

# Walmsley C.E. School

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## Mathematics Curriculum Statement

Date Drafted	September 2019
Policy Written By	Rachel Saxby and Mel Ratcliffe
Date Approved by Governors	February 2020
Date Reviewed	September 2022
Date of Next Review	September 2023
Responsible Committee	School Effectiveness

## **Mission Statement**

As a school we pledge to:

...be a happy school where pupils are encouraged and challenged to reach their full academic and social potential in a creative, friendly and safe Christian environment

...work as a partnership with pupils, their families, staff and the wider community to provide an environment of honesty, responsibility and integrity

...give ownership of the opportunities presented to the school family thus enabling them to reflect on their time at Walmsley with pride

## **Statement of Intent**

At Walmsley Primary School, we want all our children to believe that they can succeed in maths. We aim to develop a love of, and an enthusiasm for maths where children feel confident to explore and investigate mathematical concepts, and have the mathematical fluency, language and tools available to them to explain their thinking. We want children to discover concepts for themselves and develop a really thorough understanding where they make connections, reason logically and think in abstract ways. We encourage children to become resilient learners where they strive to be the very best they can be, and understand that hard work and determination leads to success.

We are committed to provide appropriate support and challenge so that all children can reach their very highest potential in maths. We celebrate all children's learning, and we hope children discover that by making mistakes and reflecting on them, they are developing their understanding of maths. We endeavour to ensure that the mathematical skills children develop at Walmsley empowers them in many areas of their everyday life, and across the curriculum. Finally, we hope that the interest and enjoyment in maths they develop continues long after they leave us at Walmsley.

## Introduction

This policy outlines the teaching, organisation and management of the mathematics taught and learnt at Walmsley CE Primary School. This document is intended for all staff with classroom responsibilities, school governors, parents, inspection teams, LEA advisors and interested others. Copies are provided to school staff and the governing body.

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.

## Principles of Teaching for Mastery

All children are encouraged to believe that by working hard at maths they can all succeed. Pupils are often taught through whole-class interactive teaching, where the focus is on all pupils working together on the same lesson content at the same time. This ensures that all can master concepts before moving to the next part of the curriculum sequence, allowing no pupil to be left behind. Support is available for children who need it, such as through the use of equipment, resources, mathematical models or teacher / teaching assistant intervention. Deeper challenge opportunities are available when and as children need them, such as through reasoning and problem solving, being asked to explain their thinking, or asking to provide alternative methods. There are five key or "Big Ideas": Representations and Structure, Mathematical thinking, Fluency and Facts, Variation, and Coherence. If a pupil fails to grasp a concept or procedure, this is identified quickly and early intervention ensures the pupil is ready to move forward with the whole class.

## Teaching time

To provide adequate time for developing mathematical skills each class teacher will provide a daily mathematics lesson. This may vary in length but will usually last for about 45 minutes to 1 hour in Key Stage 1 and 60 minutes in Key Stage 2. Cross-

curricular links will also be made to mathematics within other subjects so pupils can develop and apply their mathematical skills.

### **Preparation and Planning**

Year 1 to 6 follow White Rose Mathematics Long Term planning and Small Steps planning and they adapt it for the needs of their class. They follow the Long Term Planning and the Medium Term Planning as suggested by White Rose, but should be allowed the freedom to adapt this planning to best suit the needs of their class. Lesson design identifies the mathematics that is to be taught, the key points, the difficult points and a carefully sequenced journey through the learning. A CPA (concrete, visual, abstract) approach is always considered and incorporated into the lesson design.

### **Text Books and Teacher Resources**

All classes have Target Your Maths along with a variety of other textbooks and teaching resources which supplement the resources used by teachers to deliver lessons. White Rose Mathematics also have a variety of varied fluency, reasoning and problem solving questions which teachers can use with their children. Year 1-4 have Maths No Problem text books that they can refer to. Whilst these text books are likely to be used in a significant proportion of lessons, teachers will also use other textbooks and other resources as and when they feel they need to. On the school network, there are a number of other resources that staff can use to develop their teaching and learning: Ready to progress powerpoints, NCETM Mastery materials and the 2020 DFE guidance.

Core visual **representations** are used across the school to allow children to develop their understanding through a pictorial approach to maths.

### **Recording of Children's Work**

Children in Year 1-6 record their work in a maths book. These should be a place where children can record their thinking, explanations, methods and reasoning in any format they feel is suitable. They can also record their answers to more formal questions set by their teacher.

### **Teaching**

In a typical lesson pupils sit facing the teacher and the teacher leads back and forth interaction, including questioning, short tasks, explanation, demonstration, and discussion. Procedural fluency and conceptual understanding are developed in tandem because each supports the development of the other.

During some lessons, children will spend a proportion of the lesson working independently, so that time is given to those children who need intervention by the teacher.

Significant time is spent developing deep knowledge of the key ideas that are needed to underpin future learning. The structure and connections within the mathematics are emphasised, so that pupils develop deep learning that can be sustained.

Fluency style questions may also be practiced within, or outside a lesson, such as key multiplication tables and addition facts within 10. This is to encourage automaticity to avoid cognitive overload in the working memory and enable pupils to focus on new concepts. Children are also given the opportunity to revisit and build upon prior learning e.g. White Rose Flashbacks (on network), 5 a day, arithmetic homework books.

