year 3	Year 4
						ALL RTP	
	<ul style="list-style-type: none"> <li>Representing numbers to 100 RTP</li> <li>Partitioning numbers to 100</li> <li>Number lines to 100</li> <li>Representing numbers to 1000 RTP</li> <li>Partitioning numbers to 1000 RTP</li> <li>Flexible partitioning to 1000 RTP</li> <li>Hundreds, tens and ones – composition RTP</li> <li>Find 1, 10 or 100 more/less RTP</li> <li>Estimate on a number line to 1000 RTP</li> <li>Compare numbers to 1000 RTP</li> <li>Order numbers to 1000 RTP</li> <li>Count in 50s RTP</li> </ul> <p><b>NRICH PROBLEM: <a href="#">Coded Hundred Square (maths.org)</a></b></p>	<ul style="list-style-type: none"> <li>Represent numbers to 1000 RTP</li> <li>Partition numbers to 1000</li> <li>Number lines to 1000</li> <li>Thousands</li> <li>Represent numbers to 10,000 RTP</li> <li>Partition numbers to 10,000 RTP</li> <li>Flexible partitioning to 10,000 RTP</li> <li>Find 1, 10, 100 or 1000 more/less RTP</li> <li>Number lines to 10,000 RTP</li> <li>Estimate on a number line to 10,000 RTP</li> <li>Compare numbers to 10,000</li> <li>Order numbers to 10,000</li> <li>Roman Numerals</li> <li>Rounding to the nearest 10 RTP</li> </ul>	<ul style="list-style-type: none"> <li>Apply number bonds within 10</li> <li>Add/subtract 1s</li> <li>Add/subtract 10s</li> <li>Add/subtract 100s</li> <li>Spot the pattern</li> <li>Add 1s across a 10s boundary RTP</li> <li>Add 10s across a 100 boundary RTP</li> <li>Subtract 1s across a 10 boundary RTP</li> <li>Subtract 10s across a 100 boundary RTP</li> <li>Add two numbers (no exchange) RTP</li> <li>Subtract 2 numbers (no exchange) RTP</li> <li>Add two numbers (across a 10) RTP</li> <li>Add two numbers (across a 100) RTP</li> <li>Subtract two numbers (across a 10) RTP</li> </ul>	<ul style="list-style-type: none"> <li>Add and subtract 1s, 10s, 100s and 1000s.</li> <li>Add up to 4d numbers – no exchange.</li> <li>Add 2d numbers – one exchange.</li> <li>Add two 4d numbers – more than one exchange</li> <li>Subtract two 4d numbers – no exchange</li> <li>Subtract two 4d numbers – one exchange</li> <li>Subtract two 4d numbers – more than one exchange</li> <li>Efficient subtraction</li> <li>Estimate answers</li> <li>Checking strategies</li> </ul>	<ul style="list-style-type: none"> <li>What is area?</li> <li>Counting squares</li> <li>Making shapes of given areas</li> <li>Comparing areas</li> </ul> <p><b>NRICH PROBLEM: <a href="#">Torn Shapes (maths.org)</a></b></p>	<ul style="list-style-type: none"> <li>Multiplication as equal groups</li> <li>Arrays</li> <li>Multiples of 2</li> <li>Multiples of 5 and 10 RTP</li> <li>Sharing and grouping</li> <li>Multiply by 3</li> <li>Divide by 3</li> <li>3 times table facts</li> <li>Multiply by 4</li> <li>Divide by 4</li> <li>4 times table facts</li> <li>Multiply by 8</li> <li>Divide by 8</li> <li>8 times table facts</li> <li>The 2, 4 and 8 times tables – patterns.</li> </ul> <p><b>NRICH PROBLEM: <a href="#">A Square of Numbers (maths.org)</a></b></p>	<ul style="list-style-type: none"> <li>Multiples of 3</li> <li>Multiply and divide by 6</li> <li>6 times table and division facts</li> <li>Multiply and divide by 9</li> <li>9 times table and division facts</li> <li>The 3, 6 and 9 times tables</li> <li>Multiply and divide by 7</li> <li>7 times table and division facts</li> <li>11 times-table and division facts</li> <li>12 times-table and division facts</li> <li>Multiply by 1 and 0</li> <li>Divide a number by 1 and itself</li> <li>Multiply three numbers.</li> </ul> <p><b>NRICH PROBLEM: <a href="#">Shape Times Shape (maths.org)</a></b></p>

