

# Mathematics Policy

## Fairhouse Primary School

### **Purpose of study**

Mathematics is a creative and highly interconnected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

### **The aims of Mathematics are:**

The national curriculum for mathematics 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

### **Teaching and learning:**

The teaching of mathematics is taught discreetly as stand-alone lessons with children placed within ability sets. This enables teaching to cater to the differing needs and abilities of the children. Through daily lessons, our principal aim is to develop children's fluency, reasoning and problem solving skills. These mathematics skills are used, applied and reinforced in all subject areas. In addition to our sets, we have a small SEN group of KS2 children. Our maths workout sessions provide a short focused session to practise fluency of number, mental arithmetic skills and short problem solving activities.

## **Curriculum:**

Our mathematics curriculum is set out year by year covering the statutory requirements. The majority of children will progress through the year group programs of study securely and at broadly the same pace. However, decisions about when to progress are always based on the security of pupils' understanding and their readiness to progress to the next stage, which will be decided by the teacher. Teachers have high expectations and all children are challenged during lessons. Suitable learning opportunities are provided by matching the challenge of the task to the ability of the child. Pupils who grasp concepts rapidly are challenged through being offered rich and sophisticated problems before any acceleration through new content. We offer master classes for KS2 children who are working at greater depth. Those who are not sufficiently fluent with earlier material consolidate their understanding, including through additional practice, before moving on.

### Spoken language

The national curriculum for mathematics reflects the importance of spoken language in pupils' development across the whole curriculum – cognitively, socially and linguistically. Therefore the quality and variety of language that pupils hear and speak are key factors in developing their mathematical vocabulary and presenting a mathematical justification, argument or proof. Teachers and pupils freely explain mathematical concepts using specific vocabulary. During investigative activities pupils build secure foundations through discussion to probe and remedy their misconceptions.

## **Planning and organisation:**

We carry out the curriculum planning in mathematics in three phases (long-term, medium-term and short-term). Based on a proven concrete-pictorial-abstract approach, *Numicon* encourages children to explore maths using structured imagery and apparatus in order to understand and explain mathematical concepts. We follow the Numicon planning for Reception to Year 6.

Class teachers complete a weekly (short-term) plan for the teaching of mathematics. This lists the specific learning objectives for each lesson and gives details of how the lessons are to be taught and the activities and problems the children will be practising. It also includes details of what each group of children will be learning including a challenge for each group.

All forms of planning are regularly reviewed by the Maths subject leader and Senior Leadership Team.

## **Contribution of mathematics to the teaching in other curriculum areas:**

The skills that children develop in Mathematics are linked to, and applied in, every subject of our curriculum. A problem solving week is timetabled once every term to explore different aspects of mathematics. The children's skills in maths and speaking and listening enable them to communicate and express themselves in all areas of their work in school.

## **Teaching mathematics to children with special educational needs:**

At our school we teach mathematics to all children, whatever their ability. Mathematics forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our mathematics teaching we provide learning opportunities that enable all pupils to make progress. We do this by setting suitable learning challenges and responding to each child's different needs. We follow Numicon intervention scheme. Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels.

When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style, differentiation – so that we can take some additional or different action to enable the child to learn more effectively. This ensures that our teaching is matched to the child's needs.

## **Assessment and recording:**

Teachers assess children's work in Mathematics through everyday marking, summative assessments and formal assessments. Assessments that teachers make as part of every lesson, help teachers to adjust their daily plans. Teachers match these assessments closely to the teaching objectives. Work is marked in accordance with our marking policy. Most children will meet the learning objective and will therefore continue with their next steps in the following lesson. Where challenges have not been met these will be addressed in the following lesson or if appropriate through intervention. For children who have met the learning objective, but have corrections due to misconceptions or inaccuracy will complete these the following morning before progressing to their next step. For some children an intervention is necessary. This is under adult assistance, where work is completed together or children are required to practise a previous skill before progressing further. Year 6 children undertake half termly assessments and the national tests at the end of key stage 2. Children in other year groups have an end of year test, determining how secure they are with their groups curriculum.

Teachers' assessments and formal assessments are used to assess progress against school and national targets. These assessments enable teachers to set targets for the next school year and summarise the progress of each child before discussing it with the child's parents. The next teacher also uses these assessments as the basis for planning work for the new school year.

## **Monitoring and review:**

Monitoring of the standards of the children's work and of the quality of teaching in mathematics is the responsibility of the Maths subject leader and senior leadership team, split between the middle leaders. Middle leaders will take responsibility for monitoring problem solving and weekly planning. The work of the subject leader also involves supporting colleagues in the teaching of maths, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school. Progress meetings are held with the class teacher and the subject leader / senior leadership team to set targets, discuss strategies and evaluate progress against these targets.