St Anne's C of E Primary School

Mathematics Policy

1. Introduction

This policy outlines the teaching, organisation and management of the mathematics taught and learnt at St Anne's CE Primary School. The school's policy for mathematics is based on the 2014 National Curriculum . Its implementation is the responsibility of the whole teaching staff and monitoring of it is the responsibility of the Senior Leadership Team, Mathematics Subject Leader and Governing Body.

2. Mathematics: Purpose of Study

A high-quality mathematics education provides a foundation for understanding the world, the ability to reason mathematically, and a sense of enjoyment and creativity over the subject. 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 necessary to everday life; critical to science, engineering and technology; and essential to most forms of employment.

3. Intent

The 2014 National Curriculum for Maths aims to ensure that all children:

- Become fluent in the fundamentals of Mathematics
- Are able to reason mathematically
- Can solve problems by applying their Mathematics

At St Anne's, these skills of fluency, reasoning and problem solving are embedded within Maths lessons from EYFS to Year 6 and developed consistently over time. We are committed to ensuring that children are able to recognise the importance of Maths in the wider world and that they are also able to use their mathematical skills and knowledge confidently in their lives in a range of different contexts. We want all children to have a toolbox of mental and written strategies at their fingertips so that they can use maths functionally as adults. We want children to enjoy Mathematics and to experience success in the subject, with the ability to reason mathematically. We are committed to developing children's curiosity about the subject, as well as an appreciation of the beauty and power of Mathematics.

4. Implementation

The content and principles underpinning the 2014 Mathematics curriculum and the Maths curriculum at St Anne's convey how our curriculum is implemented:

- Teachers reinforce an expectation that all children are capable of achieving high standards in Mathematics.
- The large majority of children progress through the curriculum content at the same pace; differentiation is achieved by emphasising deep knowledge and through individual support and intervention- eg same-day intervention and pre-teaching where gaps are identified. Our skills progression grid is fundamental to this as it guides staff in ensuring that all stepping stones to mathematical understanding are solid so that a child can move forward in their learning. Teachers and TAs use precise questioning in class to test conceptual and procedural knowledge and assess children regularly to identify those requiring intervention.
- To ensure curriculum coverage and progression, we use the *White Rose* materials as a basis for our learning but encourage staff to use cross-curricular links and other rich learning materials to enhance experiences and understanding- examples include *NRICH, NCETM reasoning materials*, *Maths No Problem* and *I see reasoning*. We use the calculation policy that supports the *White Rose* materials to ensure that fluency develops in a consistent way.
- Use of manipulatives is essential to our practice: in each classroom you will see BUILD IT- SAY IT- DRAW IT- WRITE IT- LINK it on a working wall- the aim of this is to support children with their learning journey in at any given point and also to act as a structure to ensure that concrete experiences of maths are fundamental to the development of understanding- for example the use of tens frames in reception and the use of the bead string in Y6 to understand decimals.
- Scaffolds for the understanding of number are also a key part of our practice: for example splitting the number 6 into 2 or 3 parts as a part-part-whole in EYFS or using the bar model to solve problems as the pupils move through KS1 and 2.
- We have a blocked approach to mathematical subjects to ensure deep understanding. Alongside this, we have a daily 15 minute arithmetic session in each class- this is used to revisit key arithmetic skills eg Tables in Years 2-4, to recap topics from previous weeks and to look at 'Maths Eyes' problems.
- We have invested significantly in mathematics resources in recent years and aim that the progression of visual mathematical stimuli in the classroom reflects the progression of learning as a child moves from EYFS to Year 6. Outdoor mathematical learning is a key feature of EYFS and is included as part of mathematical experiences throughout the rest of the school where possible.

<u>EYFS</u>

The programme of study for the Foundation Stage is set out in the EYFS framework. Mathematics involves providing children with opportunities to develop and improve their skills in counting; understanding and using numbers; calculating simple addition and subtraction problems; and to describe shape, space and measures.

<u>Key Stage 1- Years 1 and 2</u>

The principal focus of mathematics teaching in Key Stages 1 and 2 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This includes working with numerals, words and the four operations including with practical resources. At this stage they should also develop their ability to recognise, draw , compare and sort different shapes and use the related vocabulary. Teaching also involves the use of a range of measures to describe and compare different quantities such as length, mass, time and money. Pupils should also read and spell mathematical vocabulary at a level consistent with their increasing word reading and spelling knowledge at Key Stage 1.

