



## MATHEMATICS SUBJECT STATEMENT

The school **aims** to ensure that 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 problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

### Learning Projects

At least once a year, mathematics will be included in learning projects to provide 'real life' learning (for example: measuring in a science learning project) and may take place in the time normally allocated to maths.

### Planning

In Key Stage 1, long term and medium term plans are adapted from Collins Busy Ants planning with some pupil book activities substituted for activities from the White Rose Hub. Key Stage 2 follows the long term and medium term plans from the White Rose Hub, with activities taken from White Rose, the NCETM, Classroom Secrets and other mastery schemes of work.

At our school we use a concrete, pictorial, abstract approach to develop a secure understanding of mathematical principles and ideas. Throughout school all children will have the opportunity to use manipulatives such as Base ten/Dienes, place value counters, place value boards etc. to support learning. Questions asked by the teacher will allow children to think deeper. Manipulatives can be used to facilitate this.

We are developing, as a key feature of teaching for mastery in our school, the precise design of lessons through use of CPA, modelling, pupil activities, practise questions and intelligent practice. The arrangement of tasks and exercises aim to draw children's' attention to patterns, structure and mathematical relationships, therefore providing 'intelligent practice' and the opportunity to deepen conceptual understanding. As part of our maths mastery approach, we are introducing the White Rose Maths Hub calculation policy over the course of this academic year.

Our lessons are increasingly built on the following principles of a mastery lesson:

- Coherence – making connections so that steps are easier to take
- Variation – procedural and conceptual
- Representation and structure – carefully planned prior to the lesson
- Mathematical thinking – chains of reasoning
- Fluency – number and table facts

### Fluency and number work

Some number work is included in every lesson (for example in a starter activity if the main lesson focusses on measurement, geometry or statistics). The school is developing classroom practice in line with the White Rose calculation policy.

### Reasoning and Problem Solving

Reasoning and problem solving activities are fundamental to our curriculum and most lessons include at least one of these. White Rose Hub activities are the primary source for these activities; Nrich and NCETM provide additional resources.

## **Early Years Foundation Stage (EYFS)**

Children are given opportunities to develop their understanding of number, measurement, pattern, shape and space, through a balance of adult focused and child initiated activities that allow them to enjoy, explore, practice and talk confidently about mathematics.

### **Assessment**

Teachers assess children's learning in part of every lesson with the aim of addressing misconceptions as they arise. A range of assessment for learning strategies is used during mathematics lessons. These include: Learning Talk stampers; pupils' use of 'Traffic Lights' and journaling/PEE to evaluate their own work; and targets to improve performance.

Bookmarks are used to track the children's summative progress throughout the year; more formal assessments are used to support teacher assessments and these are used to assess progress against targets. There are statutory tests for pupils at the end of Year 2 and Year 6.

### **Displays**

Each class has a maths display to either: celebrate maths; show methods; set a challenge; or provide resources.

### **Resources**

Each class has a range of age-appropriate resources, readily available for children to use, including the following in all classrooms: Base 10/Dienes, number lines, number squares and counters.

### **Home Learning**

We provide online learning resources to support independent home learning. All pupils have access to Conquermaths which provides activities to support maths at Key Stage 1 and Key Stage 2. Weekly maths home learning tasks are set each week to consolidate learning in class, and are intended to take no longer than 20 minutes in Key Stage 1 and 30 minutes in Key Stage 2.

*January 2020*