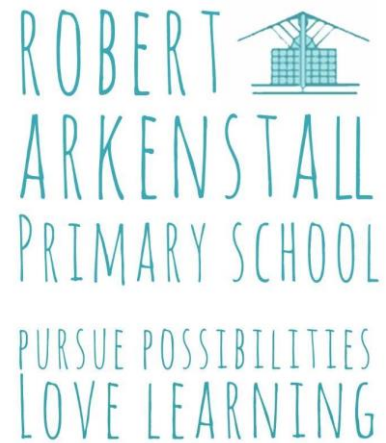




Robert Arkenstall Primary School

Maths Policy

It is the aim of Robert Arkenstall Primary School to provide a broad curriculum and education of the highest quality within a happy, safe, secure and stimulating environment, which enables each child to experience success; to equip them with skills as thoughtful, caring and active citizens, eager to explore the possibilities of the world.

pursue possibilities; love learning

This policy is published on the School website, stored on the Shared Drive and is available on request from the school office

Governor Committee	Curriculum & Standards
Reviewer	R Fisher
Ratified	February 2022
Review period	3 years or as curriculum changes
Next review due	March 2025

Our school is committed to safeguarding and promoting the welfare of children and young people and expects all staff to share this commitment.

Intent

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 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.

Aims of the National Curriculum (2014)

The National Curriculum for mathematics states that:

Teachers should use every relevant subject to develop pupils' mathematical fluency. Confidence in numeracy and other mathematical skills is a precondition of success across the national curriculum.

Teachers should develop pupils' numeracy and mathematical reasoning in all subjects so that they understand and appreciate the importance of mathematics. Pupils should be taught to apply arithmetic fluently to problems, understand and use measures, make estimates and sense check their work. Pupils should apply their geometric and algebraic understanding, and relate their understanding of probability to the notions of risk and uncertainty. They should also understand the cycle of collecting, presenting and analysing data. They should be taught to apply their mathematics to both routine and non-routine problems, including breaking down more complex problems into a series of simpler steps.

and 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.

The national curriculum and key performance indicators

The National Curriculum for Mathematics describes what must be taught in each Key Stage as well as defining a programme of study for each year group.

In Early Years, the curriculum is guided by the Early Learning Goals and the 40-60 months Statutory Framework.

Implementation

Maths in Early Years

Reception children follow the development matters curriculum and is guided by White Rose Maths resources, models and images. Maths is embedded into many independent activities and specific objectives are focused on through guided tasks. Children are introduced to models and images that they will develop in KS1 and beyond, for example part-whole models and tens squares.

Planning

Planning is undertaken at different levels:

Long term planning is taken from the National Curriculum programme of study.

Medium term planning is informed by coverage documents and formative assessment tools used by teachers throughout school.

Short term planning is carried out as appropriate for each unit of work. These plans include key performance indicators, resources to be used, any differentiation (including identification of Pupil Premium children) vocabulary and questions.

Cross-curricular links

Mathematics is taught mainly as a separate subject but every effort is made to link maths with other areas of the curriculum. We identify and also draw children's attention to the mathematical possibilities across the curriculum and to the links between maths and other curricular work so children can see that maths is not an isolated subject.

Teaching methods and approaches

Lessons have a flexible approach to ensure the pitch and pace suits the children. Teachers use their own judgement in how to approach teaching a concept and will incorporate group, paired or individual work as appropriate.

Pupils in Foundation Stage will access their maths learning through continuous provision, careful tracking and adult intervention. Within the provision, children have the freedom to further explore these mathematical concepts through concrete resources and creative opportunities. In addition to this, they are encouraged to follow their own mathematical lines of enquiry, which are supported through effective adult modelling and interactions.

Throughout school we draw on the approaches of Singapore Bar Model, Shanghai Mastery e.g. *build it, draw it, say it, write it*.

Pupils engage in:

- The development of mental strategies
- Modelling of concepts in a variety of ways
- Written methods
- Practical work
- Reasoning activities
- Investigational work
- Problem-solving
- Mathematical discussion using precise mathematical language.
- Consolidation of basic skills and routines

We endeavour to set work that is challenging, motivating and encourages the pupils to talk about what they have been doing.

