

Mathematics

“Anyone who has never made a mistake, has never tried anything new...
...If you can't explain it simply, you don't know it well enough.” Albert Einstein

Our Mathematics curriculum is inspiring, challenging, deep and broad, nurturing talent and enabling social mobility so that all pupils:

- develop transformational knowledge and skills that take them beyond their experience.
- strengthen their academic knowledge and cultural capital through the acquisition of a broad and deep vocabulary.
- shape their character and scholarship to prepare them for life so that they can make a positive contribution to society and live safely and independently.

INTENT

Pupils at Blackawton will:

- Be able to calculate accurately and confidently using the four operations.
- Have quick recall of times tables facts and key age-related facts to enable fluency in Mathematics.
- Be able to derive answers from knowledge held in their long-term memory.
- Be able to reason in Mathematics, using a range of precise mathematical vocabulary, including well-structured stem sentences.
- Be able to represent their thinking through the use of models, images and concrete apparatus.
- Be able to problem solve, using a range of strategies, including bar modelling, always choosing the most efficient methods.
- Show resilience when tackling a difficult problem and be able to describe the small steps to achieve a solution.
- Be confident in the topics taught within the National Curriculum showing age appropriate fluency, knowledge and skills to reason and problem solve in a variety of contexts.

IMPLEMENTATION

At Blackawton we have adopted a Mastery approach in Mathematics, following extensive and ongoing CPD for staff. We have shared expertise and good practice with other schools, through our local Maths hub. The 'White Rose Schemes of Learning' provide the small steps planning we follow. These are supplemented by resources from a range of sources including: The NCETM. Teachers plan and sequence small steps for the needs of their class, following formative assessment daily through 'Do it nows' and 'Quick Quizzes' as necessary. The Mathematics leader is responsible for keeping abreast with developments in Mastery resources and theories. Teachers share good practice and knowledge of high-quality resources with each other and teachers in other settings.

IMPACT

Our Mathematics curriculum facilitates sequential learning and long-term progression of knowledge and skills. Teaching and learning methods provide regular opportunities to recap acquired knowledge through high quality questioning, discussion, modelling and explaining, to aid retrieval throughout and at the end of a lesson or unit. This will enable all children to alter their long-term memory and know more, remember more and be able to do more as mathematicians.

Mastering Number: Overview of content – Reception

Strand/ Half-term	Subitising	Cardinality, ordinality and counting	Composition	Comparison
1 Children will:	<ul style="list-style-type: none"> perceptually subitise within 3 identify sub-groups in larger arrangements create their own patterns for numbers within 4 practise using their fingers to represent quantities which they can subitise experience subitising in a range of contexts, including temporal patterns made by sounds. 	<ul style="list-style-type: none"> relate the counting sequence to cardinality, seeing that the last number spoken gives the number in the entire set have a wide range of opportunities to develop their knowledge of the counting sequence, including through rhyme and song have a wide range of opportunities to develop 1:1 correspondence, including by coordinating movement and counting have opportunities to develop an understanding that anything can be counted, including actions and sounds explore a range of strategies which support accurate counting. 	<ul style="list-style-type: none"> see that all numbers can be made of 1s compose their own collections within 4. 	<ul style="list-style-type: none"> understand that sets can be compared according to a range of attributes, including by their numerosity use the language of comparison, including 'more than' and 'fewer than' compare sets 'just by looking'.
2 Children will:	<ul style="list-style-type: none"> continue from first half-term subitise within 5, perceptually and conceptually, depending on the arrangements. 	<ul style="list-style-type: none"> continue to develop their counting skills explore the cardinality of 5, linking this to dice patterns and 5 fingers on 1 hand begin to count beyond 5 begin to recognise numerals, relating these to quantities they can subitise and count. 	<ul style="list-style-type: none"> explore the concept of 'wholes' and 'parts' by looking at a range of objects that are composed of parts, some of which can be taken apart and some of which cannot explore the composition of numbers within 5. 	<ul style="list-style-type: none"> compare sets using a variety of strategies, including 'just by looking', by subitising and by matching compare sets by matching, seeing that when every object in a set can be matched to one in the other set, they contain the same number and are equal amounts.
3 Children will:	<ul style="list-style-type: none"> increase confidence in subitising by continuing to explore patterns within 5, including structured and random arrangements explore a range of patterns made by some numbers greater than 5, including structured patterns in which 5 is a clear part 	<ul style="list-style-type: none"> continue to develop verbal counting to 20 and beyond continue to develop object counting skills, using a range of strategies to develop accuracy continue to link counting to cardinality, including using their fingers to represent quantities between 5 and 10 	<ul style="list-style-type: none"> continue to explore the composition of 5 and practise recalling 'missing' or 'hidden' parts for 5 explore the composition of 6, linking this to familiar patterns, including symmetrical patterns 	<ul style="list-style-type: none"> continue to compare sets using the language of comparison, and play games which involve comparing sets continue to compare sets by matching, identifying when sets are equal

