

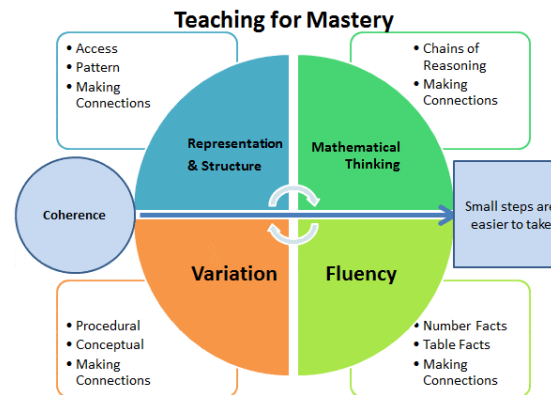
“Come now, and let us reason together,” **Isaiah 1:18**

At St Meriadoc CofE Infant Academy our Maths Curriculum follows the EYFS Statutory Framework and the National Curriculum. Our school ethos celebrates all aspects of school life and endeavours to provide positive experiences for all pupils. This is reflected in our vision and mission statements.

At St Meriadoc CofE Infant Academy, we believe that Maths should be fun, clear and challenging; we want every child to leave St Meriadoc CofE Infant Academy with a love of Maths, a mastery of skills and a deep grounding in the basics needed to progress.

We aim to develop the children’s understanding, so they can not only apply fluency and speed to their mathematics, but also a deepened comprehension of how maths works; enabling them to be able to develop their mathematical reasoning skills, make connections between ideas and make informed and appropriate choices about the methods they wish to use (mental or written) to solve mathematical problems efficiently and effectively.

All teachers have developed their knowledge through PD led by professionals and by the Maths Lead, who is a Primary Maths Mastery Specialist. Teaching staff have all benefited from participating in Maths Hub Work Groups.



# Maths

**Maths Calculation Policy on our school website (White Rose):**

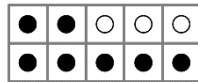
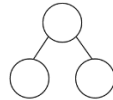
**Supporting Materials – Guidance**

- **Calculation Policy all Year Groups**
- **National Curriculum and Ready to Progress Mapping**
- 

<https://whiteroseeducation.com/resources?subject=primary+maths&year=year+2+%28v3%29>

Our Junior Academy has the same policy.

**Maths in the Early Years**



At St Meriadoc CoE Infant Academy, we believe that spending as much time as possible with concrete objects and pictorial representations (through the CPA approach described below) will help our young learners master number skills. We believe that if learners develop a deep understanding of numbers to 10 by the end of Reception, the chances of children understanding numbers beyond significantly increase (the statutory EYFS curriculum 2021 and its ELGs reflect number bonds and their importance).

Each Early Years classroom has a dedicated Maths Area, equipped with a wide range of mathematical based resources which are rotated on a regular basis to match the weekly/current focus. However, mathematical play is encouraged throughout the rooms and outdoor areas by all members of staff. Maths is incorporated into daily routines throughout the day, such as during the registers, using pennies to pay for snack in a tens frame, during cooking activities and voting for a story to be read and comparing results using the language of 'more' and 'less'. Staff work hard to develop children's mathematical language skills, modelling specific vocabulary through play opportunities; a focus of our school's Blossom Curriculum Vocabulary Strategy. A storybook approach has proven to be a highly successful way to relate maths into everyday contexts which the children can relate to and talk about. Numberblocks episodes are brought to life by using cubes of the same colour within play, for example, to find one more by adding a red cube (the red cube is a character for number 1 in the series).

Our Mastering Number sessions form a key focus for our daily Maths, supporting children to develop a strong early number sense. Our White Rose planning is informed by the DFE Development Matters document, Birth to 5 Matters and the NCETM Progression of skills for the six main areas of maths: Counting, Cardinality, Comparison, Composition, Shape and Space, Pattern and Measures.