### **Marking and Feedback**

Marking and evidence-recording strategies should be efficient, so that they do not steal time that would be better spent on lesson design and preparation. Neither should they result in an excessive workload for teachers.

It is important for teachers to distinguish between a pupil's simple slip and an error that reflects a lack of understanding. Slips should be corrected/addressed where appropriate, errors can be addressed through the daily intervention or picked up in the next lesson.

Pupils benefit from marking their own work. Part of this responsibility is to identify for themselves the facts, strategies and concepts they know well and those which they find harder and need to continue to work on. In the children's maths books, teachers should check over their work and provide feedback, positive comments and identify any misconceptions where appropriate.

It should not be a routine expectation that next-steps or targets be written into pupils' books. The next lesson should be designed to take account of the next steps. Teachers may decide to provide a question to reinforce/check understanding as they see fit.

### **Equipment**

To allow for a Concrete, Pictorial, Abstract approach to Mathematics, each class is resourced with a large amount of equipment, such as Base 10, place value counters, tens frames, number lines, fractions etc. Maths equipment can be found in classrooms readily available for children as and when they need it.

### **Homework**

Homework is set weekly in mathematics, in both Key Stages. This usually consists of a page from CGP Arithmetic book. Timestable Rockstars are also set from Y2-Y6. Year 1 also have number bonds work set on alternate weeks.

## **Parent-School Links**

Parents are invited to an Induction evening during September, when they are invited to come and meet their child's new class teacher, and provided with information about the curriculum in that Year group, key objectives and age-related expectations where the maths curriculum and the approach we take is discussed. There is also a parents evening early in the Spring term, when parents can find out about the progress their children are making, targets for further learning, and ways in which they can help with this at home. In July a written report is sent home with detail about progress and performance in mathematics.

## **Links between mathematics and other subjects/ daily life.**

Mathematics contributes towards many subjects within the primary curriculum and where possible opportunities will be sought to draw mathematical experience out of a wide range of activities. This will allow children to begin to use and apply mathematics in real contexts. In lessons, we will also use everyday contexts to frame some of the concepts we are discussing with the children so that they can relate to the use of math in daily life.

## **How we cater for children with special educational needs**

All pupils are included in the daily mathematics lessons and have experience of direct, interactive and lively teaching appropriate for their age and stage of development. Teachers use a variety of teaching styles in order to cater for the various learning styles of children e.g. using music to enhance learning times-tables. During the interaction with the teacher, a mixture of questions will be directed at the whole class and some questions pitched specifically at particular groups or individuals within the class, in order to ensure the involvement of all pupils. SEND pupils will aim to stay within the daily maths lesson working on the same concept as their peer but with appropriate support, such as TA support, concrete equipment, working at a lower level within that concept.

However a pupil whose difficulties are severe or complex may need to be supported with an individualised programme in the main part of the lesson, and may work outside the classroom for part of the lesson.

## **How we work in the Foundation Stage**

The reception class is organised to promote social skills and the development of mathematical language and understanding. Teaching is based on the Early Learning Goals (Number and Number Pattern) and is assessed by using the Foundation Stage Profile. This will prepare the children for starting the National Curriculum in Year 1. Usually the organisation will be planned as follows;

- An introduction with the whole class.

- Teaching of the whole class on the main mathematics topic for the day;
- Group activities, including teacher-led activities, independent activities and individual choice of various independent play activities.

Either for everyone in small groups simultaneously.

- A plenary with the whole class after the group activities have ended, to consolidate and extend through discussion and questioning what they have been learning and to praise progress.
- Continuous provision in the setting will be planned to extend and develop the children's mathematical learning.

### **Mastering Number Programme**

In addition to the daily maths lesson, Reception and KS1 deliver the NCETM Mastering Number Programme to their classes. This project aims to secure firm foundations in the development of good number sense and fluency for all children. The aim over time is that children will leave KS1 with fluency in calculation and a confidence and flexibility with number.

### **Assessment**

Assessment will take place at three connected levels: short-term, medium-term and long-term. These assessments will be used to inform teaching in a continuous cycle of planning, teaching and assessment.

Short-term assessments will be an informal part of every lesson to check their understanding and give teachers information, which will help teachers to adjust day-to-day lesson plans and identify children who need intervention. Key questions will be used to measure the children's success.

Medium-term assessments or review lessons will take place in each half term or at the end of a unit of work, as appropriate, and will assess some of the key objectives that have been covered.

More formal assessments take place on October and May where Y1-5\* sit NFER arithmetic and reasoning papers. The results of these tests are kept on our tracking system and are scrutinised throughout the year to identify children who may need additional support or challenging further, and to monitor progress and attainment over the year compared to previous years. Teachers will also draw upon their knowledge of the performance of their class against key learning indicators of performance and supplementary notes to produce a summative record. This information will then be reported to parents and the child's next teacher. Children in Year 6 complete several SAT past paper tests leading up to their SATs in May. All results of these 'mock' assessments are analysed to identify the progress

and attainment of children, and they help identify children in need of extra support, such as support lessons/ 1:1 /small group work outside of the daily maths lesson.