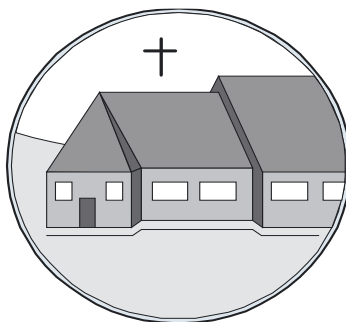


# Maths Policy



Fritchley C.E. Aided  
Primary School

Date of Issue: March 2021

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**Audience:** Staff/Governors/Public

**Frequency of Review:** Every two years

**Recommended associated documents:**

Calculation Policy

## **1. THE NATURE OF MATHEMATICS**

**1.1** Mathematics is a creative and highly inter-connected 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. (National Curriculum 2014)

**1.2** The purpose of mathematics in our school is to develop:

- a positive attitude towards mathematics and an awareness of the relevance of mathematics in the real world
- competence and confidence in mathematical knowledge, concepts and skills
- an ability to solve problems, to reason, to think logically and to work systematically and accurately.
- initiative and an ability to work both independently and in cooperation with others
- an ability to communicate mathematics
- an ability to use and apply mathematics across the curriculum and in real life
- an understanding of mathematics through a process of enquiry and experiment
- a sense of curiosity that allows discovery of new concepts

## **2. BREADTH OF STUDY**

**2.1** Through careful planning and preparation we aim to ensure that throughout the school children are given opportunities for:

- practical activities and mathematical games
- problem solving
- individual, group and whole class discussions and activities
- open and closed tasks
- a range of methods of calculating e.g. mental, pencil and paper and using a calculator
- working with computers as a mathematical tool

Through our creative curriculum approach we also seek to explore and utilise further opportunities to use and apply mathematics across all subject areas.

## **3. TEACHERS PLANNING AND ORGANISATION**

**3.1** Each class teacher is responsible for the mathematics in their class in consultation with and with guidance from the mathematics subject leader. The approach to the teaching of mathematics within the school is based on three key principles:

- a mathematics lesson every day,
- a clear focus on direct, instructional teaching and interactive oral work with the whole class and targeted groups,
- an emphasis on mental calculation,

Each class organises a daily lesson of 60 minutes for mathematics, apart from EYFS where the children learn through a mixture of adult led activities and child-initiated activities both inside and outside of the classroom.

**3.1.1** A typical lesson structure in Year 1 -6 is given below, but it is understood that there will be times when this may be need to be adapted to suit the needs of the learners:

### **Oral work and mental calculation**

This will involve whole class work to Rehearse, Recall, Refresh, Refine, Read and Reason mental and oral skills and key objectives.

### **The main teaching activity**

This will include both teaching input through modelling/mirroring and pupil activities and also include a balance between whole class, guided group work, paired and individual work. Use of open-ended questioning and challenge are very important to us as well as children having the opportunity to explain strategies to learning partners and the teacher.

Children may work in mixed or ability groups according to the intended learning outcome. Children will have differentiated success criteria ladders for each activity which allows for self and teacher assessment.

### **Plenary**

This will involve using a variety of AFL strategies. The whole class will refer back to the learning objective and success criteria to help address misconceptions, identify progress, summarise key facts and ideas and clarify what needs to be remembered and to discuss next steps for learning.

## **3.2 Teaching strategies**

In order to provide the children with active and stimulating learning experiences, a variety of teaching and learning opportunities are adopted:

- Children may work individually on a task, in pairs or in a small group, depending on the nature of the activity.
- Wherever possible practical 'real' activities and problem solving are used to introduce concepts and reinforce learning objectives.
- Opportunities to transfer skills learnt, to real situations, are used whenever possible.
- Activities are planned to encourage the full and active participation of all pupils.
- Teachers differentiate tasks and provide challenges throughout the lesson in order to meet the needs of all abilities and personalities.
- Quiet and less confident children (particularly girls) are encouraged to speak out.
- Teachers place a strong emphasis on correct use of mathematical language; this is supported by key vocabulary being displayed.
- Teachers value pupils' oral contributions and create an ethos in which all children feel they can contribute – strategies used to promote inclusion of all.

## **3.2 Long term planning**

The National Curriculum (N.C.) for Mathematics 2014, Development Matters and the Early Learning Goals (Number, Shape Space & Measure) provide the long-term planning for mathematics taught in the school. This is alongside the school's focus on 'The five keys' which are the non-negotiables of learning maths extracted from the N.C. and are the focus of key sessions throughout each week (see appendix 1).

## **3.3 Medium term planning**

Years 1-6 use a mixture of White Rose Maths and Rising Stars Medium Term Planning Documents as its medium-term planning. EYFS planning is based on Development Matters and the Early

Learning Goals (Number, Shape Space & Measure). In addition, teachers' gap analyse from summative assessment are used alongside this to plan guided groups.

### **3.4 Short term planning**

Lessons are planned using a common planning structure and are collected and monitored by the mathematics subject leader.

EYFS planning is based on the medium-term plans and delivered as appropriate to individual children with thought to where the children are now and what steps they need to take next.

