



# Madley Primary School

'Be the best you can be'



## Mathematics at Madley Primary School

### Curriculum Statement

Our Mathematics Curriculum aims to ensure that all pupils develop the skills and confidence to solve a variety of mathematical problems that require fluency with both number and reasoning. Links between maths and the real world are identified and explored so that pupils can see the relevance of developing these critical life skills.

Over the past few years, the school has adopted a "Mastery" approach to mathematics to develop and improve the teaching and learning of all aspects of the curriculum and this underpins the planning, lesson delivery, classroom environment and assessment within the school. In doing this, the three aims of the National Curriculum should be addressed everyday: **fluency**, **reasoning** and **problem solving**.



## Intent:-

### What Maths looks like in our school:

- ❖ **Whole class teaching** - maths is taught to a whole class unless specific curriculum objectives from previous years need to be taught to particular pupils. Formative assessment allows each pupil's starting point and attainment to be closely monitored and intervention taken quickly where needed.
- ❖ **Focus on “small steps” objectives** - – to ensure that objectives and conceptual ideas are securely embedded teachers will follow a small steps approach: they plan and deliver engaging lessons model and scaffold skills as needed; use probing questions; and provide greater depth challenges. The pace of each lesson is adapted to ensure that understanding is secure; learning will be enhanced through the use of concrete resources, pictorial representations or abstract problems as determined by each pupil's needs and ability.
- ❖ **Use of precise mathematical vocabulary** - this is modelled by the teacher to enable the pupils to use the correct language within their own reasoning and explanations.
- ❖ **Connections between concepts made** - where appropriate links to other mathematical concepts, the real world and other areas of the curriculum are highlighted and explored. These connections allow the children to think critically and reason about their learning.

### By the end of EYFS pupils will:

- ❖ Count reliably with numbers from one to ten; place them in order; and say which number is one more or one less than a given number.
- ❖ Use quantities and objects to add and subtract two single-digit numbers and count on or back to find the answer. They will solve problems, including doubling, halving and sharing.
- ❖ Use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems.
- ❖ Recognise, create and describe patterns. They will explore characteristics of everyday objects and shapes, and use mathematical language to describe them.

### By the end of Key Stage 1 pupils will:

- ❖ Develop confidence and fluency with whole numbers, counting and place value.
- ❖ Use numerals, words and the four operations.
- ❖ Recognise, describe, draw, compare and sort different shapes and use the related mathematical vocabulary.
- ❖ Use a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.
- ❖ Know the number bonds to 20 and be precise in using and understanding place value.
- ❖ Read and spell some mathematical vocabulary.

### **By the end of Lower Key Stage 2 pupils will:**

- ❖ Be increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value.
- ❖ Complete efficient written and mental calculations accurately with increasingly large whole numbers.
- ❖ Develop their ability to solve a range of problems, including those involving simple fractions and decimal place value.
- ❖ Analyse shapes and their properties, and confidently describe the relationships between them.
- ❖ Use measuring instruments with accuracy and make connections between measure and number.
- ❖ Know their multiplication tables up to and including the 12 times table.
- ❖ Read and spell some mathematical vocabulary correctly and confidently use it within their work.



### **By the end of Upper Key Stage 2 pupils will:**

- ❖ Understand the number system and place value to include larger integers.
- ❖ Make connections between multiplication and division with fractions, decimals, percentages and ratio.
- ❖ Develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and

mental methods of calculation.

- ❖ Use the language of algebra as a means of solving a variety of problems.
- ❖ Classify shapes with increasingly complex geometric properties and use the correct vocabulary to describe them.
- ❖ Be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.
- ❖ Complete efficient written and mental calculations accurately with increasingly large whole numbers.
- ❖ Read, pronounce and spell a range of mathematical vocabulary correctly.

### **Implementation:-**

#### **This is how it works:**

- ❖ Planning is reactive on a day-to-day basis
- ❖ Pupils have the opportunity to be further challenged within a lesson with all tasks linking to the others
- ❖ Regular 10 minute sessions, depending on year group, focusing on basic skills and fluency: four rules, place value, doubling and halving, missing numbers, number bonds, or fractions. Within Key Stage 2, this will be achieved through Flashback 4 activities.
- ❖ Use of White Rose Maths and other resources to support learning at all levels, including Active Maths sessions.
- ❖ Use of TTRS/Funkey Maths to support learning both in class and at home.
- ❖ Numerous opportunities to talk about maths, using correct vocabulary and cross-curricular links.



- ❖ Pupils to use “I know because” and “Prove it” methods to show understanding before moving on to the next small step.
- ❖ Opportunities given to learn from mistakes and discussions regarding common misconceptions.

### **This is what adults do:-**

- ❖ Plan engaging, well thought through lessons that include discrete focus on the three aims of the mathematical curriculum: fluency, reasoning and problem solving.
- ❖ Use reflection and the positive use of mistakes and misconceptions to secure learning.
- ❖ Create a positive, engaging learning environment rich in mathematical resources that support learning for all.
- ❖ Engage with whole school and individual CPD in mathematics.
- ❖ Take part in or respond to the findings and learnings from regular book scrutiny, moderation, learning walks, and pupil voice.
- ❖ Raise the profile of mathematics across the whole school.

### **] This is how we support:**

- ❖ Ongoing teacher and self-assessment within a lesson to quickly identify any pupil who requires additional support in specific areas.
- ❖ Pupils will work in small groups where required either within the lesson or at a different time, before moving onto the next step.



### **This is how we challenge:**

- ❖ Small group work to further challenge
- ❖ Reasoning and justification
- ❖ Generalising and creating own instructions/questions.
- ❖ Additional Greater Depth challenges as appropriate to the objective.

### **This is how we ensure all children can access the curriculum:**

- ❖ Use of “small steps” approach to build confidence and embed learning.
- ❖ Ensure pupils are confident in the use of a range of manipulatives that are readily available within the classroom
- ❖ Additional coaching time spent outside of the lesson, where it has been identified that previous curriculum objectives also need to be taught or revisited.
- ❖ Pupils who have SEN or EAL needs are supported through extra opportunities to develop key vocabulary with an LSA or the class teacher.
- ❖ A range of resources are available and used including visual and practical prompts.



### **Impact:-**

#### **You will typically see:**

- ❖ Pupils engaged with their learning.
- ❖ Paired or group work involving discussion and challenge.
- ❖ Different representations of the same calculations.
- ❖ A range of different activities relating to the same objective.
- ❖ Self-motivated learners, demonstrating perseverance and resilience.
- ❖ Pupils talking positively about maths, making links to real life and cross-curricular learning.

#### **This is how we know how well our pupils are doing:**

- ❖ Questioning and discussion during lessons with teacher or LSA
- ❖ Marking and feedback provided by teacher and peers either within or after a lesson.
- ❖ Verbal feedback where possible and errors corrected depending on age.
- ❖ Written, photographic and video evidence if appropriate.
- ❖ Teacher assessment including termly and objective-by-objective.
- ❖ Tracking and analysis of assessments, linked to ongoing monitoring.
- ❖ Termly book scrutiny and pupil voice conversations.

#### **This is the impact of the teaching:**

- ❖ Confident pupils who can talk about mathematics.
- ❖ Pupils who are excited and enthusiastic about their learning in maths.
- ❖ Pupils who are able to apply their mathematical understanding in different contexts.
- ❖ Pupils who are ready for the next step in the maths curriculum by achieving the best possible outcome given their starting point.