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 our intention is to encourage and teach children to become proficient, **ambitious** and **creative** mathematical problem solvers. A key goal is to foster a sense of **resilience** when challenged. Moreover, we want this subject to excite children and boost a sense of **curiosity** and enjoyment.

In line with the National Curriculum, we aim to ensure all pupils:

- 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
- can **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

IMPLEMENTATION

Mathematics is a symbolic, abstract language. We believe all pupils, when introduced to a key new concept, should have the opportunity to build competency by taking the concrete – pictorial – abstract approach.

Concrete – pupils have the opportunity to use concrete objects and manipulatives to help them understand what they are doing.

Pictorial – pupils then build on this concrete approach by using pictorial representations. These representations can then be used to reason and solve problems.

Abstract – with the foundations firmly laid pupils move to an abstract approach using numbers and key concepts with confidence.

Mathematics is taught through the areas of learning in accordance with the EYFS document and the National Curriculum for KS1 and KS2. We teach maths daily using the Rising Stars Mathematics scheme as a base to support our planning. This scheme was chosen because it is carefully organised to provide a clear route through the yearly programmes of study; the curriculum concepts are revisited in a spiral way to reinforce and extend understanding and make links between content areas. To further enrich and extend this scheme our curriculum also uses resources from White Rose Maths, Nrich and NCETM ensuring our children have a rich and varied mathematical understanding.

To support fluency, all children have a login to 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.

All classrooms have a display area for Maths, which features resources and images to support the key elements of learning. We use Numicon, base 10, bead strings, cubes, place value charts, number lines, 100 squares, money, dice, times table squares and more. We use these resources in our teaching and also encourage children to self-select their own resources during independent working.

Although Mathematics is best taught discretely, it has many cross-curricular links. Teachers use opportunities in other subjects to rehearse skills in a real-life context.

IMPACT

Children leave Balcombe School having gained:

- confidence in Maths and a belief that they will achieve
- an enjoyment and enthusiasm for the subject
- quick recall of facts, including times-tables
- a thorough grasp of mental and written methods of calculation
- the ability to recognise relationships and make connections
- confidence to apply their maths knowledge in a range of contexts
- the ability to reason mathematically, justifying answers