## **EYFS Parent Information**

Blossom Curriculum Vocabulary Strategy: <https://www.st-meriadoc-inf.cornwall.sch.uk/site/data/files/users/curriculum/B984DF07664E4F4ACB503D145501436D.pdf>

Early Education: Learning Together Series – Maths is Everywhere:

<https://www.st-meriadoc-inf.cornwall.sch.uk/site/data/files/users/curriculum/2BFD01D0699B5853C1D495DAC44473AD.pdf>

Numberblocks episodes and games: <https://www.bbc.co.uk/cbeebies/shows/numberblocks>



## **Maths in Key Stage 1**

The White Rose scheme of work is used throughout the school and beyond to the Junior Academy. It is a highly structured CPA approach to teaching maths and deepens the understanding of all children.

Every lesson follows the same structure:

### **1. Get Ready: Starter task**

This fluency-based section enables pupils to re-visit prior learning and apply their fluency skills flexibly to a range of carefully sequenced questions, supported by manipulatives and images.

### **2. Let's Learn**

Teachers use the Teaching and Learning Strategy (MAT policy) to deliver the lesson in the 'I do, we do, you do' approach. Teachers use the following when planning and delivering:

- Plan questions, examples and tasks in a precise, careful sequence.
- Present new knowledge in small bite-sized steps.
- Identify common misconceptions associated with the topic so that possible mistakes they might make can be modelled.
- Use direct instruction and verbalize the thought processes.
- Allow children time to process model worked examples.

This guided practice part of the lesson can incorporate time to explore with manipulatives, to record pictorially and abstractly on whiteboards and collaboratively talk. Children are given time to tackle a set of questions that allow them to apply what they have learnt so far, and teachers are able to spend time consolidating the learning for those who need it. The questions are designed with procedural variation, to move the children's learning on each time.

### 3. Your Turn

Children move onto the workbook when they are ready to work independently from the teacher. Again, procedural variation allows children to apply their knowledge in more difficult questions each time. Some pupils will continue to work in a guided group for this aspect of the lesson.

White Rose Maths embeds reasoning skills, fluency and problem solving throughout every lesson. It promotes the use of concrete and pictorial resources placing each lesson in context. Using variation of questioning, it builds on pupil's knowledge and understanding, encouraging pupils to make links within their learning.

Pupils work complete work in squared maths books and the White Rose workbooks. Teachers use the technique of 'Pre-teach' to support learners who may need to revisit pre-skills or to have a mini introduction to a topic before it is taught in the lesson. Teachers also plan for pupils who may complete the workbook activities by creating blue bordered 'GDS' (Greater Depth) tasks to further challenge them on the topic.

These tasks are often found from the NCTEM and White Rose materials to complement our programme.

#### NCTEM:

Teaching for Mastery – Year 1 Questions, tasks and activities to support assessment:

[https://www.nctem.org.uk/media/qjpcp24/mastery\\_assessment\\_y1.pdf](https://www.nctem.org.uk/media/qjpcp24/mastery_assessment_y1.pdf)

Teaching for Mastery – Year 2 Questions, tasks and activities to support assessment:

[https://www.ncetm.org.uk/media/dnobtk14/mastery\\_assessment\\_yr2.pdf](https://www.ncetm.org.uk/media/dnobtk14/mastery_assessment_yr2.pdf)

**White Rose Resources:**

**KS1:** <https://whiterosemaths.com/resources/primary-resources/primary-sols/>

Times Table Rock Stars/Numbots: <https://play.ttrockstars.com/auth/school/student/30082>

The Maths Lead is responsible for supporting colleagues in their teaching, keeping them informed of current developments in the subject, and by providing a strategic lead and direction for Maths including following the school's robust system for monitoring and assessing subjects.



