

# What maths looks like at Kilby St Mary's C of E (Aided) Primary School



## INTENT:

Our maths curriculum supports the aims and objectives of National Curriculum 2014.

We believe -

- Everyone can learn maths. We encourage a growth mindset.
- We use a mastery approach where children's understanding is deepened.
- A large emphasis is on reinforcing number to build competency and knowledge.
- Mathematical problem solving is greatly improved when the basic skills (addition, multiplication, etc.) are overlearned and become automatic, thus freeing working-memory capacity.
- Problem solving and reasoning takes place in every objective.
- Cross-curricular links are made when relevant, particularly to give a connected curriculum.
- Teachers need to have a strong, connected understanding of the material being taught.

## IMPLEMENTATION:

Foundation Stage:

Personalised objectives taken from Number and Shape, Space and Measure areas of learning using criteria from Development Matters and mostly based scheme of learning by White Rose.

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
<b>Autumn</b>	Baseline Assessments			Just Like Me! – Matching, Sorting, comparing size, amounts, height & length, Repeating patterns			It's Me 1,2,3! – Representing No.s 1-3, Comparing, One more, One less, 2D shapes circle and triangles			Light & Dark – Representing No.s 4- 5, 2D shapes square & rectangle, Time		
<b>Spring</b>	Alive in 5! – Composition of No.s to 5, Comparing Mass, Measuring capacity			Growing 6,7,8 – Representing, sorting and composition of 6,7,8, Addition, Comparing Height & Length, Days of the week			Building 9 & 10 – Representing, sorting and composition of 9 & 10, Comparing No.s within 10, Making 10			3D Shape & Pattern – Matching, building & printing with 3D shapes, Creating patterns		
<b>Summer</b>	Number patterns to 20 using 10 frames, Ordering numerals to 20, Estimating			Addition, and Subtraction			Doubling, halving and sharing			Measuring, time & capacity		

## KS1 Year 1 & 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	
<b>Autumn</b>													
Yr 1	<b>Numbers:</b> Place Value (within 20)			<b>Numbers:</b> Addition and Subtraction (within 20 inc. recognising money)					<b>Numbers:</b> Place Value and Multiplication (within 50)				
Yr 2	<b>Numbers:</b> Place Value (numbers to 200)			<b>Numbers:</b> Addition and Subtraction (within 100 inc. money)					<b>Numbers:</b> Multiplication				
<b>Spring</b>													
Yr 1	<b>Numbers:</b> Division and Consolidation		<b>Numbers:</b> Place Value (within 100)		<b>Multiplication:</b> Height & Length	<b>Geometry:</b> Shape and Construction			<b>Numbers:</b> Fractions and Consolidation		<b>Consolidation</b>		
Yr 2	<b>Numbers:</b> Division		<b>Numbers:</b> Place Value (within 100)			<b>Geometry:</b> Properties of Shape			<b>Numbers:</b> Fractions				
<b>Summer</b>													
Yr 1	<b>Geometry:</b> Position & Direction	<b>Measurement:</b> Time		<b>Problem Solving &amp; efficient methods</b>		<b>Measurement:</b> Weight and Volume			<b>Consolidation and Investigations</b>				
Yr 2		<b>Measurement:</b> Time		<b>Problem Solving &amp; efficient methods</b>		<b>Measurement:</b> Mass, Capacity and Temperature			<b>Consolidation and Investigations</b>				

## KS2 Year 3 & 4

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	
<b>Autumn</b>													
Yr 3	<b>Numbers:</b> Place Value				<b>Numbers:</b> Addition and Subtraction				<b>Numbers:</b> Multiplication and Division				
Yr 4	<b>Numbers:</b> Place Value				<b>Numbers:</b> Addition and Subtraction				<b>Numbers:</b> Multiplication and Division				
<b>Spring</b>													
Yr 3	<b>Numbers:</b> Multiplication and Division		<b>Measurement:</b> length and Perimeter area		<b>Numbers:</b> Fractions			<b>Measurement:</b> mass and Capacity			<b>Consolidation</b>		
Yr 4	<b>Numbers:</b> Multiplication and Division		<b>Measurement:</b> length and Perimeter area		<b>Numbers:</b> Fractions			<b>Numbers:</b> Decimals					
<b>Summer</b>													
Yr 3	<b>Numbers:</b> Decimals (inc. money)			<b>Measurement:</b> Time		<b>Statistics:</b> Statistics		<b>Geometry:</b> Properties of Shape				<b>Consolidation</b>	
Yr 4	<b>Numbers:</b> Decimals (inc. money)			<b>Measurement:</b> Time		<b>Statistics:</b> Statistics		<b>Geometry:</b> Position and Direction					

