

# St Joseph's RC Primary School



## Maths Policy



November 2020

## Rationale

At St Joseph's we consider the teaching of Maths to be a vital element in preparing children for their future life. It is so important because:

- mathematics plays a part in all aspects of our lives and helps us to make sense of our world.
- It is essential to everyday life, critical to science, technology and engineering and necessary for financial literacy and most forms of employment.

### Aspects of Numeracy

Maths is a core subject in the National Curriculum. The main strands to be taught are

- **Number and place value**
- **Calculation** including addition, subtraction, multiplication and division, fractions
- **Measure**
- **Geometry**

## Aims/Objectives

Using the Programmes of Study from the National Curriculum the aims of mathematics are:

- To promote enjoyment and enthusiasm for learning through practical activity, exploration and discussion
- To create a lively, exciting and stimulating environment in which all children can learn Maths.
- Ensure the delivery of Maths is filled with cross curricular opportunities.
- To promote confidence and competence with numbers and the number system and to use mathematical vocabulary to reason and explain.
- To develop the 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.
- For children to challenge and stretch themselves and take risks in their learning

- To promote the concept that acquiring mathematical knowledge and skills provides the foundation for understanding Maths in everyday life.

### **Teaching for Mastery**

We began our journey in mastery in maths in 2017.. We started implementing mastery in year 1 and are now progressing this into all year groups in school.

St. Joseph's we intend to deliver Maths Mastery through a curriculum which teaches fluency, mathematical thinking and the use of manipulatives to enable and empower our pupils to develop a coherent knowledge and understanding of all aspects of Maths.

We aim to inspire pupils and foster a desire to learn multiplication table facts. We strive to encourage children to use sentence stems when answering questions to embed their knowledge and become fluent in maths.

Our Maths curriculum intends to help pupils become fluent, determined mathematicians, who can confidently explain their understanding and solve problems in all strands of maths.

### **Planning**

In our school, planning is in three phases - long-term, medium-term and short-term.

Long-term planning indicates the range of mathematical elements taught across each Key Stage.

Medium-term planning indicates an overview of the content and main teaching objectives for a particular unit of work. The key objectives are determined by the National Curriculum and non- statutory guidelines for Number, calculation, geometry and measure.

Short-term planning indicates specific content and lesson learning objectives, as well as resources to support the delivery of the lessons.

### **Cross Curricular Links**

Maths is an essential element for almost all learning that takes place within the school. The skills involved support learning in other areas, and are also further developed by activities in other curriculum areas. Our Commando Joe curriculum highlights many opportunities for our pupils to use maths in challenging purposeful ways linked to the topics being taught in each class.

Where possible, teachers at St Joseph's try to incorporate maths skills in meaningful contexts. This may be in the study of topics in other areas of the curriculum, or in follow-up activities related to activities, visits or visitors.

## **Teaching and learning styles**

### **EYFS**

Mathematics within the EYFS is developed through purposeful, play based experiences and will be represented throughout the indoor and outdoor provision. The learning will be based on pupil's interests and current themes and will focus on the expectations from Development Matters / Early Years Outcomes. Mathematical understanding can be developed through stories, songs, games, imaginative play, child initiated learning and structured teaching. As pupils progress, they will be encouraged to record their mathematical thinking in a more formal way.

### **Key Stage 1 Maths.**

The principal focus of mathematics teaching in key stage 1 is to ensure pupils develop confidence and mental fluency. The essential idea behind the mastery approach is that all children have a deep understanding so that future learning continues to build on solid foundations. Practical activities and resources offer the children a deeper mathematical understanding of more complex concepts. Providing children with visual representations also offers a scaffold when developing a more robust understanding of maths.

Throughout Key Stage 1, it is important that children gain a secure knowledge of number and place value and become confident when using the four operations in both formal methods as well as problem solving.

Alongside number work, pupils begin to identify fractions using shapes, objects and quantities and make connections to equal sharing and grouping. Pupils are taught to count in fractions, recognise equivalent fractions and develop their understanding of fractions on a number line.

At this stage, pupils will also develop their ability to recognise, describe, draw, compare and sort different shapes.

Pupils have the opportunity to use a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money and are expected to use related vocabulary for all topics. Other subjects may have strong links to some maths topics allowing cross-curricular teaching. For example, shape through art or computing, measures through science or coordinates in geography. This is to

ensure we continually maximise learning opportunities for all pupils across an entire curriculum.

## **Key Stage 2 maths**

Lower Key Stage 2 - Years 3-4. 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 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, our ultimate aim is for pupils to have memorised the majority of multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Upper Key Stage 2 - Years 5-6 The principal focus of mathematics teaching in upper Key Stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them. By the end of Year 6, our aim is that pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

## **Assessment, Recording and Reporting**

**Formative** assessment is used to guide the progress of individual pupils in Maths. It involves identifying the achievement of specific objectives for maths. This enables teachers to have a record of what each child has achieved, and to assess what should be the next steps in a child's learning. It is also used to inform teachers and parents of the level at which children are working.

Post assessments are used in number, calculation and fractions units and these help to inform future planning and teaching and show progress.

**Summative** assessments are used at regular intervals from Spring term in Y2 and throughout KS2, and are used to further determine the level at which individual children are working. These assessments are recorded on Target Tracker and monitor the progress of children between terms and across the year.

## **Special Educational Needs**

Within each group, teachers are aware that children are at different stages of learning and plan their work accordingly.

Within KS1 and KS2, assessment is used to inform teachers of children who may not be making expected progress, or who are falling behind their peers in levels of attainment. Where appropriate and possible, small groups of similar ability children may be regularly supported within class, or withdrawn for additional support. Intervention currently being delivered is: 'First response'. If children are still a cause for concern, they are referred to SEND co-ordinator who will consider whether a Pupil Support Plan is required or more specialist intervention is required.

## **Gifted and Talented**

The mission statement of St Joseph's talks of valuing the individuality of all our children. In our school we aim to provide a curriculum that is appropriate to the needs and abilities of all our children. We plan our teaching and learning in such a way that we enable each child to reach for the highest level of personal achievement. Children who

show exceptional ability in Maths will be challenged through further differentiation which will allow their needs to be met.

### **Monitoring of the subject**

It is the responsibility of the Maths subject leader and Headteacher to monitor planning, standards of children's work, quality of marking, and quality of teaching in Maths. The subject leader is also responsible for supporting colleagues in the teaching of Maths, for being informed about current developments in the subject, and for providing a strategic lead and direction for the subject in the school.

The subject leader gives an annual report to the Headteacher for Governors, evaluating achievements in the subject, and indicating any areas for development. Where possible, the subject leader is given time for monitoring of the subject through lesson observations, work scrutinise, analysis of data and discussions with pupils. A named member of the school's governing body is briefed to oversee the delivery of Maths. This governor meets annually with the subject leader to review progress.

Reviewed and updated by A Johnston, Maths lead

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