Our children are supported through our annually chosen School Rights from the United Nations Convention on the Rights of the Child and our core Christian Values, all embodied through our vision of **Let your light shine** and our mission statement:

**'Through enjoyable, memorable learning, supported by our core Christian Values and high expectations, we can aspire to make educated choices in order to flourish to live a rich and fulfilled life.'**

Christian Values

Our whole school ethos is underpinned by our core Christian Values of Faith, Love, Respect, Perseverance and Forgiveness. In Maths, we further explore these values such as exploring how we persevere when problem solving.

# Maths

Intent (curriculum design, coverage and appropriateness)	Implementation (curriculum delivery, teaching and assessment)	Impact (attainment and progress)
<p>The aim of the Maths curriculum is to ensure all children:</p> <ul style="list-style-type: none"> <li>• Become fluent in the fundamentals of maths through intelligent practice.</li> <li>• Develop their conceptual understanding and the ability to recall and apply knowledge rapidly.</li> <li>• To reason and problem solve by applying their mathematics to a variety of increasingly complex problems.</li> <li>• To build upon children’s knowledge and understanding from Nursery – Year 2.</li> <li>• To develop independent learning behaviours through choice and challenge.</li> <li>• To develop confident, articulate children.</li> <li>• To develop resilience and stamina to enable all children to reason and problem solve with an increased confidence.</li> </ul> <p>EYFS</p> <ul style="list-style-type: none"> <li>• To develop a deep conceptual understanding of the numbers to 10, providing all children with a secure base knowledge from which mathematical mastery is built.</li> </ul>	<p>Termly topics are planned to ensure a broad and balanced curriculum is taught across all areas of maths:</p> <ul style="list-style-type: none"> <li>• Daily maths lessons include fluency, problem solving and reasoning to provide opportunities for intelligent practice and appropriate challenge for all groups of learners.</li> <li>• Fluency based sessions are held regularly to develop rapid recall and retention across all classes.</li> <li>• Concrete manipulatives and pictorial representations are used to support conceptual understanding and make explicit links.</li> <li>• Children complete end of unit checks to gauge understanding.</li> <li>• Gaps identified are used to inform planning and ‘Keep up, not catch up’ sessions are provided to support the filling of gaps.</li> </ul> <p>EYFS</p> <ul style="list-style-type: none"> <li>• Children are taught lessons focusing on developing a love of maths.</li> <li>• Fluency, problem solving and reasoning are incorporated into each lesson and children are provided with the opportunities to use a range of manipulatives, discuss their learning and be subject to high quality modelling.</li> <li>• Teachers have access to CPD to improve their confidence and ability to teach Maths effectively.</li> <li>• Progression and coverage is monitored closely to ensure continuation from EYFS to Year Two.</li> </ul>	<p>Enthusiastic, excited and curious children.</p> <ul style="list-style-type: none"> <li>• Children’s progress is tracked using our school’s assessment tracking system. Any areas of development will have been identified.</li> <li>• Internal moderation of books provides evidence of consistent teaching and opportunities where all pupils use their knowledge of manipulatives and pictures to write abstract ideas.</li> <li>• Well planned sequences of learning, support children to develop and refine their maths skills.</li> <li>• Children are independently able to apply their understanding to solve a range of complex problems across all subjects.</li> <li>• Children are reasoning with increased confidence and accuracy. They are able to voice their opinions and justify decisions they have made.</li> </ul> <p>EYFS</p> <ul style="list-style-type: none"> <li>• Children are excited by maths and enjoy lessons.</li> <li>• Children have a deep understanding of mathematical concepts that they are using in their wider school community.</li> </ul>

## Maths

- Curriculum leaders work alongside teachers from each year group to ensure the quality of teaching throughout the school.
- Resources are audited to ensure they are suitable, appropriate and useful.
- Our robust subject monitoring system, includes planning scrutiny, book looks, subject data analysis, subject coverage checks, lesson observations and pupil conferencing. This will enable the curriculum leaders to check coverage and progression.



