St. Giles CE Primary School
Achieving through adventure

Mathematics: Intent and Implementation

Aims

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 no routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Alignment to the curriculum

St Giles' maths curriculum begins in EYFS (Early Years Foundation Stage) with the Mathematics strand from the Statutory Framework. The school follows the Power Maths scheme of learning, which is fully aligned to the National Curriculum's aims of fluency in fundamentals, reasoning mathematically and problem solving. The scheme follows a mastery approach: teaching focuses on number sense; teachers stay within the required key stage and follow the idea of depth before breadth; the scheme ensures students can stay together as a group; there are plenty of opportunities to build fluency, reasoning, and problem-solving elements into the curriculum.

End points

Teaching is ambitious in all year groups and the scheme of learning is designed to take children to greater depth within the statutory assessment frameworks. Our aim is that all children should become confident mathematicians who have the clearly identified fluency skills to approach, reason and solve a range of problems, preparing them well for the next key stage of their education.

Sequencing

Power Maths scheme of learning is carefully sequenced so that each unit block follows on from the previous year's learning. The progression document from Power Maths shows the progression of knowledge and specifies where concepts were previously taught, to enable teachers to plan for the retrieval of prior knowledge. This enables pupils to 'master maths' by consistently building on previous learning.

In addition:

- we have identified the key instant recall facts which we want all of our children to have automatic recall.
- This includes times table fluency.

Teaching for all

A key principle of our teaching is that every child can engage with the curriculum for their year group. Pre-teaching and same day or in-lesson interventions are used to ensure that all children are included and engage with the key learning. If appropriate, additional support such as individual and small group intervention is put in place for those who require further support. To ensure a consistent and thorough provision for those who require addition support, TAs deliver Rapid Maths interventions in small groups.

IMPLEMENTATION

Pedagogical Approach

Maths lessons begin with fluency activities, designed to practise retrieval of key facts. This happens daily:

- Class 1 children focus on 3 in 3, 3 fluency questions in 3 minutes,
- this then moves onto 5 in 5 in Class 2,
- 6 in 6 in Class 3 and
- 12 in 12 in Class 4.

Fluency includes multiplication and division facts, key addition and subtraction skills, telling the time and key fractions and decimals knowledge. These are the fundamental fluency skills that are required for children to confidently access further mathematical learning as they go into UKS2 and beyond.

Fluent recall of multiplication and division facts are crucial for children to be able to access other areas of maths and daily practise of multiplication happens throughout the school through fluency practise or verbal / choral warm ups. From Year 2 onwards, children work on specific multiplication checks, tracking of knowledge of these multiplication facts, with specific markers used to show age related expectations.

A weekly multiplication challenge takes place every Friday as fluency practise in Years 2-6.

TT Rockstars is also used to promote practise at home and as a way of practising fluency within school. TTR Battles are held between the Matlock and Dales partnership schools to encourage enthusiasm and make multiplication fluency fun.

Teachers' Knowledge

Teachers and TAs, who deliver lesson content, are provided with a range of resources to support subject knowledge. Power Maths online resources include teaching slides and planning which can be used to inform and develop teachers' explanations of key concepts. All these resources include key language, sentence stems and key questions created to push learners on to the next stage of their learning.

Promoting Discussion and Understanding

Lessons are planned carefully to ensure that children are exposed to a range of representations of concepts and problems. Task design reflects this range of representation, and ensures that all children are exposed to fluency, problem-solving and reasoning questions. Tasks are carefully designed using scaffolding strategies so that all children can access the task confidently. Regular discussion tasks are built into lessons to allow children to articulate their thinking and to develop their language skills.

Maths lessons provide the opportunity for children to use concrete and pictorial resources to represent a concept or practise a newly taught skill. Classroom environments support this as each classroom has their own maths resource area. Children are encouraged, independently, to make use of these resources to support their learning.

Knowing More and Remembering More

Power Maths curriculum maps are used to present the content of the National Curriculum in a logical progression. Retrieval practice at the start of each lesson allows children recall prior learning as well as enabling teachers to evaluate which areas of learning have been forgotten, this is used in the 3 in 3 etc.

End of unit checks are used by teachers to assess children's progress across a unit and to build in further practise and intervention if necessary for whole classes or small groups.

PUMA tests are used termly to assess children's progress towards the age-related expectations for their year group and to inform teachers' planning.

Multiplications are specifically taught, assessed, and tracked to ensure children are meeting the national standard on MTC in year 4 and beyond. Where children are not, there are intervention groups to allow for children to keep up and catch up.