<u>Lower Key Stage Two : Years 3 and 4</u>

In these years we focus on ensuring that pupils become increasingly fluent with whole numbers up to 999 and the four operations and start to develop efficient written and mental methods. At this stage, pupils also develop their ability to solve a range of problems including with fractions and decimal place value. Teaching should ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties and describe the relationships between them. They should also learn to use measuring instruments with accuracy and connect measure and number. By the end of Year 4, all pupils should aim to have memorised mulitiplication tables to 12x12.

Upper Key Stage Two: Years 5 and 6

At this point at St Anne's, pupils' understanding of the number system is extended to numbers up to ten million and pupils are taught to use efficient methods for all 4 operations for whole numbers, decimal numbers and fractions. Areas such as ratio and proportion and algebra are also covered as well as a range of geometry , shape and statistics work – examples include pie charts, line graphs and angles within polygons.

How we cater for children who are more able

Mathematics is taught to children within their own class group with optional greater depth tasks where appropriate. When working with the whole class, teachers will direct questions towards the more able at their own ability level to maintain their involvement and extend their thinking.

How we cater for pupils with additional needs

Concrete and visual materials are available for all children and teaching is differentiated so that all children in a class access the lesson focus at a level appropriate to them. Support may be given in terms of scaffolding, resourcing, adult support or pre-teaching/ post- teaching and contributions from all are valued. Where appropriate, additional group focus sessions are detailed on the class provision map and children are given a short-term intervention to help them improve skills and confidence in a certain area of mathematics.

Inclusion and equal opportunities

All children are provided with equal access to the mathematics curriulcum. We aim to provide suitable learning opportunities regardless of gender, ethnicity or home background.

5. **Impact**

The school has a supportive ethos and our approaches support the children in developing their collaborative and independent skills, as well as empathy and the need to recognise the achievement of others. Regular and ongoing assessment informs teaching, as well as intervention, to support and enable the success of each child and all teachers record pupil's attainment on the *Herts for Learning Grid* at the end of each term. In statutory year groups, this assessment works alongside the National Curriculum Assessment criteria. We aim that every child can make good self-referenced progress in mathematics and have strong termly tracking systems and Pupil Progress Meetings where SLT challenges and helps to develop support given to any pupils at risk of falling behind. Where analysis reveals group trends, the Maths Subject Leader works with individual or groups of staff to redress imbalances.

6. Cross Curricular

At St Anne's, opportunities to extend and promote mathematics are sought across the curriculum – for example, with the use of statistics to record the results of a science experiment or symmetry in art. The prime focus, however, remains on the quality of good mathematical progress whether delivered as a discrete mathematical session or linked with another subject.

7. **Pupil records of their work**

There are occasions when it is not always necessary to record mathematics in a permanent form but there are also occasions when it is both quick and convenient to carry out written calculations. It is also important to record aspects of mathematical investigations. Children are taught a variety of methods for recording their work and they are encouraged and helped to use the most appropriate and convenient method of writing. They are encouraged to use mental strategies before resorting to a written algorithm so recording work may involve rough jottings first followed by recording work for the teacher's attention.

8 Marking and presentation

Teachers are expected to adhere to the school's marking policy when reviewing books. Books need a daily LI on a label (written in Year 6) and a 'short date' (eg. 5.5.22) and in Key Stage 2 a margin of 2 squares should be drawn. Pencil only should be used and pink pen used for pupil marking, purple for teacher marking. All pupils should put only one digit in a square.

9 Home learning

In line with school policy, 'sneaky peeks' and corresponding quizzes should be placed on Google Classrooms each week- mathematics needs to be on this rota 3-4 times a term. Children are also encouraged to go on our online- learning platforms numbots/ TT Rockstars for at least 20 minutes a week and their work on this is celebrated with housepoints.

10. Information Communication Technology

ICT is used in various ways to support teaching and motivate children's learning when it is the most efficient and effective way of delivering the lesson objectives. Calculators are not used as a substitute for good written and mental arithmetic but as a way in Upper Key Stage 2 of supporting conceptual understanding and exploration of more complex number problems if written and mental arithmetic are secure.

11.**Assessment**

Formative assessment takes place in each daily lesson through use of the lesson evaluation form where pupils who had particular gaps are noted for further support and where whole class issues are highlighted to review the next day.

Each term, teachers assess pupils' progress using the Herts for Learning System and record this on Arbor: they use a variety of materials such as Cambs Diagnostic Assessment materials, White Rose Assessments, sample end of Key Stage test papers, Testbase and Star Maths to help inform these judgements as well as notes made on the aforementioned lesson evaluation forms.

Date of policy: June 2022 Date of Review : June 2024