### Mastering Number

Mastering Number is a comprehensive programme designed by NCETM to:

- develop automaticity in number bonds
- develop good number sense

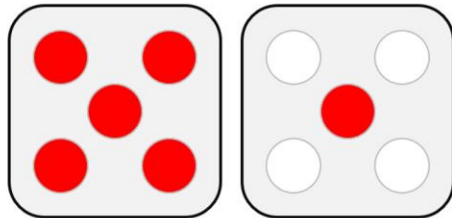
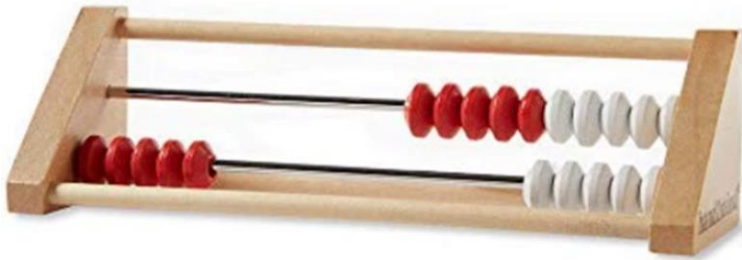
All children in Reception, Year 1 and Year 2 participate in a 10-15 minute session, 4 days a week.

Five key themes of the programme:

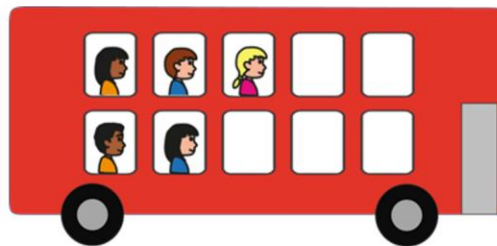


# Maths

## Mastering Number: Key Representations



5	
5	0
4	1
3	2
2	3
1	4
0	5



## Ready-to-Progress materials: DFE Guidance

### Year 1 guidance

#### Ready-to-progress criteria

Previous experience	Year 1 ready-to-progress criteria	Future applications
Begin to develop a sense of the number system by verbally counting forward to and beyond 20, pausing at each multiple of 10.	<b>1NPV-1</b> Count within 100, forwards and backwards, starting with any number.	Count through the number system. Place value within 100. Compare and order numbers. Add and subtract within 100.
Play games that involve moving along a numbered track, and understand that larger numbers are further along the track.	<b>1NPV-2</b> Reason about the location of numbers to 20 within the linear number system, including comparing using $<$ $>$ and $=$	Reason about the location of larger numbers within the linear number system. Compare and order numbers. Read scales.
Begin to experience partitioning and combining numbers within 10.	<b>1NF-1</b> Develop fluency in addition and subtraction facts within 10.	Add and subtract across 10. All future additive calculation. Add within a column during columnar addition when the column sums to less than 10 (no regrouping). Subtract within a column during columnar subtraction when the minuend of the column is larger than the subtrahend (no exchanging).
Distribute items fairly, for example, put 3 marbles in each bag. Recognise when items are distributed unfairly.	<b>1NF-2</b> Count forwards and backwards in multiples of 2, 5 and 10, up to 10 multiples, beginning with any multiple, and count forwards and backwards through the odd numbers.	Recall the 2, 5 and 10 multiplication tables. Carry out repeated addition and multiplication of 2, 5, and 10, and divide by 2, 5 and 10. Identify multiples of 2, 5 and 10. Unitise in tens. Identify odd and even numbers.

