Abbots Ripton Church of England Primary School

Mathematics Policy

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Date: March 2020

Review date:

Our church school creates a firm foundation where together, with God's help and with the help of others, we learn for life, achieve our best and grow in faith.

Purpose of Policy

Here at Abbots Ripton, we firmly support the three core National Curriculum aims to ensure that pupils can:

- become **fluent** in the fundamentals of mathematics, including 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 series of simpler steps and persevering in seeking solutions.

Our policy enables us to provide an enriching Mathematics curriculum that successfully incorporates all three strands mentioned above.

Aims of the Policy

At Abbots Ripton Primary School, we firmly believe that **all** children can master mathematics and achieve. We structure our lessons so that they:

- are achievable for all
- develop deep and sustainable learning
- create the ability to build on something that has already been sufficiently mastered
- develop deep mathematical understanding
- develop both factual/procedural and conceptual fluency.

This aim of this policy it to outline key methods and strategies that we utilise in school; all Mathematics lessons across the school incorporate these fundamental mathematical ideals.

Expectations

By the time children leave our school, we expect them to be fluent mathematicians who can both reason mathematically and solve problems in a range of contexts. We also expect our pupils to develop an appreciation for the importance of Mathematics and the fundamental part that it plays in our society today.

School/Class Organisation

Children work within their own class for Mathematics, undertaking a range of carefully scaffolded tasks set by the teacher, informed by assessments. In line with the principles of Mastery Maths teaching, much of the learning is completed as a whole class. However, careful teacher assessment will mean that, on occasions, pupils may work in smaller groups or participate in Pre-Teaching or Look-Back-And-Learn sessions.

Time in the school day, outside of usual mathematics lessons, should also be dedicated in each class to arithmetic and mathematical fluency of key skills, such as times tables and number bonds. This may take the form of a 'Number Talk' or early morning work. Ideally, this should take place at least three times a week.

Displays – Working Walls

Each class must have a working wall that reflects the current learning. Displayed on the working wall should be:

- Concrete, pictorial and abstract representations of the current mathematics topic
- Key, topic-specific vocabulary
- Stem sentences (to give students the tools to respond in the form of a complete sentence to effectively communicate their maths)
- WAGOLLs (worked examples of written methods, e.g. long multiplication)

Around the classroom, it is also expected that age-appropriate scaffolds are displayed and in place for children to use. These are to be rotated and utilised when they are required. It is important that these do not simply become 'wallpaper'; they must remain purposeful for the children. For example, these resources could take the form of a number line to 100 in Year 2, or lists of square and cube numbers in Year 6.

Time Allocations

Mathematics Lessons: Daily, approximately 1 hour.
Arithmetic/ Number Work Sessions: 3 times a week. 20/30 minute sessions for Key Stage 1 and 2.

Teaching and Learning

In all classes, it is expected that **all** pupils will use a range of concrete, pictorial and abstract forms. They will explore these in depth through careful variation (conceptual and procedural). All pupils, regardless of prior experiences of mathematics, will utilise concrete and pictorial resources; they are used as a key tool to develop the pupils' depth of understanding and the visualisation of a mathematical topic.

The expectation is that all pupils use the correct mathematical terminology and this is to be reinforced by all teaching staff. In school, pupils are to frequently use stem sentences; these are recited back to the teacher as a whole class, in groups or individually. The correct use of mathematical vocabulary supports the children's verbal and written reasoning, alongside the understanding of key concepts.

Units of lessons are to be planned in careful sequences, with longer periods of time being spent on each topic. Small steps are to be taken and teachers are to plan for misconceptions prior to lessons, enabling pupils to access rich learning experiences.

Lessons are to be taught in a ping-pong style (as frequently as possible); pupil voice is to be regularly used to explain, reason and discuss an enquiry. Teachers are to

structure lessons so that they facilitate a high level of understanding and depth of learning through both investigation and discussion.

Our school 'Progression in Calculation' guidance documents for each of the 4 operations, is a crucial planning tool. These documents contain the concrete, pictorial and abstract examples for each year group. This document can be found on Staff Share.

Inclusion:

In all classes, Foundation Stage, Key Stage 1 and Key Stage 2, it is usually expected that the majority of pupils will move through the programme of study at the same pace, focusing on objectives from their year group. However, decisions about when to progress must always be based on the depth of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly are to be challenged through the offering of rich and sophisticated problems, rather than accelerating onto new content.

Teachers are to carefully utilise scaffolds to ensure that all pupils are engaged and accessing the learning. Pupils may be taught prior to the lesson (pre-teaching) or have a short session after the lesson in order to support their learning (look back and learn). Extra concrete resources, word banks, guided groups, teaching assistants and low floor – high ceiling activities are to be used to both engage and support all learners.

Times Tables

All children from Years 2 to 6 are to be provided with a TT Rockstars username and password. These details are to be stuck in the children's reading records so that they are accessible.

It is the teachers responsibility to regularly monitor their pupils' TT Rockstars accounts, assigning pupils with work that is relevant to their specific needs. For example, a pupil in Year 4 may require practise on their 2, 5 and 10 times tables, which is a Key Stage One objective; these adjustments are to be made by the teacher based on effective assessment.

Each week, time is allocated in each class for the children to practise their times tables. At least once a half term, TT Rockstars is assigned as a specific home learning task. Pupils are also encouraged to use TT Rockstars at home each day; up-to-date information is to be sent out as frequently as possible to parents. Each week, pupils are celebrated in assembly for their progress on TT Rockstars and we, as a school, participate in competitions across schools using this e-platform.

Times table knowledge also forms a vast portion of our teaching in lessons. For example, pupils across the school are expected to frequently utilise their times table knowledge in a range of contexts during their Maths lessons, such as fractions and calculating with money.

In line with the government assessment process, children in Year 4 participate in the Multiplication Tables Check. This will assess the children's fluency of times table facts up to twelve.

Progression guidance for the use of TT Rockstars and the implementation of teaching times tables across the curriculum can be found on our Staff Share.

Planning Documents

Teachers are to plan their sequences of lessons using the White Rose schemes of work. The NCETM planning spines are also to be utilised, which will support the embedding of small steps and key models/ images.

White Rose Schemes of Work can be accessed via the website:
https://whiterosemaths.com/resources/

NCETM materials can accessed via this website:
https://www.ncetm.org.uk/resources/50639

We also utilise the NCETM progression in calculations documents to inform planning. These documents can be accessed here:
https://www.ncetm.org.uk/resources/42990

All of these resources are downloaded and saved on Staff Share.

Assessment

Across the school, teachers must assess pupil's depth of understanding through the children's verbal and written responses; this may be in the form of written marking after the lesson, verbal feedback or noting observations. Assessment will take place across a variety of curriculum areas, such as science, due to the cross curricular nature of certain concepts (such as statistics).

Following a unit of work in mathematics, teachers may use the White Rose 'end of block' assessment. At the end of a term, teachers may also utilise the 'end of term' White Rose assessment.

Ratification of Policy

Mathematics Policy

Presented to: ……committee

Policy ratified on:……..……

Signed by:

Chair of Committee :……..

Chair of Governors:……..……..

Head teacher:……..……