		<ul style="list-style-type: none"> <li>• Rounding to the nearest 100 <b>RTP</b></li> <li>• Rounding to the nearest 1000 <b>RTP</b></li> <li>• Rounding to the nearest 10,000 <b>RTP</b></li> <li>• Rounding to the nearest 10, 100 and 1000.</li> <li>• <b>NRICH PROBLEM:</b> <a href="http://maths.org">What Distance? (maths.org)</a></li> </ul>	<ul style="list-style-type: none"> <li>• Subtract two numbers (across a 100) <b>RTP</b></li> <li>• Add 2 and 3 digit numbers <b>RTP</b></li> <li>• Subtract a 2d number from a 3d number. <b>RTP</b></li> <li>• Complements to 100 <b>RTP</b></li> <li>• Estimate answers</li> <li>• Inverse operations <b>RTP</b></li> <li>• Make decisions <b>RTP</b></li> <li>• <b>NRICH PROBLEM:</b> <a href="http://maths.org">Super Shapes (maths.org)</a></li> </ul>	<b>NRICH PROBLEM:</b> <a href="http://maths.org">Fifteen Cards (maths.org)</a>			
<b>NCETM Spine Links</b>	NCETM: Number, addition and subtraction: 1.17, 1.18	NCETM: Number, addition and subtraction: 1.17, 1.22, 1.27	NCETM: Number, addition and subtraction: 1.18-1.21	NCETM: Number, addition and subtraction: 1.20, 1.21, 1.22	NCETM: Multiplication and division: 2.16	NCETM: Multiplication and division: 2.6-2.8	NCETM: Multiplication and division: 2.6, 2.8, 2.9, 2.10, 2.11, 2.12, 2.13, 2.14, 2.15

Years 3/4 (Silver Birch and Sycamore) SPRING

	Multiplication and Division		Length and Perimeter		Fractions		Mass and Capacity	Decimals
Reasoning thread	Missing numbers and symbols  Prove it  Odd one out		Convince me  Spot the mistake		Prove it  Odd one out  True or False		Missing numbers and symbols  Prove it  True or False	
	Year 3	Year 4	Year 3	Year 4	Year 3	Year 4	Year 3	Year 4
	<ul style="list-style-type: none"> <li>• Multiples of 10</li> <li>• Related calculations</li> <li>• Reasoning about multiplication</li> <li>• Multiply a 2d number by a 1d number – no exchange</li> <li>• Multiply a 2d number by a 1d number – with exchange</li> <li>• Link multiplication and division</li> <li>• Divide a 2d number by a 1d number – no exchange</li> <li>• Divide a 2d number by a 1d number – flexible partitioning</li> <li>• Divide a 2d number by a 1d number – with remainders</li> <li>• Scaling</li> <li>• How many ways?</li> </ul>	<ul style="list-style-type: none"> <li>• Factor pairs</li> <li>• Use factor pairs</li> <li>• Multiply by 10 RTP</li> <li>• Multiply by 100 RTP</li> <li>• Divide by 10 RTP</li> <li>• Divide by 100 RTP</li> <li>• Related facts – multiplication and division</li> <li>• Informal written methods for multiplication RTP</li> <li>• Multiply a 2d number by a 1d number RTP</li> <li>• Multiply a 3d number by a 1d number RTP</li> <li>• Divide a 2d number by a 1d number</li> <li>• Divide a 3d number by a 1d number</li> <li>• Correspondence problems</li> <li>• Efficient multiplication</li> </ul>	<ul style="list-style-type: none"> <li>• Measure in m and cm RTP</li> <li>• Measure in mm RTP</li> <li>• Measure in cm and mm RTP</li> <li>• M, cm and mm</li> <li>• Equivalent lengths (m and cm) RTP</li> <li>• Equivalent (cm and mm) RTP</li> <li>• Compare lengths</li> <li>• Add lengths</li> <li>• Subtract lengths</li> <li>• What is a perimeter?</li> <li>• Measure perimeter</li> <li>• Calculate perimeter</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Through the Window (maths.org)</a></p>	<ul style="list-style-type: none"> <li>• Measure in km and m</li> <li>• Equivalent lengths (km and m)</li> <li>• Perimeter on a grid</li> <li>• Perimeter on a rectangle</li> <li>• Perimeter of rectilinear shapes</li> <li>• Find missing lengths in rectilinear shapes</li> <li>• Calculate perimeter of rectilinear shapes</li> <li>• Perimeter of regular polygons RTP</li> <li>• Perimeter of polygons RTP</li> </ul> <p><b>NRICH PROBLEM</b> <a href="#">Area and Perimeter (maths.org)</a></p>	<ul style="list-style-type: none"> <li>• Understand the denominators of unit fractions RTP</li> <li>• Compare and order unit fractions</li> <li>• Understand the numerators of non-unit fractions RTP</li> <li>• Understand the whole RTP</li> <li>• Fractions and scales</li> <li>• Fractions on a number line</li> <li>• Count in fractions on a number line.</li> <li>• Equivalent fractions on a number line</li> <li>• Equivalent fractions as bar models.</li> </ul> <p><b>NRICH PROBLEM</b> <a href="#">Matching Fractions (maths.org)</a></p>	<ul style="list-style-type: none"> <li>• Understand the whole</li> <li>• Count beyond 1</li> <li>• Partition a mixed number</li> <li>• Number lies with mixed fractions RTP</li> <li>• Compare and order mixed fractions RTP</li> <li>• Understand improper fractions</li> <li>• Convert mixed numbers to improper fractions RTP</li> <li>• Convert improper fractions to mixed number fractions. RTP</li> <li>• Equivalent fractions on a number line</li> <li>• Equivalent fraction families</li> <li>• Add two or more fractions</li> </ul>	<ul style="list-style-type: none"> <li>• Use scales</li> <li>• Measure mass in g</li> <li>• Measure mass in kg and g</li> <li>• Equivalent masses (kg and g)</li> <li>• Compare mass</li> <li>• Add and subtract mass</li> <li>• Measure capacity and volume in ml</li> <li>• Measure capacity and volume in l and ml.</li> <li>• Equivalent capacities and volumes (l and ml)</li> <li>• Compare capacity and volume</li> <li>• Add and subtract capacity and volume</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Oh! Harry! (maths.org)</a></p>	<ul style="list-style-type: none"> <li>• Tenths as fractions</li> <li>• Tenths as decimals</li> <li>• Tenths on a place value chart</li> <li>• Tenths on a number line</li> <li>• Divide a 1d number by 10</li> <li>• Divide a 2d number by 10</li> <li>• Hundredths as fractions</li> <li>• Hundredths as decimals</li> <li>• Hundredths on a place value chart</li> <li>• Divide a 1 or a 2d number by 100</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Round the Dice Decimals 1 (maths.org)</a></p>

