

Purpose of Study

- Mathematics is a creative and highly interconnected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems.
- It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment.
- A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

Aim

- The national curriculum for mathematics aims to ensure that all pupils:
 - Become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
 - Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
 - Can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.
- Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects.

Attainment target

- The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace.
- However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage.
- Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content.
- Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.
- By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.
- Schools are not required by law to teach the example content in [square brackets] or the content indicated as being 'non-statutory'.

Useful Links

- BBC Bitesize KS1
- BBC Bitesize KS2
- <http://amathsdictionaryforkids.com/>
- <http://www.ilovemathsgames.com/>
- <http://www.mathsisfun.com/index.htm>

- <http://www.mathszone.co.uk/>
- <http://www.multiplication.com/>
- <http://www.topmarks.co.uk/>
- <http://nrich.maths.org/frontpage>
- <https://www.topmarks.co.uk/maths-games/hit-the-button>

Scheme of work



Intent

The intent of our mathematics curriculum is to provide children with a foundation for understanding number, reasoning, thinking logically and problem solving with resilience so that they are fully prepared for the future. It is essential that these keystones of Mathematics are embedded throughout all strands of the National Curriculum. By adopting a Mastery approach, it is also intended that all children, regardless of their starting point, will maximise their academic achievement and leave Dr Walkers Church of England School with an appreciation and enthusiasm for Maths, resulting in a lifelong positive relationship with number.

We ensure that we deliver a high quality maths curriculum that is both challenging and enjoyable.

- We want children to make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems.
- We intend for our pupils to be able to apply their mathematical knowledge to science and other subjects.
- We want them to know that maths is essential to everyday life and that our children are confident mathematicians who are not afraid to take risks.
- Fully develop independent learners with inquisitive minds who have secure mathematical foundations and an interest in self-improvement.

Implementation

At Dr Walker's Church of England School our implementation is developed through secure understanding of the curriculum and subject area.

Teaching and Learning, Content and Sequence

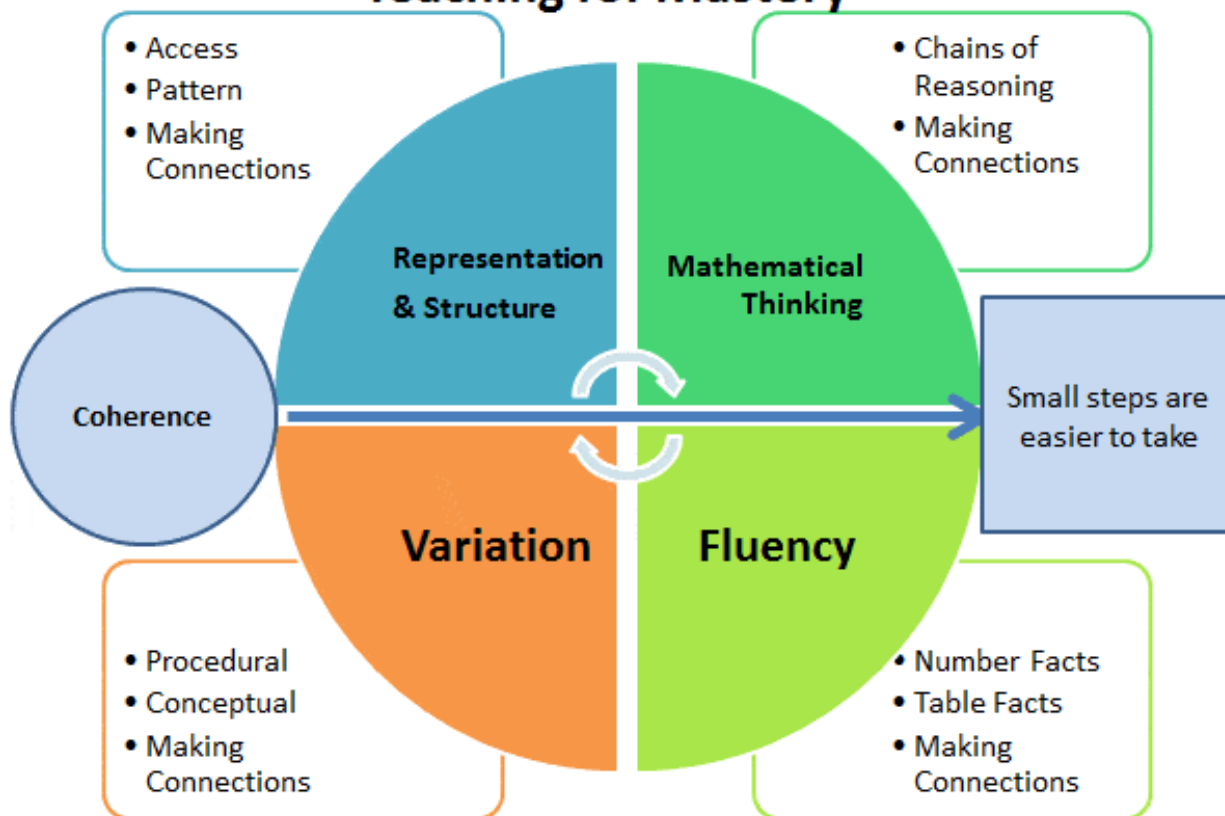
- For maths, our long term planning follows the National Curriculum 2014. All teachers follow daily lessons from Reception through to Year 6 using Schemes of learning published by White Rose Maths to plan effectively, producing lessons incorporating fluency, reasoning and problem solving. The White Rose schemes are complimented with additional resources which reinforce reasoning and problem solving. Short term planning is supported by the use of the White Rose Maths materials and our school calculation policy (to be updated).
- By using a variety of planning resources we believe that we provide a bespoke teaching and learning experience that is designed to interest, inform and inspire our children.
- Using prior knowledge as a starting point for all future planning and teaching, we plan lessons which are required for all pupils to make good progress.
- Lessons are engaging and follow a cycle of planning, to ensure that we can evidence progress over short and long periods of time.
- Maths lessons are designed with a concrete, pictorial and abstract (CPA) approach, providing our pupils with the scaffolding required to access the learning at all levels.
- We place a large emphasis on pupil engagement and design lessons which involve all pupils using questioning and modelling at the centre of every lesson.
- To implement our intent, we ensure that our children are invested in their learning and are making a positive contribution to their lessons.