Previous experience	Year 1 ready-to-progress criteria	Future applications
Understand the cardinal value of number words, for example understanding that 'four' relates to 4 objects. Subitise for up to 5 items. Automatically show a given number using fingers.	<b>1AS-1</b> Compose numbers to 10 from 2 parts, and partition numbers to 10 into parts, including recognising odd and even numbers.	Add and subtract within 10.
Devise and record number stories, using pictures, numbers and symbols (such as arrows).	<b>1AS-2</b> Read, write and interpret equations containing addition (+), subtraction (-) and equals (=) symbols, and relate additive expressions and equations to real-life contexts.	Represent composition and decomposition of numbers using equations.
See, explore and discuss models of common 2D and 3D shapes with varied dimensions and presented in different orientations (for example, triangles not always presented on their base).	<b>1G-1</b> Recognise common 2D and 3D shapes presented in different orientations, and know that rectangles, triangles, cuboids and pyramids are not always similar to one another.	Describe properties of shape. Categorise shapes. Identify similar shapes.
Select, rotate and manipulate shapes for a particular purpose, for example: <ul style="list-style-type: none"> <li>rotating a cylinder so it can be used to build a tower</li> <li>rotating a puzzle piece to fit in its place</li> </ul>	<b>1G-2</b> Compose 2D and 3D shapes from smaller shapes to match an example, including manipulating shapes to place them in particular orientations.	Find the area or volume of a compound shape by decomposing into constituent shapes. Rotate, translate and reflect 2D shapes. Identify congruent shapes.

# Maths

## Ready-to-progress criteria

Year 1 conceptual prerequisites	Year 2 ready-to-progress criteria	Future applications
<p>Know that 10 ones are equivalent to 1 ten.</p> <p>Know that multiples of 10 are made up from a number of tens, for example, 50 is 5 tens.</p>	<p><b>2NPV-1</b> Recognise the place value of each digit in two-digit numbers, and compose and decompose two-digit numbers using standard and non-standard partitioning.</p>	<p>Compare and order numbers.</p> <p>Add and subtract using mental and formal written methods.</p>
<p>Place the numbers 1 to 9 on a marked, but unlabelled, 0 to 10 number line.</p> <p>Estimate the position of the numbers 1 to 9 on an unmarked 0 to 10 number line.</p> <p>Count forwards and backwards to and from 100.</p>	<p><b>2NPV-2</b> Reason about the location of any two-digit number in the linear number system, including identifying the previous and next multiple of 10.</p>	<p>Compare and order numbers.</p> <p>Round whole numbers.</p> <p>Subtract ones from a multiple of 10, for example: <math>30 - 3 = 27</math></p>
<p>Develop fluency in addition and subtraction facts within 10.</p>	<p><b>2NF-1</b> Secure fluency in addition and subtraction facts within 10, through continued practice.</p>	<p>All future additive calculation.</p> <p>Add within a column during columnar addition when the column sums to less than 10 (no regrouping).</p> <p>Subtract within a column during columnar subtraction when the minuend of the column is larger than the subtrahend (no exchanging).</p>

Year 1 conceptual prerequisites	Year 2 ready-to-progress criteria	Future applications
<p>Learn and use number bonds to 10, for example: <math>8 + 2 = 10</math></p> <p>Partition numbers within 10, for example: <math>5 = 2 + 3</math></p>	<p><b>2AS-1</b> Add and subtract across 10, for example: <math>8 + 5 = 13</math> <math>13 - 5 = 8</math></p>	<p>Add and subtract within 100: add and subtract any 2 two-digit numbers, where the ones sum to 10 or more, for example: <math>26 + 37 = 63</math></p> <p>Use knowledge of unitising to add and subtract across other boundaries, for example: <math>1.3 - 0.5 = 0.8</math></p> <p>Add within a column during columnar addition when the column sums to more than 10 (regrouping), for example, for: <math>126 + 148</math></p> <p>Subtract within a column during columnar subtraction when the minuend of the column is smaller than the subtrahend (exchanging), for example, for: <math>453 - 124</math></p>
<p>Solve missing addend problems within 10, for example: <math>4 + \square = 10</math></p>	<p><b>2AS-2</b> Recognise the subtraction structure of 'difference' and answer questions of the form, "How many more...?".</p>	<p>Solve contextual subtraction problems for all three subtraction structures (reduction, partitioning and difference) and combining with other operations.</p>
<p>Add and subtract within 10, for example: <math>6 + 3 = 9</math> <math>6 - 2 = 4</math></p> <p>Know that a multiple of 10 is made up from a number of tens, for example, 50 is 5 tens.</p>	<p><b>2AS-3</b> Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract only ones or only tens to/from a two-digit number.</p>	<p>Add and subtract using mental and formal written methods.</p>

