

# Roman Way Academy



## Mathematics Policy

This policy should be read in conjunction with the school's Calculation policies.

**Our vision: To build lifelong learners**

**Our mission: We enable every child to meet their full potential**

Roman Way Academy is an inclusive school and all children, irrespective of social background, culture, race, gender, differences in ability and disabilities have an entitlement to this area of the curriculum.

### **SMSC**

Spiritual, Moral, Social and Cultural (SMSC) development is about everything we do at Roman Way and supports the rights and responsibilities of the child. As well as contributing towards the whole school values and ethos, it leads to children becoming lifelong learners who make a positive contribution to our world, preparing them for life in modern Britain. Within the curriculum, including Religious Education and Personal, Social, Health Education, there are plans to develop SMSC.

### **Rationale**

Mathematics teaches us how to make sense of the world around us through developing a child's ability to calculate, to reason and to solve problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment.

### **Aims**

These are:

- to promote enjoyment and enthusiasm for learning through practical activity, exploration and discussion;
- to develop confidence and fluency with numbers and the number system;

- to develop children's ability to solve problems through decision-making and reasoning in a range of contexts;
- to develop a practical understanding of the ways in which information is gathered and presented;
- to explore features of shape and space, and develop measuring skills in a range of contexts;
- to understand the importance of mathematics in everyday life.

### **Teaching and learning in Mathematics** (see Teaching and Learning Policy)

The school uses a variety of teaching and learning styles in mathematics lessons, including active learning outside the classroom. We aim to develop children's knowledge, skills and understanding in mathematics through:

- whole class direct teaching with clear and progressive modelling of concepts and procedures with sequences of varied examples;
- the use of practical equipment and visual resources to support and deepen children's understanding;
- frequent rehearsal of core facts and strategies;
- effective questioning and rich mathematical talk;
- opportunities to reason and problem solve as a part of every maths lesson;
- planned differentiation in line with a mastery approach, where children requiring extra support are given time to consolidate their learning before moving on, and children who are confident are given opportunities to deepen their understanding, rather than accelerated on to the next year group's objectives;
- marking and feedback which addresses misconceptions and seeks to deepen children's understanding.

### **Mathematics curriculum**

#### **Foundation Stage**

Children are provided with opportunities to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems; and to describe shapes, spaces, and measures. Children explore, practise and talk confidently about mathematics through adult led activities, independent activities and child initiated learning, both indoors and outdoors. In planning, staff consider the individual needs, interests, and stage of development of each child.

## **Primary Stage**

Mathematics is a core subject in the Primary Curriculum, and we use this as the basis for implementing the statutory requirements of the programme of study for mathematics. The programmes of study for mathematics are set out year-by-year for key stages 1 and 2 and schools are required to teach the relevant programme of study by the end of the key stage.

Class teachers complete weekly plans for the teaching of mathematics following a medium term overview. They include specific learning objectives for each lesson. These plans are considered a working document to be annotated and amended as necessary. These plans will be monitored by the subject leader.

### **Key stage 1 – years 1 and 2**

The principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources [for example, concrete objects and measuring tools]. At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.

By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

### **Lower key stage 2 – years 3 and 4**

The principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers. At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw lines and shapes with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work. Pupils should read and spell mathematical vocabulary correctly and confidently.

## British Values

British Values are promoted through teaching and learning at Roman Way Academy in Maths as follows:

**The Rule of Law:** Children learn about rules in Maths when playing games. They understand how rules help to promote order and fairness.

**Democracy:** Children make decisions together when working in pairs or groups.

**Mutual Respect:** Children learn to listen to others when discussing methods, strategies and reasoning. They are taught to value contributions from others.

**Tolerance:** Children are taught to be aware that different people have different abilities, but all should be included and valued.

**Individual Liberty:** Children are given opportunities to make their own choices about how to tackle problems in maths and which resources to use.

## Cross Curricular Mathematics

Children are encouraged to use their mathematical skills in other subjects, such as when measuring in science, D&T or PE, using shapes in art and design or presenting data in computing. Regular active maths sessions are taught combining maths with PE.

### Learning resources, including display

Teachers provide resources to support and develop children's understanding and give opportunities to learn in a practical way. This includes the use of coins, tens frames, Dienes/base 10, bead strings, number lines, number cards, place value cards and counters. Resources should be well organised and clearly labelled for ease of access. Additional resources are available centrally.

All classrooms, excluding nursery, should have a dedicated Working Wall. These should be updated as the lesson sequence progresses, allowing children to refer back to previous learning.

Written work is introduced in Reception. In Years 1, 2, 3 and 4 work is recorded in A4 squared books. Work should be dated and given a learning objective as a title (see Marking, Feedback and Presentation Policy).

Maths books, working walls and the learning environment will be monitored by the subject leader.

Anna Dean

Subject leader

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