## **4. SPECIAL EDUCATIONAL NEEDS**

**4.1** The daily mathematics lessons are inclusive to pupils with special educational needs. Where required, children's Multi-Element Plans incorporate suitable SMART targets linked to objectives from the New National Curriculum for Mathematics or Development Matters. Teachers plan activities to support these objectives. These targets may be worked upon within the lesson as well as on a 1:1 basis outside the Mathematics lesson. Maths focused intervention programmes are available in school to help children with gaps in their learning and mathematical understanding. These are delivered on a 1:1 basis by trained support staff and overseen by the class teacher.

Within the daily mathematics lesson teachers must not only provide differentiated activities to support children with special educational needs but also activities that provide appropriate challenges for children who are high achievers in mathematics. It is vital that all children are challenged at a level appropriate to their ability.

## **5. EQUAL OPPORTUNITIES**

**5.1** We incorporate mathematics into a wide range of cross-curricular subjects and seek to take advantage of multi-cultural aspects of mathematics. We ensure that all children are able to fulfil their potential regardless of race, religion, disability or gender.

## **6. PUPILS' RECORDS OF WORK**

**6.1** Children are taught a variety of methods for recording their work and they are encouraged and helped to use the most appropriate method of recording. Children are encouraged to use mental strategies before resorting to a written method. All children are encouraged to work tidily and neatly when recording their work. When using squares one square should be used for each digit.

**6.2** In Year 1, 2cm squared exercise books are to be used progressing to 1cm squared in Years 2 &3. This changes to 7mm square exercise books in Year 4 through to Year 6.

**6.3** EYFS record informally within the setting. For example:

- on the playground
- on whiteboards
- using jigsaws
- physically ordering numbers

Staff in Foundation also collect written evidence and photos to ensure records of each child's achievements are maintained.

## **7. MARKING**

**7.1** Marking of children's work is essential to ensure they make further progress. All work is marked against success criteria, in line with the school marking policy, and includes next steps. Work is to be marked once completed, before a child starts the next piece of work in accordance with the school marking policy. The quality of marking is crucial, children are encouraged to self-assess their work and given time to read teachers' comments and to correct, consolidate and challenge (Think Pink). Work in mathematics can generate a great deal of marking and it is recognised that it is not always desirable to mark every piece of work. The children themselves can mark exercises which involve routine practice with support and guidance from the teacher – particularly in Year 5 and 6.

For further information see the school marking and feedback policy.

## **8. ASSESSMENT AND RECORD KEEPING**

**8.1** Teachers make regular assessments of each child's progress and record these systematically. A record of each child's attainment against the key objectives for the appropriate year group is recorded and kept and the back of their 'Reasoning Book'.

### **8.1.1 Short term (Summative)**

Children's class work is assessed frequently through:

- regular marking
- analysing errors
- questioning
- discussion
- plenaries
- playing alongside
- pictures
- play challenges (EYFS)

This is used to inform future planning and teaching. Lessons are adapted readily and short term planning is evaluated and annotated in light of these assessments.

In the Early Years Foundation Stage, maths is underpinned by the Characteristics of Effective Learning. Child initiated learning opportunities are cross-curricular and children experience a wide range of open-ended problems and resources, both indoors and out.

### **8.1.2 Medium term (Formative)**

(Year 1-6) Half-termly assessments are carried out across the school using assessment materials for each year group. These materials are used alongside judgements from class work to form a teacher assessment for each child. These judgements are then fed into the whole school tracking system.

#### **8.1.2.1 EYFS**

On-going formative assessment is at the heart of effective early years practice. (Development Matters in the EYFS 2012). The Early Years teacher observes children as they act and interact in their play, everyday activities and planned activities, and learns from parents about what their children do at home (observation). These observations contribute to our assessments of the children which are tracked using the Development Matters Record/ Early Learning Goals Grid. Vulnerable children are identified who have not made sufficient progress or who are below ARE. New learning targets are set and quality first teaching implemented to support and progress learning through objective led planning and continuous provision

### **8.1.3 Long term**

Year 2 and Year 6 complete SATs assessments every May. Year 3, 4 and 5 complete optional end of

year tests during the summer term.

## **8.2 Targets**

Teachers use gap analysis from half termly tests, the Rising Stars Pathway assessment grids and pupil discussion to identify targets for children. These targets are shared with parents/carers at parents' evenings and written on each child's end of year report. Targets are also shared with the children and updated half termly.

## **9. REPORTING TO PARENTS AND PARENTAL INVOLVEMENT**

**9.1** Reports are completed before the end of the summer term and parents are given opportunity to formally discuss their child's progress at two parents' evenings in the autumn and spring terms. Parents can make an informal appointment to discuss their child's progress at any time over the school year. Parents are encouraged and offered support and guidance to support their children's learning of mathematics.

## **10. MONITORING AND EVALUATION**

**10.1** The mathematics subject leader monitors and evaluates the teaching of mathematics across the school each term. Any observations are undertaken by the SLT and are in line with the school improvement plan.