Calculation Progression

In order to provide a consistency of approach across the school, we have adopted the calculation policies for Addition and Subtraction and Multiplication and Division from White Rose Maths. This will ensure that all children are exposed to the same models and images and techniques throughout school. The calculation policies set out how these are used progressively from Year 1 to Year 6.

The models and images focused on in the calculation policies are:

- Part-whole model
- Bar model
- Dienes
- Ten frames
- Straws
- Number shapes (Numicon)
- Bead strings
- Number tracks and number lines
- Place value counters

Display

We recognise the importance of displays in the teaching and learning of mathematics. Every class displays relevant mathematical information which is consistent throughout the school. This is appropriate to the age of the class. These may include number lines, number grids, vocabulary and other display materials that provide visual support for the children's mental processes.

Assessment

We aim to provide feedback to children, ideally during the lesson, so that they have specific advice about improvements to their work. Children are given time to read and review their work following marking. In KS2 children are also increasingly encouraged to mark their own work alongside an adult. See separate Marking and Feedback Policy for more information.

We use PiXL assessments termly in KS2 and twice a year in Years 1 and 2. These standardised assessments are part of a wider picture used to inform teacher assessment.

Resources

Resources and apparatus to support conceptual understanding and reasoning are used throughout school and are readily available to pupils.

Robert Arkenstall uses a variety of published materials to facilitate the teaching of mathematics – e.g. White Rose Maths Hub, but recognises the need for the teaching of maths to be ‘scheme assisted not scheme driven’. We do, however, ensure consistency through the use of the same WRM models and images throughout school based on WRM e.g. numicon, ten frames, straws, Dienes, bar model, part-whole model. These are also reflected in our calculation guidance documents.

Materials are constantly updated, as new and relevant items become available. The maths subject leader orders new resources after consultation with the staff.

Equal opportunities

As a school we endeavour to maintain an awareness of, and to provide for equal opportunities for all our pupils in mathematics. We aim to take into account cultural background, gender and Special Needs, both in our teaching attitudes and in the published materials we use with our pupils.

Children with special educational needs

All children receive high quality inclusive teaching. Where possible, we aim to fully include SEN pupils in the daily mathematics lessons so that they benefit from the emphasis on oral and mental work and by listening and participating with other children in demonstrating and explaining their methods. There are high expectations for all pupils. Resources are provided to encourage children to learn independently and support their learning. Specialist resources, such as numicon are also used, where appropriate.

Where necessary teachers will, in consultation with the SENCO and members of the SLT, draw up a programme of support for a child. If a child’s needs are particularly severe they will work on an individualised programme written in consultation with the appropriate staff.

When planning, teachers will try to address the child’s needs through simplified or modified tasks or increased access to concrete apparatus. Support staff are deployed effectively.

Homework

Maths related homework is included in children's learning log tasks throughout the school. Additional work may be sent when the class teacher feels it is appropriate to do so. In Key Stage 2, children receive homework each week. The amount of homework given will progress as the children move up through the school. The aim of homework is always to consolidate learning that has been happening in the classroom.

Impact

Our maths curriculum will create:

- A positive impact on children's outcomes at the end of each key stage, with an increasing percentage of children achieving the greater depth standard year upon year.
- Enjoyment of the maths curriculum that inspires and promotes achievement and confidence.
- Children who are resilient and able to make mistakes and learn from them.
- Children who will become fluent in all basic skills and work towards mastery.
- Children who will leave Robert Arkenstall ready for the next phase of learning.
- Children who will have the maths skills to solve problems beyond their classroom environment

Reporting and Feedback to Parents

All parents are invited to attend teacher consultation twice a year where maths can be discussed.

Progression in calculation documents are published on the school website to help parents support their children.

All parents receive an annual written report on which there is a summary of their child's effort and progress in mathematics over the year.

Reception children are assessed against the early learning goals.

At the end of KS1 and KS2, each pupil's attainment against national standards is included as part of their annual written report.