## KS2 Year 5 & 6

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
<b>Autumn</b>												
Yr 5	<b>Numbers:</b> Place Value		<b>Numbers:</b> Four Operations				<b>Numbers:</b> Fractions					
Yr 6	<b>Numbers:</b> Place Value		<b>Numbers:</b> Four Operations				<b>Numbers:</b> Fractions					
<b>Spring</b>												
Yr 5	<b>Numbers:</b> Fractions		<b>Numbers:</b> Decimals and Percentages			<b>Numbers:</b> Decimals		<b>Measurement:</b> Covering units	<b>Measurement:</b> Perimeter area and Volume		<b>Statistics</b>	
Yr 6	<b>Numbers:</b> Ratio		<b>Numbers:</b> Decimals and Percentages			<b>Numbers:</b> Algebra		<b>Measurement:</b> Covering units	<b>Measurement:</b> Perimeter area and Volume		<b>Statistics</b>	
<b>Summer</b>												
Yr 5	<b>Geometry:</b> Properties of Shape		<b>Geometry:</b> Position & direction	<b>Investigations and Consolidation</b>								
Yr 6	<b>Geometry:</b> Properties of Shape		<b>Geometry:</b> Position & direction	<b>SATS</b>	<b>Investigations and Consolidation</b>							

### IMPLEMENTATION:

- Teachers give children the opportunity to review previous learning, provide models for the kinds of responses pupils are required to produce, provide adequate time for practise to embed skills securely and scaffold new learning.
- Activities such as choral counting, chanting, quick fire maths games are used to ensure basic skills are overlearned in order to become automatic, thus freeing working-memory capacity.
- Access to manipulatives/concrete resources is available to support understanding.
- Flexible mixed ability groupings / seating in place to allow children to work with different people over the course of time.
- Lots of talk—reasoning with a strong focus on using specific mathematical language, especially when explaining why.
- Patterns and opportunities for 'making connections.'
- Opportunities to practise and become fluent in written and mental calculation methods.
- Mini-quizzes of new knowledge and vocabulary are used to encourage better organisation of a pupil's knowledge and to encourage their metacognitive monitoring.
- Mini plenaries to share misconceptions, pose questions, challenge ideas.
- Structured problems that challenge thinking.

- Teachers pre-teaching a concept ahead of the lesson for children identified in pre-assessments.
- Problem solving challenges are set that challenge thinking.
- Reasoning activities such as; 'true or false', 'prove it', 'always, sometimes never'
- Planning includes discrete focus on 3 aims of curriculum - Fluency, Reasoning and Problem Solving; reflection to drive next steps learning and planning; SMSC.
- Emphasis on quality first teaching.
- Positive use of mistakes/misconceptions- learning environment.
- Regular book scrutiny, learning walks, planning audits, pupil perceptions.
- Whole school CPD.

### IMPACT:

This is the impact of the teaching:

- Confident children who can talk about maths and their own reasoning.
- Confident children who have a depth of understanding/application in different contexts.

This is how we monitor the impact

- Tracking grids submitted to HT each term for analysis based on end of year age expectations.
- Pupil progress meetings - involving teacher, subject lead and HT/AHT.
- Teacher assessment/ targets.
- Marking and feedback.
- Photo evidence of practical maths where manipulatives are effectively being used to improve understanding.
- Targeted use of LSAs - observing individual children.
- TA/Teacher conversations and feedback time.

This is how we use intervention:

- Quick response intervention (reteach in books), following marking / assessments with identified children.
- Small group additional teacher support for reteach of identified areas from half termly grids on specified children.
- Pre-teaching to specific groups of children.

This is how we challenge the rapid graspers:

- Problem solving in different contexts.
- Deepening reasoning and justification.
- Generalising and testing rules