## **11. STAFF RESPONSIBILITIES**

### **11.1. Headteacher**

- support the mathematics subject leader in taking mathematics forward
- ensure that arrangements are made to meet the training needs of teachers and other adults involved
- manage the school's allocation of resource funding, including leadership time
- observe the teaching of Mathematics across the school

### **11.2 Mathematics Subject Leader**

- lead, manage and monitor the development of mathematics in the school
- carry out annual audits, set targets, review the action plan and monitor its progress
- ensure parents are informed and involved
- monitor the teaching of maths throughout the school through scrutiny of planning/Maths books in every class (informing the head teacher of findings)
- liaise with the headteacher regarding her observations of the teaching across the school
- prepare, review and implement school policy documents and guidelines taking into account the recommendations of the New National Curriculum.
- liaise with staff in school – working alongside them giving guidance and support.
- introduce, organise and maintain the school's mathematics resources.
- take responsibility for own professional development by attending courses and keeping up-to-date with current developments within mathematics education.
- take responsibility for staff CPD.
- liaise with mathematics subject leaders in other schools through attendance of local network meetings.
- provide an example to the school by taking a lead in teaching mathematics and classroom organisation.

- maintain contacts beyond school with numeracy co-ordinators, advisory staff and other outside agencies.
- ensure equality of opportunity for all pupils.

### **11.3 Class Teachers**

Class teachers are responsible for the planning, teaching and assessment of the daily mathematics lesson and the organisation of additional adults in the classroom. They are also responsible for implementing the contents of this policy within their classroom.

### **11.4 Support Staff**

HLTAs and TAs that work with the children support the teaching of mathematics under the direction of the class teacher and Special Educational Needs co-ordinator.

### **11.5 Governing Body**

We have an identified Maths governor. The Maths governor (?????) is invited to visit school termly to talk with the subject leader when possible. The Maths governor reports back to the Teaching, Learning and Community committee on a regular basis.

## **12. STAFF DEVELOPMENT**

**12.1** All staff are encouraged to develop, assess and improve their teaching of mathematics.

Whenever possible we:

- encourage staff to attend mathematics courses
- make provision for the mathematics subject leader to work alongside colleagues in the classroom or shared areas
- provide school based INSET
- involve staff with policy and decision making
- provide the opportunity to learn from colleagues' expertise
- encourage parental involvement at home and in school based workshops with their children

## **13. RESOURCES**

**13.1** All teachers should organise an area within the classroom dedicated to mathematics resources. This area is easily accessible to all children and allows them to become familiar with all resources. There should also be a working wall area within every classroom that the children can access. This needs to be updated regularly in accordance with the area of maths being taught at the time. Resources which are not used or required regularly are stored centrally in the resources room and are clearly accessible, labelled and stored safely.

### **13.2 Computing**

Mathematics is taught through computing where it is appropriate and where the use of computing enhances or supports the teaching and learning. This could be in the classroom using a single computer, in the computing suite or using the interactive whiteboard.

### 13.3 Contribution of Maths to teaching in other curriculum areas

Mathematics is a tool for everyday life. It is a network of concepts and relationships and is used to analyse and communicate information and ideas in practical tasks and problems. By making links to other subjects at the initial planning stage we aim to provide real context in which to apply skills taught during the maths lessons.

## 14. HOMEWORK

**14.1** It is our school policy to provide parents and carers with opportunities to work with their children at home. We recognise the importance of making links between home and school and encourage parental involvement with the learning of mathematics. Homework will provide opportunities for the children to consolidate their knowledge and skills, as well as develop their understanding. These activities may only be brief, but are valuable in promoting children's learning in mathematics. Activities are sent home to children in years 1 to 6 on a weekly basis as part of our home learning challenges. These can take the form of games, activities or quick written tasks.

Other Relevant Policies

Marking & Feedback  
Policy

Calculations Policy  
SEN policy

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# 5 Maths Keys to overcome barriers to Confident Mathematicians

## Reception:

- + and –
- Place value – ones, tens, hundreds
- Anchoring to 10 – number bond to 10
- 2x, 10x, 5x tables – Commutability
- Problem solving every week

## Year 1/2

- Methods - more than 1 – remove glass ceiling
- Place Value – Ones, Tens, Hundreds, Thousands
- Anchoring to 10 – Counting back and forwards
- 5x and 3x tables – Commutability
- Problem solving strategies and applying every week

## Year 3/4

- Different methods that makes sense + -  $\times$   $\div$  (remove glass ceiling)
- Place Value – Ones, Tens, Hundreds, Thousands, Tth, Hths.
- Anchoring to 10 – count back in multiples
- 4, 6, 7, 8, 9 Key Facts
- RUCSAC Method for problem solving & applying every week

## Year 5/6

- $x \div$  by 10,100, 1000 – Place Value
- A method for the four operations
- Problem solving strategies – RUCSAC
- Doubling & halving – Anchoring to 10
- 21 facts (times tables)
- 5 Maths Keys up in EVERY classroom
- Multiplication grid in Maths books except Reception – they need to put 2x 5x 10x in their books.