MATHEMATICS

"Good mathematics is not about how many answers you know… it's about how you behave when you don't know" Anonymous

INTENT

At Balcombe CE Primary, we believe mathematics is an important part of children's development throughout the school, right from an early age. It is our intention that children understand the importance of mathematics in our world, recognising that it underpins much of our daily lives.

We believe that pupils deserve a **creative** and **ambitious** mathematics curriculum, rich in skills and knowledge, which ignites **curiosity** and prepares them for everyday life. Our children will learn to make connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems.

We strive to ensure that children believe in themselves as mathematicians, that challenges are met with a positive mindset and a sense of **resilience** and that mistakes are recognised as part of the learning journey.

As our children progress, we want them to have an ability to appreciate the beauty and power of maths and a sense of enjoyment and **curiosity** about the subject, leading to happy, confident, successful mathematicians.

IMPLEMENTATION

As our youngest children begin their journey at Balcombe CE Primary, mathematics is taught through the areas of learning in accordance with the EYFS document. In Key Stage 1 and Key Stage 2 the teaching and learning of mathematics fully incorporates the 2014 National Curriculum aims by ensuring that all children have the opportunity to:

- 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

- **solve** problems by applying their mathematics to a variety of routine and non-routine problem with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions

(National Curriculum 2014)

We have carefully created our own curriculum map in order to suit the needs of the pupils in our school. Learning opportunities are crafted to ensure progression and repetition in terms of embedding key learning, knowledge and skills. Maths skills are repeated periodically and built on year by year. We use a range of resources including White Rose Maths, NCETM and Nrich to support our planning of clear, small steps of learning and ensure our children have a rich and varied mathematical understanding.

Children are taught mathematics daily in mixed age classes using a variety of teaching and learning strategies including both independent and collaborative learning. Groups are used flexibly within classes and children move between them based on their strengths and needs. The fundamentals of mathematics are taught using a concrete, pictorial and abstract approach with visual aids and physical apparatus used throughout the school to support conceptual understanding. A wide range of resources can be found in each classroom including Numicon, base 10, bead strings, cubes, place value charts, number lines, 100 squares, money, dice, times table squares and more. These resources are used to assist demonstration of various concepts and skills, and children are encouraged to self-select their own resources when working independently.

Teachers provide scaffolding and relevant support for every child as necessary, including pupils who are working outside of their year group's curriculum. Classroom assistants support targeted groups and provide immediate feedback to ensure that work is accessible and challenging for all pupils.

Mental calculation strategies are taught within core lessons and rehearsed during early work or morning maths, ensuring children become fluent in using them to support efficient calculation. In addition, pupils in Key Stage 1 follow Number Sense Maths, a systematic, highly visual number fact teaching programme. Through this, pupils develop a deep understanding of number and number relationships, and fluency in addition and subtraction facts. Planning for all pupils follows our calculation policy which details the progression expected in the four operations of addition, subtraction, multiplication and division.

To support fluency, all children access Numbots in Key Stage 1 and Times Tables Rockstars in Key Stage 2. From Year 2 onwards children participate in our weekly 'Times Table Tuesday' challenge which supports the learning of times tables facts up to 12X12.

Problem solving and reasoning are embedded throughout the maths curriculum with regular opportunities for children to apply their understanding of the fundamentals of

mathematics to a variety of problem solving contexts. Maths talk is an integral part of lessons; teachers use questioning to promote rich mathematical discussion, sentence stems support children in explaining their reasoning and problem solving and key mathematical vocabulary is taught and displayed in accordance with our Mathematics Vocabulary Progression document.

In EYFS mathematics is taught through both adult led sessions and child-initiated learning opportunities. The learning environment is full of mathematical opportunities for children to explore, count, compare, sort and calculate. Through purposeful learning experiences children use their understanding of numbers and mathematical language every day. They are supported to talk about what they have done in maths and explain their thinking.

Assessment in mathematics takes place continually. Teachers use on-going daily assessments and termly formal assessments to ensure that misconceptions and gaps in understanding are quickly identified and addressed.

Although Mathematics is usually taught discretely, it has many cross-curricular links. Teachers use opportunities in other subjects to rehearse skills in a real-life context. For example, when collecting and recording data in Science, when measuring accurately for Design Technology and when describing direction on a map in Geography. Enrichment opportunities such as Grow £2, challenges at Christ Hospital School, older children creating maths games or trails for younger children, the Primary Maths Challenge and Times Table Rockstars competitions also enhance children's mathematical experience.

IMPACT

Children will have the knowledge and skills as outlined in our Maths Progression Document to become confident and successful mathematicians who are able to calculate, reason and problem solve effectively and efficiently in a range of contexts. They will be ready for the challenges of secondary school and beyond.

Our assessment systems will ensure that for those children who may need additional support or challenge, teachers and leaders take swift action to adapt practice and provide effective interventions so that children make the best possible progress towards meeting or exceeding age-related expectations.