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Teaching for Mastery



Leadership, Assessment and Feedback

- Assessment informs the teaching and learning sequence, and children work on the objectives they are assessed as being at.
- Children who are not making the required progress are given extra support through booster sessions and support in class in order to meet our INTENT of developing pupils academically.
- Feedback is given on children's learning in line with our feedback policy. Formative assessment within every lesson helps teachers to identify the children who need more support to achieve the intended outcome and who are ready for greater stretch and challenge through planned questioning or additional activities.
- In order to support teacher judgments, children are assessed using current and reliable tests in line with the national curriculum for maths.
- Analysis of any tests that the children complete is undertaken and fed into future planning. Summative assessments are completed and help influence the overall judgement reported to parents in the end of year report as well as termly mini-reports.

Impact

- A mathematical concept or skill has been mastered when a child can show it in multiple ways, using the mathematical language to explain their ideas, and can independently apply the concept to new problems in unfamiliar situations.
- Children demonstrate quick recall of facts and procedures. This includes the recollection of the times tables.
- The flexibility and fluidity to move between different contexts and representations of mathematics.
- The ability to recognise relationships and make connections in mathematics.
- Children show confidence in believing that they will achieve.
- Children show a high level of pride in the presentation and understanding of the work.
- Subject and school leaders monitor the impact of our curriculum provision through completing regular monitoring, that includes listening to the voice of our pupils.

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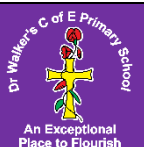
Long Term Plan

CYCLE A	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception						
Years 1 / 2						
Years 3 / 4						
Years 5 / 6						

CYCLE B	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception						
Years 1 / 2						
Years 3 / 4						
Years 5 / 6						

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Reception

	Week 1-3	Week 4-6	Week 7-9	Week 10-12
Autumn	Getting to know me	Just like me	It's me 1, 2, 3!	Light and dark
Spring	Alive in 5!	Growing 6,7,8	Building 9 and 10!	Consolidation
Summer	To 20 and beyond	First, then, now	Find my pattern	On the move

Year 1 (New scheme)

	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	Place value (within 10)					Addition and subtraction (within 10)					Geometry (Shape)	Consolidation
Spring	Place value within 20)			Addition and subtraction (within 20)			Place value within 50)		Length and height		Mass and volume	
Summer	Multiplication and division			Fractions		Geometry (Position and direction)	Place value within 100)		Money	Time		Consolidation

Year 2 (New scheme)

	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	Place value				Addition and subtraction					Shape		
Spring	Money		Multiplication and division					Length and height		Mass, capacity and temperature		
Summer	Fractions			Time			Statistics		Positions and direction		Consolidation	

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Year 3/4 (Old scheme)

Cycle	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	<u>Place value</u>				<u>Addition and Subtraction</u>				<u>Multiplication and Division</u>			
Spring	<u>Multiplication and division</u>		<u>Length, Area and perimeter</u>		<u>Fractions</u>				<u>Mass and capacity</u>		Consolidation	
Summer	<u>Decimals (incl money)</u>			<u>Time</u>		<u>Statistics</u>		<u>Properties of shape</u>				Consolidation

Cycle	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	<u>Place value</u>				<u>Addition and Subtraction</u>				<u>Multiplication and Division</u>			
Spring	<u>Multiplication and division</u>		<u>Length, Area and perimeter</u>		<u>Fractions</u>				<u>Decimals</u>		Consolidation	
Summer	<u>Decimals (incl money)</u>			<u>Time</u>		<u>Statistics</u>		<u>Position and direction</u>		Consolidation		

Year 5/6 (Old scheme)

Cycle	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	<u>Place value</u>		<u>Four operations</u>					<u>Fractions</u>				

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Spring	<u>Fractions</u>	<u>Decimals and percentages</u>	<u>Decimals</u>	<u>Converting units</u>	<u>Perimeter, area and volume</u>	<u>Statistics</u>
Summer	<u>Properties of shape</u>	<u>Position and direction</u>	<u>Investigation and Consolidation</u>			

Cycle	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	<u>Place value</u>		<u>Four operations</u>				<u>Fractions</u>				
Spring	<u>Ratio</u>		<u>Decimals and percentages</u>		<u>Algebra</u>		<u>Converting units</u>	<u>Perimeter, area and volume</u>		<u>Statistics</u>		
Summer	<u>Properties of shape</u>		<u>Position and direction</u>	<u>Investigation and Consolidation</u>								

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