	<p><b>NRICH PROBLEM:</b>  <a href="#">The Pied Piper of Hamblin</a></p>	<p><b>NRICH PROBLEM:</b>  <a href="#">Zios and Zepts (maths.org)</a></p>				<ul style="list-style-type: none"> <li>• Add fractions and mixed numbers <b>RTP</b></li> <li>• Subtract two fractions</li> <li>• Subtract from whole amounts <b>RTP</b></li> <li>• Subtract from mixed numbers <b>RTP</b></li> </ul> <p><b>NRICH PROBLEM</b>  <a href="#">Fractions in a Box (maths.org)</a></p>		
<p><b>NCETM Spine Links</b></p>	<p><b>NCETM:</b>  Multiplication and division: 2.6, 2.8, 2.13, 2.14, 2.15, 2.17, 2.19</p>	<p><b>NCETM:</b>  Multiplication and division: 2.6, 2.8, 2.9, 2.10, 2.11, 2.12, 2.13, 2.14, 2.15</p>	<p><b>NCETM:</b>  Multiplication and division: 2.16</p>	<p><b>NCETM:</b>  Multiplication and division: 2.16</p>	<p><b>NCETM:</b>  Fractions: 3.1, 3.2, 3.6, 3.3, 3.4, 3.7</p>	<p><b>NCETM:</b>  Fractions: 3.0, 3.4, 3.5, 3.7</p>		<p><b>NCETM:</b>  Number, addition and subtraction: 1.23-1.24</p>

