



## Visions and Aims for Mathematics

## **How we do it at Stonebow**

Mathematics lessons at Stonebow promote learning for mastery. We endeavour to instil growth mindset principles, to promote an 'I can' attitude so that concepts can be understood, applied and mastered through continued effort, practise, perseverance and positivity.

Lessons are planned considering the five big ideas of mastery and in sequences using small, careful steps to work towards achieving a secure and deep conceptual understanding that can be applied in other contexts. Children are taught to represent their thinking in a variety of ways, using concrete, pictorial and abstract methods and representations. The early development of number and place value is taught using Numicon and other manipulatives, such as Multilink cubes, Base 10, five and ten frames, counters, part-whole diagrams and number lines. This knowledge contributes to mathematics skills that are then taught progressively as the children move through the school often utilising the same concrete, pictorial and abstract methods. Throughout lessons, children are provided with the opportunity to utilise and further develop their reasoning skills by describing, explaining, convincing, justifying and proving their thinking.

We believe that all children should be exposed to challenge. Where children quickly grasp concepts, opportunities are provided for them to 'dig deeper' and develop depth in knowledge and understanding, through making connections, explanation and discussion with their peers or teachers alike, rather than being introduced to new content.

Informal 'small stakes' assessments, including 'cold' and 'hot' tasks, are used together with termly test data to establish gaps in skills and knowledge and assess the children's progress and attainment.

## **Mathematics Lessons**

Lessons are planned primarily using Power Maths, NCETM and White Rose Maths materials which are based around the National Curriculum programmes of study. Lessons are planned in a sequence of small steps to work towards a full understanding of the key

learning point or learning objective. We expect that the majority of children will move through the learning together, at broadly the same pace. Throughout each lesson, all children are given opportunities to explain their thinking with their learning partner, small group and with the class. Children are encouraged to speak in full sentences when sharing their response and to understand and use the correct mathematical vocabulary. Over time, stem sentences (such as 'numbers that only have two factors are called prime numbers,' or 'when I halve a number, I make two equal parts') will feature regularly in lessons where key mathematical knowledge is presented as a short sentence to be displayed on working walls and spoken together, individually and used in the children's independent work. Concrete (using physical objects and manipulatives), pictorial (visual representations of concrete objects) and abstract (use of abstract mathematical symbols and strategies) methods are planned and taught to all children. In order for children to achieve a full and deep understanding, it is vital that children working abstractly are able to demonstrate the concrete and pictorial strategies underpinning them.

### **Mathematics in EYFS**

The teaching and learning of mathematics in EYFS also promotes learning for mastery and a deep understanding of concepts. Children will learn about numbers from zero to ten through number study, where children will focus on one (or a small group of numbers) for a longer period of time and according to the children's understanding and needs. To develop a deeper understanding of each number, the children will be immersed in what that number is and what it is not, as well as drawing attention to real-life examples and occurrences of the numbers up to 10. Additional learning about shape, space and measure is also interwoven throughout the provision. Stories are also used to provide context for mathematical learning in EYFS. Emphasis is also placed upon learning through play, exploration and songs as part of the provision in EYFS. Children may use a variety of objects to support their learning, such as Numicon, counters, pegs, ten frames, part-whole diagrams, toys and other objects and use these to help them to start to talk and explain their mathematical thinking.

## **Fluency Sessions**

Key Instant Recall Facts (KIRFS) are taught daily in Key Stage 2 and include the development of mental arithmetic; key mathematical knowledge; vocabulary and mental problem solving through both routine and enriching activities. Details of the Key Instant Recall Facts for each year group is available on our school website [here](#). These are monitored through routine learning walks around school by the Senior Leadership Team.

Additional Mastering Number sessions are taught in EYFS and Key Stage 1. These sessions aim to develop secure and firm foundations of good number sense, including fluency in calculating and flexibility with numbers up to 20 by the end of Year 2.

## **Assessment of outcomes**

Judgments against the national curriculum key performance indicators are made and recorded using a triangle of assessment:

- 1) Teacher observation of pupils during classroom activities
- 2) Quality of written outcomes in books and performance in hot and cold tasks
- 3) Outcomes of appropriate summative formal test (nationally recognised standardised scores)