	<ul style="list-style-type: none"> experience patterns which show a small group and '1 more' continue to match arrangements to finger patterns. 	<ul style="list-style-type: none"> order numbers, linking cardinal and ordinal representations of number. 	<ul style="list-style-type: none"> begin to see that numbers within 10 can be composed of '5 and a bit'. 	<ul style="list-style-type: none"> explore ways of making unequal sets equal.
4 Children will:	<ul style="list-style-type: none"> explore symmetrical patterns, in which each side is a familiar pattern, linking this to 'doubles'. 	<ul style="list-style-type: none"> continue to consolidate their understanding of cardinality, working with larger numbers within 10 become more familiar with the counting pattern beyond 20. 	<ul style="list-style-type: none"> explore the composition of odd and even numbers, looking at the 'shape' of these numbers begin to link even numbers to doubles begin to explore the composition of numbers within 10. 	<ul style="list-style-type: none"> compare numbers, reasoning about which is more, using both an understanding of the 'howmanyness' of a number, and its position in the number system.
5 Children will:	<ul style="list-style-type: none"> continue to practise increasingly familiar subitising arrangements, including those which expose '1 more' or 'doubles' patterns use subitising skills to enable them to identify when patterns show the same number but in a different arrangement, or when patterns are similar but have a different number subitise structured and unstructured patterns, including those which show numbers within 10, in relation to 5 and 10 be encouraged to identify when it is appropriate to count and when groups can be subitised. 	<ul style="list-style-type: none"> continue to develop verbal counting to 20 and beyond, including counting from different starting numbers continue to develop confidence and accuracy in both verbal and object counting. 	<ul style="list-style-type: none"> explore the composition of 10. 	<ul style="list-style-type: none"> order sets of objects, linking this to their understanding of the ordinal number system.
6	In this half-term, the children will consolidate their understanding of concepts previously taught through working in a variety of contexts and with different numbers.			

Reception pupils will also have EYFS Continuous Provision

Year 1-6

Whilst White Rose Medium Term Planning is used to provide guidance on progression of knowledge and skills, teachers, with guidance from the Maths Lead, adjust timescales according to the needs of their individual pupils and classes. In mixed age classes, knowledge from both year groups is taken into account whilst planning. Our continuous formative assessment allows us to choose next objectives accordingly.



Year 1 – White Rose Maths Yearly Overview

	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: Place Value (within 10)				Number: Addition and Subtraction (within 10)					Geometry: Shape	Number: Place Value (within 20)	
Spring	Consolidation	Number: Addition and Subtraction (within 20)			Number: Place Value (within 50)			Measurement: Length and Height		Measurement: Weight and Volume		Consolidation
Summer	Consolidation	Number: Multiplication and Division			Number: Fractions		Geometry: Position and Direction	Number: Place Value (within 100)		Measurement: Money	Measurement: Time	



Year 2 – White Rose Maths Yearly Overview

	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: Place Value			Number: Addition and Subtraction					Measurement: Money		Number: Multiplication and Division	Consolidation
Spring	Number: Multiplication and Division				Statistics		Geometry: Properties of Shape			Number: Fractions		
Summer	Measurement: Length and Height	Geometry: Position and Direction		Consolidation and problem solving		Measurement: Time		Measurement: Mass, Capacity and Temperature			Consolidation	



Year 3 – White Rose Maths Yearly Overview

	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: Place Value			Number: Addition and Subtraction					Number: Multiplication and Division			
Spring	Number: Multiplication and Division			Measurement: Money	Statistics		Measurement: Length and Perimeter			Number: Fractions		Consolidation
Summer	Number: Fractions			Measurement: Time			Geometry: Properties of Shape		Measurement: Mass and Capacity			Consolidation



Year 4 – White Rose Maths Yearly Overview

	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: Place Value				Number: Addition and Subtraction			Measurement: Length and Perimeter		Number: Multiplication and Division		
Spring	Number: Multiplication and Division			Measurement: Area	Number: Fractions				Number: Decimals			Consolidation
Summer	Number: Decimals		Measurement: Money		Measurement: Time		Statistics	Geometry: Properties of Shape		Geometry: Position and Direction		Consolidation



Year 5 – White Rose Maths Yearly Overview

	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: Place Value			Number: Addition and Subtraction		Statistics		Number: Multiplication and Division			Measurement: Perimeter and Area	
Spring	Number: Multiplication and Division			Number: Fractions						Number: Decimals and Percentages		Consolidation
Summer	Consolidation	Number: Decimals			Geometry: Properties of Shape		Geometry: Position and Direction		Measurement: Converting Units		Measurement: Volume	



	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: Place Value		Number: Addition, Subtraction, Multiplication and Division					Number: Fractions			Geometry: Position and Direction	
Spring	Number: Decimals		Number: Percentages		Number: Algebra		Measurement: Converting Units	Measurement: Perimeter, Area and Volume		Number: Ratio		Statistics
Summer	Geometry: Properties of Shape			Consolidation or SATs preparation		Consolidation, Investigations and preparations for KS3						