Years 3/4 (Silver Birch and Sycamore) SUMMER

	Fractions	Decimals	Money		Time		Shape		Statistics		Position and Direction
Reasoning thread	Prove it  Odd one out	Other possibilities  Missing numbers and symbols	Missing numbers and symbols  Spot the mistake		True or False		Always, sometimes and never  True or False		Convince me		Spot the mistake
	Year 3	Year 4	Year 3	Year 4	Year 3	Year 4	Year 3	Year 4	Year 3	Year 4	Year 4
	<ul style="list-style-type: none"> <li>• Add fractions RTP</li> <li>• Subtract fractions RTP</li> <li>• Partition the whole RTP</li> <li>• Unit fractions of a set of objects</li> <li>• Non-unit fractions of a set of objects</li> <li>• Reasoning with fractions of an amount.</li> </ul> <p>NRICH PROBLEM: <a href="#">Matching Fractions (maths.org)</a></p>	<ul style="list-style-type: none"> <li>• Make a whole with tenths</li> <li>• Make a whole with hundredths</li> <li>• Partition decimals</li> <li>• Flexibly partition decimals</li> <li>• Compare decimals</li> <li>• Order decimals</li> <li>• Round to the nearest whole numbers</li> <li>• Halves and quarters as decimals.</li> </ul> <p>NRICH PROBLEM: <a href="#">Round the Dice</a></p>	<ul style="list-style-type: none"> <li>• Pounds and pence</li> <li>• Convert pounds and pence</li> <li>• Add money RTP</li> <li>• Subtract money RTP</li> <li>• Find change RTP</li> </ul> <p>NRICH PROBLEM: <a href="#">How Much Did it Cost? (maths.org)</a></p>	<ul style="list-style-type: none"> <li>• Write money using decimals</li> <li>• Convert between pounds and pence</li> <li>• Compare amounts of money</li> <li>• Estimate with money</li> <li>• Calculate with money</li> <li>• Solve problems with money</li> </ul> <p>NRICH PROBLEM: <a href="#">How Much Did it Cost? (maths.org)</a></p>	<ul style="list-style-type: none"> <li>• Roman numerals to 12</li> <li>• Tell the time to 5m</li> <li>• Tell the time to the minute</li> <li>• Read time on a digital clock</li> <li>• Use am and pm</li> <li>• Years, months and days</li> <li>• Days and hours</li> <li>• Hours and minutes – use start and end times</li> <li>• Hours and minutes – use durations</li> </ul>	<ul style="list-style-type: none"> <li>• Years, months, weeks and days</li> <li>• Hours, minutes and seconds</li> <li>• Convert between analogue and digital times</li> <li>• Convert to the 24 hours clock</li> <li>• Convert from the 24 hours clock.</li> </ul> <p>NRICH PROBLEM: <a href="#">The Time Is ... (maths.org)</a></p>	<ul style="list-style-type: none"> <li>• Turns and angles</li> <li>• Right angles RTP</li> <li>• Compare angles</li> <li>• Measure and draw accurately</li> <li>• Horizontal and vertical</li> <li>• Parallel and perpendicular RTP</li> <li>• Recognise and describe 2D shapes</li> <li>• Draw polygons RTP</li> <li>• Recognise and describe 3D shapes</li> <li>• Make 3D shapes.</li> </ul>	<ul style="list-style-type: none"> <li>• Understand angles as turns</li> <li>• Identify angles</li> <li>• Compare and order angles</li> <li>• Triangles RTP</li> <li>• Quadrilaterals RTP</li> <li>• Polygons RTP</li> <li>• Lines of symmetry RTP</li> <li>• Complete a symmetric figure RTP</li> </ul> <p>NRICH PROBLEM: <a href="#">Nine-pin Triangles (maths.org)</a></p>	<ul style="list-style-type: none"> <li>• Interpret pictograms</li> <li>• Draw pictograms</li> <li>• Interpret bar charts</li> <li>• Draw bar charts</li> <li>• Collect and represent data</li> <li>• Two-way tables</li> </ul> <p>NRICH PROBLEM: <a href="#">Class 5's Names (maths.org)</a></p>	<ul style="list-style-type: none"> <li>• Interpret charts</li> <li>• Comparison, sum and difference</li> <li>• Interpret line graphs</li> <li>• Draw line graphs.</li> </ul> <p>NRICH PROBLEM: <a href="#">How Big Are Classes 5, 6 and 7? (maths.org)</a></p>	<ul style="list-style-type: none"> <li>• Describe position using coordinates</li> <li>• Plot coordinates</li> <li>• Draw a 2D shape on a grid RTP</li> <li>• Translate on a grid RTP</li> <li>• Describe translation on a grid</li> </ul> <p>NRICH PROBLEM: <a href="#">Coordinate Challenge (maths.org)</a></p>



		<a href="#">Decimals 1 (maths.org)</a>		<ul style="list-style-type: none"> <li>• Minutes and seconds</li> <li>• Units of time</li> <li>• Solve problems with time.</li> </ul> <p>NRICH PROBLEM: <a href="#">Wonky Watches (maths.org)</a></p>		NRICH PROBLEM: <a href="#">National Flags (maths.org)</a>				
NCETM Spine Links	NCETM: Fractions: 3.1, 3.2, 3.6, 3.3, 3.4, 3.7	NCETM: Number, addition and subtraction: 1.23-1.24		NCETM: Number, addition and subtraction: 1.22, 1.25						