Year 1 conceptual prerequisites	Year 2 ready-to-progress criteria	Future applications
<p>Add and subtract within 10. Know that a multiple of 10 is made up from a number of tens, for example, 50 is 5 tens.</p>	<p><b>2AS-4</b> Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract any 2 two-digit numbers.</p>	<p>Add and subtract numbers greater than 100, recognising unitising, for example: <math>32 \text{ ones} + 23 \text{ ones} = 55 \text{ ones}</math> so <math>32 \text{ tens} + 23 \text{ tens} = 55 \text{ tens}</math> <math>320 + 230 = 550</math></p>
<p>Count in multiples of 2, 5 and 10.</p>	<p><b>2MD-1</b> Recognise repeated addition contexts, representing them with multiplication equations and calculating the product, within the 2, 5 and 10 multiplication tables.</p>	<p>Use multiplication to represent repeated addition contexts for other group sizes.</p> <p>Memorise multiplication tables.</p>
<p>Count in multiples of 2, 5 and 10 to find how many groups of 2, 5 or 10 there are in a particular quantity, set in everyday contexts.</p>	<p><b>2MD-2</b> Relate grouping problems where the number of groups is unknown to multiplication equations with a missing factor, and to division equations (quotitive division).</p>	<p>Division with other divisors.</p>
<p>Recognise common 2D and 3D shapes presented in different orientations.</p>	<p><b>2G-1</b> Use precise language to describe the properties of 2D and 3D shapes, and compare shapes by reasoning about similarities and differences in properties.</p>	<p>Identify similar shapes. Describe and compare angles.</p> <p>Draw polygons by joining marked points</p> <p>Identify parallel and perpendicular sides.</p> <p>Identify regular polygons</p> <p>Find the perimeter of regular and irregular polygons.</p> <p>Compare areas and calculate the area of rectangles (including squares) using standard units.</p> <p>Compare areas and calculate the area of rectangles (including squares) using standard units.</p>

		Adding 1		Bonds to 10		Adding 10		Bridging/compensating		Y1 facts	
		Adding 2		Adding 0		Doubles		Near doubles		Y2 facts	
+	0	1	2	3	4	5	6	7	8	9	10
0	0+0	0+1	0+2	0+3	0+4	0+5	0+6	0+7	0+8	0+9	0+10
1	1+0	1+1	1+2	1+3	1+4	1+5	1+6	1+7	1+8	1+9	1+10
2	2+0	2+1	2+2	2+3	2+4	2+5	2+6	2+7	2+8	2+9	2+10
3	3+0	3+1	3+2	3+3	3+4	3+5	3+6	3+7	3+8	3+9	3+10
4	4+0	4+1	4+2	4+3	4+4	4+5	4+6	4+7	4+8	4+9	4+10
5	5+0	5+1	5+2	5+3	5+4	5+5	5+6	5+7	5+8	5+9	5+10
6	6+0	6+1	6+2	6+3	6+4	6+5	6+6	6+7	6+8	6+9	6+10
7	7+0	7+1	7+2	7+3	7+4	7+5	7+6	7+7	7+8	7+9	7+10
8	8+0	8+1	8+2	8+3	8+4	8+5	8+6	8+7	8+8	8+9	8+10
9	9+0	9+1	9+2	9+3	9+4	9+5	9+6	9+7	9+8	9+9	9+10
10	10+0	10+1	10+2	10+3	10+4	10+5	10+6	10+7	10+8	10+9	10+10

# Maths

## White Rose Overviews

### Nursery

## Yearly overview

The yearly overview provides an at-a-glance progression of the mathematical areas and concepts throughout the nursery scheme. The 24 blocks can be accessed at any stage of children starting nursery. Timings are flexible to allow you to start the progression where developmentally appropriate as well as with children starting nursery in different intakes through the year or longer.

