

# MATHEMATICS POLICY

## Control page

|                                        |                      |
|----------------------------------------|----------------------|
| <b>Policy title:</b>                   | <b>Mathematics</b>   |
| <b>Version:</b>                        | <b>2</b>             |
| <b>Ratified by:</b>                    | <b>Chris Dugdale</b> |
| <b>Date ratified:</b>                  | <b>November 2024</b> |
| <b>Name of responsible individual:</b> | <b>Helen Bullen</b>  |
| <b>Review date:</b>                    | <b>November 2025</b> |

## Version control

|                        |  |
|------------------------|--|
| <b>Version:</b>        |  |
| <b>Type of change:</b> |  |
| <b>Date:</b>           |  |
| <b>Changes made:</b>   |  |

# Mathematics

## SCHOOL MISSION STATEMENT

This school aims to provide its pupils with a broad and balanced curriculum set within a caring and supportive Christian community in which each member of the school is valued and respected.

## THE NATURE OF MATHEMATICS

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)

## INTENT

At St. Paul's we aim to provide every child, regardless of their ability, a high quality Mathematics curriculum that links to life in the real world and can be applied to their future lives. We will ensure children have the tools and strategies to reason mathematically and to solve problems, that can be applied to a wide range of problems and situations with confidence. We hope to instil perseverance, resilience and flexible thinking and to encourage our pupils to have a sense of pride and achievement when they have been able to find the solution to a problem.

## THE AIMS OF THE 2014 NATIONAL CURRICULUM ARE FOR OUR PUPILS TO:

- ✓ Become fluent in the fundamentals of mathematics through varied and frequent practice with complexity increasing over time.
- ✓ Develop conceptual understanding and ability to recall and apply knowledge rapidly and accurately.
- ✓ Reason mathematically; follow a line of enquiry, conjecture relationships and generalisations.
- ✓ Develop an argument, justification and proof by using mathematical language.
- ✓ Problem solve by applying knowledge to a variety of routine and non-routine problems. Breaking down problems into simpler steps and persevering in answering.

## THE PURPOSE OF MATHEMATICS IN OUR SCHOOL IS TO DEVELOP:

- ✓ positive attitudes towards the subject and awareness of the relevance of mathematics in the real world and in readiness for a future career
- ✓ competence and confidence in using and applying mathematical knowledge, concepts and skills
- ✓ an ability to solve problems, to reason, to think logically and to work systematically and accurately
- ✓ initiative and motivation to work both independently and in cooperation with others
- ✓ confident communication of maths where pupils ask and answer questions, openly share work and learn from mistakes
- ✓ an ability to use and apply mathematics across the curriculum and in real life
- ✓ an understanding of mathematics through a process of enquiry and investigation
- ✓ Give pupils a broad range of Mathematic and real life experiences

## SCHOOL POLICY AND THE NATIONAL CURRICULUM

### Knowledge Skills and Understanding

At KS1 and KS2 teachers use a planning framework provided by the White Rose Hub, to ensure that all parts of the National Curriculum Programme of Study are taught in blocks in each year group across the school. The curriculum is structured and sequenced to ensure that the knowledge and skills build on each other throughout the year and over the pupils time in school. This is a working document and as such is composed of ongoing plans produced on a week by week basis and takes into consideration the needs of our children.

### Breadth of Study

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
- ✓ Purposeful practice where time is given to apply their learning
- ✓ a range of methods of calculating eg. mental, pencil and paper and using a calculator
- ✓ working with computers as a mathematical tool

✓ Concrete, pictorial abstract – new concept need the concrete

## CROSS-CURRICULAR LINKS

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

*Teachers seek to take advantage of all opportunities where appropriate as part of the topic based approach to the curriculum.*

## TEACHERS' PLANNING AND ORGANISATION

*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 in KS1 for 45-60 minutes and in KS2 for at least 60 minutes.*
- \* Mathematics lessons are split up into a fluency part (between 10 and 20 minutes) and then a reasoning and problem solving part (between 35 and 45 minutes)*
- \* a clear focus on direct, instructional teaching and interactive oral work with the whole class and group*
- \* an emphasis on the key aims of the National Curriculum which are fluency, reasoning and problem solving.*

Teachers in Foundation Stage base their teaching on objectives in the Framework for Reception; this ensures that they are working towards the 'Early Learning Goals For Mathematical Development'. Towards the end of Reception teachers aim to draw the elements of a daily mathematics lesson together so that by the time children move into Year 1 they are familiar with a 45-minute lesson.

## SPECIAL EDUCATIONAL NEEDS

Daily maths lessons are inclusive to pupils with special educational needs and disabilities and children with SEN are taught within the daily mathematics lesson and are encouraged to take part when and where possible.

Where applicable children's TLPs incorporate suitable objectives from the National Curriculum for maths and teachers keep these objectives in mind when planning work.

Within the daily mathematics lesson teachers not only provide activities to support children who find mathematics difficult but also activities that provide appropriate challenges for children who are high achievers in mathematics. Maths focused intervention in school helps children with gaps in their learning and mathematical understanding. Due to school closures and isolation

periods during the COVID 19 pandemic, there are some gaps that have occurred in children now in UKS2 who would otherwise be working at age related expectations. In order to address these gaps, the White Rose Maths scheme incorporates some of the key objectives from the previous year group within each unit. Additionally, interventions are taking place with specifically targeted learning with individuals or small groups of pupils to close the gaps that have formed during the pandemic. All Mathematics interventions are delivered by trained support staff and are overseen by the class teacher and mathematics subject leader.