Years 5/6 (Oak and Willow) AUTUMN

	Place Value		Addition and Subtraction	Multiplication and division	Four operations	Fractions A		Fractions B	Converting Units
<b>Reasoning thread</b>	Spot the mistake Missing numbers and symbols Possible answers		Other possibilities Convince me Spot the mistake	Other possibilities Making links Spot the mistake	Missing numbers and symbols Other possibilities	Prove it True or False Making links		Odd one out	Prove it/convince me  Always, sometimes and never?
	<b>Year 5</b>	<b>Year 6</b>	<b>Year 5</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Year 6</b>	<b>Year 6</b>
	<ul style="list-style-type: none"> <li>Roman Numerals to 1000.</li> <li>Numbers to 10,000</li> <li>Numbers to 100,000</li> <li>Numbers to 1,000,000</li> <li>Read and write numbers to 1,000,000</li> <li>Powers of 10.</li> <li>10/100/1,000/10,000/100,000 more/less.</li> <li>Partition numbers to 1,000,000.</li> <li>Number line to 1,000,000</li> <li>Compare and order numbers to 100,000</li> <li>Compare and order numbers to 1,000,000</li> </ul>	<ul style="list-style-type: none"> <li>Numbers to 1,000,000. <b>RTP</b></li> <li>Numbers to 10,000,000 <b>RTP</b></li> <li>Read and write numbers to 10,000,000 <b>RTP</b></li> <li>Powers of 10 <b>RTP</b></li> <li>Number line to 10,000,000 <b>RTP</b></li> <li>Compare and order any integers <b>RTP</b></li> <li>Round any integer <b>RTP</b></li> <li>Negative numbers</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="https://www.maths.org/first-connect-three">First Connect Three (maths.org)</a></p>	<ul style="list-style-type: none"> <li>Mental strategies</li> <li>Add whole numbers with more than 4dpts.</li> <li>Subtract whole numbers with more than 4dpts.</li> <li>Round to check answers</li> <li>Inverse operations (+/-)</li> <li>Multi-step addition and subtraction problems.</li> <li>Compare calculations</li> <li>Find missing numbers.</li> </ul> <p><b>NRICH PROBLEM:</b></p>	<ul style="list-style-type: none"> <li>Multiples <b>RTP</b></li> <li>Common multiples <b>RTP</b></li> <li>Factors <b>RTP</b></li> <li>Common factors <b>RTP</b></li> <li>Prime numbers</li> <li>Square numbers <b>RTP</b></li> <li>Cube numbers</li> <li>Multiply by 10,100 and 1,000. <b>RTP</b></li> <li>Divide by 10, 100 and 1,000 <b>RTP</b></li> <li>Multiples of 10, 100 and 1,000. <b>RTP</b></li> </ul> <p><b>NRICH PROBLEM:</b> <a href="https://www.maths.org/trebling">Trebling (maths.org)</a></p>	<ul style="list-style-type: none"> <li>Add and subtract integers</li> <li>Common factors</li> <li>Common multiples</li> <li>Rules of divisibility.</li> <li>Primes to 100</li> <li>Square and cube numbers</li> <li>Multiply up to a 4d number by a 2d number.</li> <li>Solve problems with multiplication. <b>RTP</b></li> <li>Short division</li> <li>Division using factors <b>RTP</b></li> <li>Introduction to long division</li> <li>Long division with remainders</li> </ul>	<ul style="list-style-type: none"> <li>Find fractions equivalent to a unit-fraction. <b>RTP</b></li> <li>Find fractions equivalent to a non-unit fraction. <b>RTP</b></li> <li>Recognise equivalent fractions <b>RTP</b></li> <li>Convert improper to mixed number fractions.</li> <li>Convert mixed number fractions to improper fractions.</li> <li>Compare fractions less than 1</li> <li>Order fractions less than 1</li> <li>Compare and order fractions greater than 1.</li> <li>Add/subtract fractions with the same denominator</li> <li>Add fractions within 1.</li> </ul>	<ul style="list-style-type: none"> <li>Equivalent fractions and simplifying <b>RTP</b></li> <li>Equivalent fractions on a number line <b>RTP</b></li> <li>Compare and order (denominator) <b>RTP</b></li> <li>Compare and order (numerator) <b>RTP</b></li> <li>Add and subtract simple fractions</li> <li>Add and subtract any two fractions</li> <li>Add mixed numbers</li> <li>Subtract mixed numbers</li> <li>Multistep problems</li> </ul>	<ul style="list-style-type: none"> <li>Multiply fractions by integers</li> <li>Multiply fractions by fractions</li> <li>Divide a fraction by an integer</li> <li>Divide any fraction by an integer</li> <li>Mixed questions with fractions</li> <li>Fraction of an amount.</li> <li>Fraction of an amount – find the whole</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="https://www.maths.org/more-fraction-bars">More Fraction Bars (maths.org)</a></p>	<ul style="list-style-type: none"> <li>Metric measures</li> <li>Convert metric measures <b>RTP</b></li> <li>Calculate with metric measures</li> <li>Miles and kilometres</li> <li>Imperial measures.</li> </ul> <p><b>TESTBASE</b></p>

