# Maths

**Curriculum Intent for Maths:**

All believe that Maths is important in everyday life and with this in mind, work hard to develop an ability to solve problems, to reason and to work systematically and accurately;

All achieve a passion and enthusiasm for Maths that enables us to tackle new learning and face challenges within this, with a logical approach;

All create a range of models and images to aid understanding; using 'Concrete, Pictorial and Abstract' approaches to explore and experience new and embedded learning;

All a family, sharing our achievements with one another whilst supporting and encouraging each other to improve and explore challenges with a positive mindset and valuing the contributions of others;

## Context:

In September 2020, we introduced a new **mastery** led curriculum using the Power Maths scheme, drawing insight and training from a **Maths Hub Specialist**. Power Maths is a whole-class mastery programme designed for children in **Reception to Year 6,** to spark curiosity and excitement and empower every child to develop a growth mind-set to succeed in maths! Teaching maths through the use of Power Maths characters, who model the traits of growth mind-set learners, support us as a school in encouraging resilience in this subject and across the curriculum.

Through the mastery approach, we encourage our children to develop resilience and self-confidence in applying their mathematical skills.

We aim for all pupils to:

- become fluent in the fundamentals of mathematics so that they develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- 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
- reason mathematically by following a line of enquiry and develop and present a justification, argument or proof using mathematical language.
- 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.

**Implementation**

How do we teach 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 and provide challenge through rich and sophisticated problems.

Problem solving, fluency and relational understanding are at the heart of the scheme. It uses the Concrete, Pictorial, Abstract approach and allows pupils to spend enough time to fully explore a topic, reinforcing it with practice, before moving onto the next one. All ideas are built on previous knowledge and pupils have ample opportunity to develop relationships between topics. When teaching, teachers consider key questions and mathematical vocabulary relevant to each lesson.

Power Maths in Reception supports us in delivering teaching for mastery and covers the current and pilot Early Learning Goals, ensuring a smooth transition to KS1 and a consistent approach across the whole school. It combines short ten-minute bursts of maths teaching each day with plenty of practice through guided activities and independent play through the provision.

Lessons from Year 1 to Year 6 are typically broken into four parts:

**Discover** – the lesson is introduced with a practical, real-life problem that arouses curiosity and enables the children to explore different methods.

**Share** – the teacher introduces and explains the new learning for the lesson and shares the children's methods.

**Think Together** – children practice new learning in groups, pairs or individually guided by the teacher.

**Independent Practice** – Once children have mastered the concept they use their reasoning and problem-solving skills to develop their depth of learning independently in their practice books

**Teaching and Planning for Mastery**

When planning, teachers incorporate 'Five Big Ideas' drawn from research evidence, underpinning teaching for mastery.

**Coherence**
Lessons are broken down into small connected steps that gradually unfold the concept, providing access for all children and leading to a generalisation of the concept and the ability to apply the concept to a range of contexts.

**Representation and Structure**
Representations used in lessons expose the mathematical structure being taught, the aim being that students can do the maths without recourse to the representation

**Mathematical Thinking**
If taught ideas are to be understood deeply, they must not merely be passively received but must be worked on by the student: thought about, reasoned with and discussed with others

**Fluency**
Quick and efficient recall of facts and procedures and the flexibility to move between different contexts and representations of mathematics

**Variation**
Variation is twofold. It is firstly about how the teacher represents the concept being taught, often in more than one way, to draw attention to critical aspects, and to develop deep and holistic understanding. It is also about the sequencing of the episodes, activities and exercises used within a lesson and follow up practice, paying attention to what is kept the same and what changes, to connect the mathematics and draw attention to mathematical relationships and structure.

**Intervention**

Intervention is focussed on providing immediate input during lessons to ensure every child keeps up and doesn't fall behind. During lessons, teachers will circulate during the independent task addressing misconceptions. Through the use of effective, child-friendly assessment questions during the input, teachers can identify which children need support to strengthen their understanding and target these children during the lesson.