Comparison 1	Shape, space and measure 1	Pattern 1	Counting 1	Counting 2	Subitising 1
More than, fewer than, same	Explore and build with shapes and objects	Explore repeats	Hear and say number names	Begin to order number names	I see 1, 2, 3
Pattern 2	Shape, space and measure 2	Subitising 2	Counting 3	Shape, space and measure 3	Pattern 3
Join in with repeats	Explore position and space	Show me 1, 2, 3	Move and label 1, 2, 3	Explore position and routes	Explore patterns
Counting 4	Shape, space and measure 4	Subitising 3	Comparison 2	Pattern 4	Shape, space and measure 5
Take and give 1, 2, 3	Match, talk, push and pull	Talk about dots	Compare and sort collections	Lead on own repeats	Start to puzzle
Pattern 5	Subitising 4	Counting 5	Pattern 6	Counting 6	Comparison 3
Making patterns together	Make games and actions	Show me 5	My own pattern	Stop at 1, 2, 3, 4, 5	Match, sort, compare

# Maths

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Getting to know you		<b>Match, sort and compare</b> FREE TRIAL <small>Free trial</small> VIEW	<b>Talk about measure and patterns</b> VIEW	<b>It's me 1, 2, 3</b> VIEW	<b>Circles and triangles</b> VIEW	<b>1, 2, 3, 4, 5</b> VIEW	<b>Shapes with 4 sides</b> VIEW				
Spring	<b>Alive in 5</b> VIEW	<b>Mass and capacity</b> VIEW	<b>Growing 6, 7, 8</b> VIEW	<b>Length, height and time</b> VIEW	<b>Building 9 and 10</b> VIEW		<b>Explore 3-D shapes</b> VIEW					
Summer	<b>To 20 and beyond</b> VIEW	<b>How many now?</b> VIEW	<b>Manipulate, compose and decompose</b> VIEW	<b>Sharing and grouping</b> VIEW	<b>Visualise, build and map</b> VIEW		<b>Make connections</b> VIEW	<b>Consolidation</b>				



# Year 1

# Maths



	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number <b>Place value</b> (within 10) FREE TRIAL VIEW					Number <b>Addition and subtraction</b> (within 10) VIEW					Geometry <b>Shape</b> VIEW	Consolidation
Spring	Number <b>Place value</b> (within 20) VIEW		Number <b>Addition and subtraction</b> (within 20) VIEW			Number <b>Place value</b> (within 50) VIEW		Measurement <b>Length and height</b> VIEW		Measurement <b>Mass and volume</b> VIEW		
Summer	Number <b>Multiplication and division</b> VIEW			Number <b>Fractions</b> VIEW		Geometry <b>Position and direction</b> VIEW	Number <b>Place value</b> (within 100) VIEW		Measurement <b>Money</b> VIEW	Measurement <b>Time</b> VIEW		Consolidation

# Maths

## Year 2

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number <b>Place value</b> FREE TRIAL VIEW			Number <b>Addition and subtraction</b> VIEW			Geometry <b>Shape</b> VIEW					
Spring	Measurement <b>Money</b> VIEW		Number <b>Multiplication and division</b> VIEW				Measurement <b>Length and height</b> VIEW		Measurement <b>Mass, capacity and temperature</b> VIEW			
Summer	Number <b>Fractions</b> VIEW			Measurement <b>Time</b> VIEW			<b>Statistics</b> VIEW		Geometry <b>Position and direction</b> VIEW		Consolidation	



# Maths