	<ul style="list-style-type: none"> <li>• Round to 10, 100 and 1000.</li> <li>• Round within 100,000</li> <li>• Round within 1,000,000.</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="http://maths.org">Space Distances (maths.org)</a></p>		<a href="http://maths.org">Maze 100 (maths.org)</a>		<ul style="list-style-type: none"> <li>• Solve problems with division <b>RTP</b></li> <li>• Solve multi-step problems <b>RTP</b></li> <li>• Order of operations</li> <li>• Mental calculations and estimation.</li> <li>• Reason from known facts. <b>RTP</b></li> </ul> <p><b>NRICH PROBLEM:</b> <a href="http://maths.org">Always, Sometimes or Never? Number (maths.org)</a></p>	<ul style="list-style-type: none"> <li>• Add fractions with a total greater than 1</li> <li>• Add to a mixed number</li> <li>• Add two mixed numbers</li> <li>• Subtract fractions</li> <li>• Subtract from a mixed number</li> <li>• Subtract from a mixed number – breaking the whole.</li> <li>• Subtract two mixed numbers.</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="http://maths.org">Linked Chains (maths.org)</a></p>	<b>NRICH PROBLEM:</b> <a href="http://maths.org">Fraction Lengths (maths.org)</a>		
<b>NCETM Spine Links</b>	<b>NCETM:</b> Numbers, addition and subtraction: 1.26, 1.27	<b>NCETM:</b> Numbers, addition and subtraction: 1.26, 1.30	<b>NCETM:</b> Numbers, addition and subtraction: 1.20, 1.21, 1.22, 1.28, 1.29	<b>NCETM:</b> Multiplication and division: 2.9, 2.13, 2.18, 2.19, 2.20, 2.21	<b>NCETM:</b> Numbers, addition and subtraction: 1.20, 1.21, 1.30  <b>NCETM:</b> Multiplication and division: 2.20, 2.21, 2.22, 2.23, 2.24, 2.25, 2.28	<b>NCETM:</b> Fractions: 3.5, 3.6, 3.7, 3.8	<b>NCETM:</b> Fractions: 3.5, 3.6, 3.7, 3.8, 3.9	<b>NCETM:</b> Fractions: 3.5, 3.6, 3.7, 3.8	

Years 5/6 (Oak and Willow) SPRING

	Multiplication and Division	Ratio	Fractions B	Algebra	Decimals (Year 5 to include percentages)		Fractions, decimals and percentages	Perimeter and area (Year 6 to include Volume)		Statistics	
<b>Reasoning thread</b>	Making links  Missing numbers and symbols		Spot the mistake  True or False		Missing numbers and symbols  Spot the mistake  Prove it		True or False  Odd one out	Prove it/convince me  Always, sometimes and never?		Convince me  True or false	
	<b>Year 5</b>	<b>Year 6</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Year 6</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Year 5</b>	<b>Year 6</b>
	<ul style="list-style-type: none"> <li>• Multiply up to a 4d number by a 1d number. <b>RTP</b></li> <li>• Multiply a 2d number by a 2d number (area model) <b>RTP</b></li> <li>• Multiply a 2d number by a 2d number <b>RTP</b></li> <li>• Multiply a 3d number by a 2d number <b>RTP</b></li> <li>• Multiply a 4d number by a 2d number <b>RTP</b></li> <li>• Solve problems with multiplication</li> <li>• Short division <b>RTP</b></li> </ul>	<ul style="list-style-type: none"> <li>• Add or multiply? <b>RTP</b></li> <li>• Use ratio language</li> <li>• Introduction to the ratio symbol</li> <li>• Ratio and fractions</li> <li>• Scale drawing <b>RTP</b></li> <li>• Use scale factors <b>RTP</b></li> <li>• Similar scales <b>RTP</b></li> <li>• Ratio problems <b>RTP</b></li> <li>• Proportion problems <b>RTP</b></li> <li>• Recipes <b>RTP</b></li> </ul>	<ul style="list-style-type: none"> <li>• Multiply a unit fraction by an integer</li> <li>• Multiply a non-unit fraction by an integer</li> <li>• Calculate a fraction by a quantity <b>RTP</b></li> <li>• Fraction of an amount <b>RTP</b></li> <li>• Find the whole</li> <li>• Use fractions as operators.</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Linked Chains</a></p>	<ul style="list-style-type: none"> <li>• 1-step function machine</li> <li>• 2-step function machine</li> <li>• Form expression</li> <li>• Substitution</li> <li>• Formulae</li> <li>• Form equation</li> <li>• Solve 1-step equation</li> <li>• Solve 2-step equation</li> <li>• Find pairs of values <b>RTP</b></li> </ul>	<ul style="list-style-type: none"> <li>• Decimals up to 2dp <b>RTP</b></li> <li>• Equivalent decimals and fractions (tenths) <b>RTP</b></li> <li>• Equivalent fractions and decimals (hundredths and tenths) <b>RTP</b></li> <li>• Equivalent fractions and decimals <b>RTP</b></li> <li>• Thousandths as decimals</li> <li>• Thousandths on a place value chart</li> <li>• Order and compare</li> </ul>	<ul style="list-style-type: none"> <li>• Place value within 1.</li> <li>• Place value – integers and decimals</li> <li>• Round decimals</li> <li>• Add and subtract decimals</li> <li>• Multiply by 10, 100 and 1000 <b>RTP</b></li> <li>• Divide by 10, 100 and 1000 <b>RTP</b></li> <li>• Multiply decimals by integers</li> <li>• Divide decimals by integers</li> <li>• Multiply and divide decimals in context.</li> </ul>	<ul style="list-style-type: none"> <li>• Decimals and fraction equivalents</li> <li>• Fractions as division</li> <li>• Understand percentages</li> <li>• Fractions to percentages</li> <li>• Equivalent fractions, decimals and percentages</li> <li>• Order fractions, decimals and percentages</li> <li>• Percentage of an amount – one step</li> <li>• Percentages of an amount – multi step</li> </ul>	<ul style="list-style-type: none"> <li>• Perimeter of rectangles</li> <li>• Perimeter of rectilinear shapes</li> <li>• Perimeter of polygons</li> <li>• Area of rectangles <b>RTP</b></li> <li>• Area of compound shapes <b>RTP</b></li> <li>• Estimate area.</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Fitted</a> (<a href="#">maths.org</a>)</p>	<ul style="list-style-type: none"> <li>• Shapes – same area <b>RTP</b></li> <li>• Area and perimeter <b>RTP</b></li> <li>• Area of a triangle – counting squares <b>RTP</b></li> <li>• Area of a right-angled triangle <b>RTP</b></li> <li>• Area of any triangle <b>RTP</b></li> <li>• Area of a parallelogram <b>RTP</b></li> <li>• Volume - counting cubes</li> <li>• Volume of a cuboid</li> </ul>	<ul style="list-style-type: none"> <li>• Draw line graphs</li> <li>• Read and interpret line graphs</li> <li>• Read and interpret tables</li> <li>• Two-way tables</li> <li>• Read and interpret timetables.</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Plants</a> (<a href="#">maths.org</a>)</p>	<ul style="list-style-type: none"> <li>• Line graphs</li> <li>• Dual bar charts</li> <li>• Read and interpret pie charts</li> <li>• Pie charts with percentages</li> <li>• Draw pie charts</li> <li>• The mean</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Match the Matches</a> (<a href="#">maths.org</a>)</p>

