



# Maths



## Orleton CE Primary School

We want our children to embrace mathematics, have a rounded understanding of mathematical concepts and be able to apply them in new and novel contexts. We want children to enjoy mathematics, seeing it as fun, relevant and helpful to all aspects of their daily lives.

### Curriculum Intent for Maths

What Maths looks like in our school:

- Maths is an integral part of our curriculum that is fully inclusive and engages all pupils.
- Differentiated ability grouping, however provision for flexibility to enable children to work with different people over the course of time, depending on their skills/confidence in the different focuses.
- Daily fluency outside of the daily maths lesson.
- Reasoning & Problem-solving opportunities.
- Questioning is a key part of the maths lesson – letting the children demonstrate what they know and challenging them every step.
- Pupils are required to explore maths in depth, using mathematical vocabulary to reason and explain their workings.
- Structured daily interventions are used to help close the gaps for targeted children.

#### **This is our philosophy:**

- To have an appreciation of number and number operations, which enables mental calculations and written procedures to be performed efficiently, fluently and accurately to be successful in mathematics
- To become fluent in the fundamentals of mathematics so that children develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- To be able to solve problems by applying their mathematics to a variety of problems with increasing sophistication, including in unfamiliar contexts and to model real-life scenarios
- To reason mathematically by following a line of enquiry and develop and present a justification, argument or proof using mathematical language.

This is the knowledge and understanding gained at each stage:

By the end of Year R pupils will be able:

- Count reliably with numbers from 1 to 20, place them in order and say which number is one more or one less than a given number.
- Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer.

- They 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.
- Explore characteristics of everyday objects and shapes and use mathematical language to describe them

By the end of KS1 pupils will:

- Develop confidence and mental fluency with whole numbers, counting and place value.
- Use numerals, words and the four operations, including with practical resources.
- Recognise, describe, draw, compare and sort different shapes and use the related 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. An emphasis on practice at this early stage will aid fluency.
- Read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1

By the end of LKS2 pupils will:

- Be increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value.
- Develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.
- Develop their ability to solve a range of problems, including with simple fractions and decimal place value.
- Draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties and confidently describe the relationships between them.
- Use measuring instruments with accuracy and make connections between measure and number.
- Recall multiplication and division facts for multiplication tables up to 12 x12.
- Read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

By the end of UKS2 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 for solving a variety of problems.
- Classify shapes with increasingly complex geometric properties and use the vocabulary they need 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.
- Read, spell and pronounce mathematical vocabulary correctly.

# Curriculum Implementation for Maths

## How Maths is taught:

- We foster positive can do attitude to maths.
- We believe all children can achieve in mathematics and teach for secure and deep understanding of mathematical concepts through manageable steps.
- We use mistakes and misconceptions as an essential part of learning.
- Teachers share the objectives for the lesson with the children and make sure they are clear what is being expected of them to successfully achieve the objective.
- We provide challenge through rich and sophisticated problems.
- Support is determined during each lesson to ensure secure understanding based on the needs of the child.
- Challenge is visible throughout the whole session, where children are asked to reason and prove their understanding at a deeper secure level.
- Daily fluency outside the maths lesson focuses on the children remembering more.
- We provide pre-teaching and/or immediate interventions where required to prepare children for learning the next day.
- Intervention is used outside the maths lesson to target specific learners so that all children reach their potential.

## Adults roles:

- Planning documents include: objective, fluency, focused teaching, guided/independent tasks and a plenary.
- Create a learning environment rich in resources that support learning.
- Regular book looks, learning walks and pupil voice.
- Whole school CPD.
- Termly pupil progress meetings.
- Identify those children who need extra support in order to provide them with catch-up sessions or specific intervention.

## How we support pupils and ensure they can access the curriculum:

- High quality teaching.
- Work might be differentiated so that all children are able to meet the learning objective.
- Small group/1:1 adult support given where required.
- Use teacher and self-assessment to quickly identify any child who requires additional support in specific areas. These pupils will then receive additional support or resources to use.
- For pupils who need support or with specific SEN or EAL needs a variety of approaches maybe used including pre-teaching of specific vocabulary, pairing children alongside role-models, providing visual practical prompts, adult support and adaptation of activities to ensure engagement.
- Targeted interventions will be put in place for those who need extra support with their basic maths skills.

## How we provide challenge:

- Lessons will be differentiated.
- Additional activities to stretch the learning within the lesson.
- More able children will be stretched through differentiated group work and extra challenges.

- Teachers will direct questions towards the more able (at their ability level) to maintain their involvement.
- We use live teacher-assessment and self-assessment to quickly identify those who may need more challenge in a specific area and act accordingly.

## Curriculum Impact for Maths

This is what you might see:

- A recap of learning.
- Happy and engaged learners.
- Different representations of calculations.
- A range of different activities including practical equipment.
- Resilient learners.
- Children who can work independently and can regularly work in pairs and small groups.
- Children's work across the curriculum is of good quality.
- Confident children talking positively about maths, sharing and reflecting on their learning and how it relates to real life situations.
- Specific gaps in learning addressed through daily interventions.

This is how we know our pupils are doing well:

- AFL at the beginning and throughout every lesson.
- Marking and feedback by teacher and peers.
- White Rose End of Block Assessment.
- White Rose End of Term assessment.
- Assessment tracked at the end of each half term and entered onto our summative assessment tracking system SIMS.
- Learning walks, book scrutiny and pupil voice.
- Cross school moderation with schools in the cluster and schools using same summative assessment system to ensure accuracy of assessments.

Impact of our teaching:

- Confident children who can talk about maths.
- Children who enjoy their learning in maths.
- Depth of understanding/application in different context.
- Pupils use acquired vocabulary in maths lessons.
- They have the skills to use methods independently and show resilience when tackling problems.
- By the end of Year 6 90 % of children working at ARE within each year group and 30 % of children working at Greater Depth within each year group.
- By the end of Year 2 one or more children will exceed the expected standard and one or more children to exceed the expected standard for greater depth.
- Children ready for the next step in their learning.
- Children can articulate the context in which maths is being taught and relate this to real life purposes.
- Pupils know how and why maths is used in the outside world and in the workplace. They know about different ways that maths can be used to support their future potential.