## **LESSONS**

In lessons, learning objectives and success criteria are clearly displayed and discussed where appropriate.

The emphasis in lessons is to make teaching interactive and lively, to engage all children encouraging them to talk about mathematics.

Prior Learning Pigeons are used to help children to retrieve previous learning that is going to be built upon in the lesson or to keep their skills sharp. These are used as and when they are appropriate. During mental maths starters, understanding multiplication and recall of multiplication facts is a focus across all classes and at least 3 mental starters per week have this focus.

Lessons (both in school and online) involve elements of:

- ✓ Instruction – giving information and structuring it well;
- ✓ Demonstrating – showing, describing and modelling mathematics using appropriate resources and visual displays;
- ✓ Explaining and illustrating – giving accurate and well-paced explanations;
- ✓ Questioning and discussing;
- ✓ Consolidating;
- ✓ Reflecting and evaluating responses – identifying mistakes and using them as positive teaching points;
- ✓ Summarising – reviewing mathematics that has been taught enabling children to focus on next steps

## **PUPILS' RECORDS OF THEIR WORK**

There are 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. Children are encouraged to use mental strategies and their own jottings before resorting to more formal written methods. Children's own jottings to support their work is encouraged throughout all year groups. These methods are in line with the school's

calculations policy, see appendix. There are occasions where children have been involved in practical or physical activities and on these occasions photographs and/or adult write ups may be used as a record of what they did.

## **MARKING**

Marking of children's work is essential to ensure they make further progress. Work is marked against success criteria, in line with the school marking policy, and includes next steps where appropriate. Children are encouraged to self-assess their work and given time to read teachers' comments and make corrections or improvements. Responses to marking are made as close to the work as possible, ideally at the start of the next lesson. Some pieces of work in mathematics can be marked by children themselves, exercises involving routine practice with support and guidance from the teacher – particularly in years 5 & 6.

For more detail see the school marking and feedback policy

## **ASSESSMENT**

Assessment is an integral part of teaching and learning and is a continuous process. Teachers make assessments of children daily through;

- ✓ regular marking of work
- ✓ analysing errors and picking up on misconceptions
- ✓ asking questions and listening to answers
- ✓ facilitating and listening to discussions
- ✓ making observations

These ongoing assessments inform future planning and teaching. Lessons are adapted readily and short term planning evaluated in light of these assessments. Additionally, pupils complete end of unit assessments each time they complete a unit. The teacher then analyses the assessments to inform future planning and identify any children who may need further support.

### Termly Evaluation

Teachers use the statements of KLIPs to assess the children throughout each term, highlighting what they have achieved and identifying what they still need to work on. At the end of each unit of work an end of unit a formal assessment is completed as well as at the end of each term to support the teacher assessment.

Following from the assessments, pupil progress meetings are held with the Head teacher where the progress of pupils is discussed and appropriate intervention considered and put in place where appropriate.

### Formal Assessment

In the summer term, pupils in Year 2 and 6 complete statutory end of Key Stage assessments in both calculation and mathematical reasoning. The pupils in the remaining classes throughout the school continue to be assessed using the end of unit and end of term materials from The Whit Rose Hub.

## **REPORTING TO PARENTS**

Reports are completed before the end of the summer term and parents are given opportunity to discuss their child's progress on two separate occasions at parent's evenings.

Teachers use the evidence in maths books and information gathered from their half termly assessments to help them comment on individual children's progress.

## **PARENTAL INVOLVEMENT**

- ✓ Parents are invited to parents evening twice yearly to look at their children's work and discuss their progress and attainment with the class teacher.
- ✓ Workshops for parents are held twice each year to support parents with their understanding of the calculation methods and approaches we use in daily mathematics lessons.

## **ADAPTIVE TEACHING**

Within the daily maths lesson, teachers have a responsibility to not only provide adapted activities to support children with SEND, but also activities that provide sufficient challenge for children who are high achievers. It is the teacher's responsibility to ensure that all children are challenged at a level appropriate to their abilities using a range of strategies and equipment.

## **MONITORING AND EVALUATION**

The mathematics subject leader is released regularly from his/her classroom in order to work alongside other teachers. This time is used to monitor and evaluate the quality and standards of mathematics throughout the school and enables the subject leader to support teachers in their own classrooms.

Opportunities for teachers to review the scheme, policy and published materials are given on a regular basis during staff meetings.

## **PROBLEM SOLVING**

Problem solving is at the heart of mathematics and opportunities should be sought frequently, to enable the pupils to learn strategies, for solving problems and applying their mathematics

skills in a range of contexts. Teachers should include problem solving activities as part of their weekly teaching in order to cover objectives they need to teach, but also to provide discrete problem solving opportunities for problem solving sake. Teachers need to be aware of the statutory expectations, in reasoning at the end of both key stages and to build the skills the pupils will require in order to complete them to the best of their ability.

## **HOME LEARNING**

Homework grids are completed each half term with activities relating to the learning that is taking place in class throughout the half term, maths activities are featured on these in all year groups. These home learning activities make up part of the blended curriculum and all work produced by the children is uploaded to the online platform and commented on by the class teacher.

In all classes, children are encouraged to learn their times tables and may be given activities to help them consolidate this as homework. From Year 2 onwards, children have access at home to TT Rockstars, an online resource to help them recall their times tables, which is also used in school on some occasions.



**HODDLESDEN  
ST PAUL'S  
CE PRIMARY**

*As God's family, together we achieve*

*As God's family, together we achieve*