	<ul style="list-style-type: none"> <li>Divide a 4d number by a 1d number RTP</li> <li>Divide with remainders RTP</li> <li>Efficient subtraction</li> <li>Solve problems with multiplication and division.</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Which Is Quicker?</a> (<a href="#">maths.org</a>)</p>	<p><b>NRICH PROBLEM:</b> <a href="#">Rule of Three</a> (<a href="#">maths.org</a>)</p>	<p>(<a href="#">maths.org</a>)</p>	<ul style="list-style-type: none"> <li>Solve problem with two unknowns. RTP</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Different Deductions</a> (<a href="#">maths.org</a>)</p>	<p>decimals (same number of dp) RTP</p> <ul style="list-style-type: none"> <li>Order and compare any decimals with up to 3dp. RTP</li> <li>Round to the nearest whole number RTP</li> <li>Round to 1dp RTP</li> <li>Understand percentages</li> <li>Percentages as fractions</li> <li>Percentages as decimals</li> <li>Equivalent fractions, decimals and percentages. RTP</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Forgot the Numbers</a> (<a href="#">maths.org</a>)</p>	<p><b>NRICH PROBLEM:</b> <a href="#">Spiralling Decimals</a> (<a href="#">maths.org</a>)</p>	<ul style="list-style-type: none"> <li>Percentages – missing values</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Doughnut Percents</a> (<a href="#">maths.org</a>)</p>	<p><b>NRICH PROBLEM:</b> <a href="#">Making Cuboids</a> (<a href="#">maths.org</a>)</p>			
<b>NCETM Spine Links</b>	<p><b>NCETM:</b> Multiplication and division: 2.9, 2.13, 2.18, 2.19, 2.20, 2.21</p>	<p><b>NCETM:</b> Multiplication and division: 2.27</p>	<p><b>NCETM:</b> Fractions: 3.5, 3.6, 3.7, 3.8</p>	<p><b>NCETM:</b> Numbers, addition and subtraction: 1.28, 1.31</p>	<p><b>NCETM:</b> Numbers, addition and subtraction: 1.23, 1.24 Multiplication and division: 2.19, 2.29 Fractions: 3.10</p>	<p><b>NCETM:</b> Numbers, addition and subtraction: 1.24 Multiplication and division: 2.19, 2.28 Fractions: 3.10</p>	<p><b>NCETM:</b> Numbers, addition and subtraction: 1.24 Multiplication and division: 2.19, 2.28 Fractions: 3.10</p>	<p><b>NCETM:</b> Multiplication and division: 2.16, 2.20</p>	<p><b>NCETM:</b> Multiplication and division: 2.16, 2.20, 2.30</p>	<p><b>NCETM:</b> Numbers, addition and subtraction: 1.28, 1.29</p>	<p><b>NCETM:</b> Numbers, addition and subtraction: 1.28 Multiplication and division: 2.26 Fractions: 3.10</p>

Years 5/6 (Oak and Willow) SUMMER

	Shape		Position and Direction		Decimals	Negative Numbers	Converting Units	Volume
<b>Reasoning thread</b>	Prove it/convince me  Always, sometimes and never?		Prove it/convince me		Missing numbers and symbols  Spot the mistake  True or False?	Odd one out	Prove it/convince me	Always, sometimes and never?
	<b>Year 5</b>	<b>Year 6</b>	<b>Year 5</b>	<b>Year 6</b>	<b>Year 5</b>	<b>Year 5</b>	<b>Year 5</b>	<b>Year 5</b>
	<ul style="list-style-type: none"> <li>Understand and use degrees</li> <li>Classify angles <b>RTP</b></li> <li>Estimate angles <b>RTP</b></li> <li>Measure angles up to 180° <b>RTP</b></li> <li>Draw lines and angles accurately <b>RTP</b></li> <li>Calculate angles around a point</li> <li>Calculate angles on a straight line</li> <li>Lengths and angles in shapes.</li> <li>Regular and irregular polygons</li> <li>3D shapes</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Estimating Angles (maths.org)</a></p>	<ul style="list-style-type: none"> <li>Measure and classify angles</li> <li>Calculate angles</li> <li>Vertically opposite angles</li> <li>Angles in a triangle <b>RTP</b></li> <li>Angles in a triangle – special cases <b>RTP</b></li> <li>Angles in a triangle – missing angles <b>RTP</b></li> <li>Angles in a quadrilateral <b>RTP</b></li> <li>Angles in polygons <b>RTP</b></li> <li>Circles</li> <li>Draw shapes accurately <b>RTP</b></li> <li>Nets of 3D shapes</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Ten Hidden Squares (maths.org)</a></p>	<ul style="list-style-type: none"> <li>Read and plot coordinates</li> <li>Problem solving with coordinates</li> <li>Translation</li> <li>Translation with coordinates</li> <li>Lines of symmetry</li> <li>Reflection in horizontal and vertical lines.</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Transformations on a Pegboard (maths.org)</a></p>	<ul style="list-style-type: none"> <li>The first quadrant</li> <li>Read and plot points in the first quadrants</li> <li>Solve problems with coordinates</li> <li>Translations</li> <li>Reflections</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">A Cartesian Puzzle (maths.org)</a></p>	<ul style="list-style-type: none"> <li>Use known facts to add and subtract decimals within 1.</li> <li>Complements to 1</li> <li>Add and subtract decimals across 1</li> <li>Add decimals with the same number of decimal places</li> <li>Subtract decimals with the same number of decimal places.</li> <li>Add decimals with different number of decimals.</li> <li>Subtract decimals with different number of decimals</li> <li>Efficient strategies for adding and subtracting decimals.</li> <li>Decimal sequences</li> <li>Multiply by 10, 100 and 1000 <b>RTP</b></li> </ul>	<ul style="list-style-type: none"> <li>Understand negative numbers</li> <li>Count through zero in 1s</li> <li>Count through zero in multiples</li> <li>Compare and order negative numbers</li> <li>Find the difference</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Sea Level (maths.org)</a></p>	<ul style="list-style-type: none"> <li>Kilograms and kilometres</li> <li>Millimetres and millilitres</li> <li>Convert units of length <b>RTP</b></li> <li>Convert between metric and imperial units <b>RTP</b></li> <li>Convert units of time <b>RTP</b></li> <li>Calculate with timetables.</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Weighing Fruit (maths.org)</a></p>	<ul style="list-style-type: none"> <li>Cubic centimetres</li> <li>Compare volume</li> <li>Estimate volume</li> <li>Estimate capacity.</li> </ul> <p><b>NRICH PROBLEM:</b> <a href="#">Oh! Harry! (maths.org)</a></p>

	<a href="#">Making Rectangles (maths.org)</a>				<ul style="list-style-type: none"> <li>• Divide by 10, 100 and 1000 RTP</li> <li>• Multiply and divide decimals – missing values. RTP</li> <li>• <b>NRICH PROBLEM:</b> <a href="#">Round the Dice Decimals 2 (maths.org)</a></li> </ul>			
<b>NCETM Spine Links</b>	NCETM: Numbers, addition and subtraction: 1.28	NCETM: Numbers, addition and subtraction: 1.28	NCETM: Numbers, addition and subtraction: 1.27	NCETM: Numbers, addition and subtraction: 1.27	NCETM: Numbers, addition and subtraction: 1.23, 1.24 Multiplication and division: 2.19, 2.29			NCETM: Multiplication and division: 2.16, 2.20