



Mathematics Policy

St Anne's Fulshaw CE Primary School

Mathematics Policy

Intent

The 2014 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 non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.*

At St. Anne's Fulshaw we deliver an ambitious curriculum with the intention of developing resilient, independent and enthusiastic learners with a love for maths. Our curriculum aims to provide every pupil with the following skills and knowledge:

- ❖ An understanding of important concepts and the ability to make connections within maths
- ❖ A broad range of skills in using and applying maths
- ❖ Fluent knowledge and recall of number facts and the number system
- ❖ The ability to reason mathematically by following a line of enquiry
- ❖ The ability to show initiative in solving problems in a wide range of contexts- usual and unusual
- ❖ Fluency in performing written and mental calculations and mathematical techniques
- ❖ A wide range of mathematical vocabulary
- ❖ The resilience to persevere with difficult challenges

Implementation

At St. Anne's Fulshaw our lessons are carefully planned and sequenced using White Rose Maths and Master the Curriculum to supplement reasoning and problem solving skills. White Rose Maths advocates the mastery approach to mathematics and has been influenced, inspired and informed by the work of leading maths researchers and practitioners across the world. This scheme provides an integrated wealth of support and a whole raft of resources in a flexible format that allows the teacher to respond to the needs of the class. Teaching in small steps, ensures that children's confidence is boosted by regular and repeated encounters with a specific skill or concept.

Careful planning will contain the comprehensive resources below:

- differentiated activities which may be guided or independent
- differentiated practice work designed to achieve *procedural fluency*
- mastery questions which allow assessment of children's understanding

- problem solving activities, these investigative activities develop maths meta-skills.
- regular and quick activities which facilitate the practice of important mental skills
- small-group activities for children working well below ARE, run by a TA or teacher
- Open and closed tasks.

Our expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. Pupils who grasp concepts rapidly will be challenged through rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material are provided with the opportunity to consolidate their understanding, including through additional practise, before moving on.

Pre-teaching, adult and peer support, manipulatives and skilled questioning will be used by skilled teachers to allow them to effectively scaffold and challenge learners throughout their mathematics education. Gaps will be identified in a timely manner by class teachers so that they can be addressed through same day intervention or in subsequent lessons.

EYFS

In foundation stage, the children begin their journey of all things mathematical. They are introduced to numbers in a variety of forms, eg. Images, Numicon, objects, shapes as well as five and ten frames. Wherever possible the children learn through the use of concrete materials but links are also made to numbers in pictorial and abstract form. There is a balance between discrete, whole class teaching of maths, small guided sessions and learning through play in provision. A great emphasis is placed on maths vocabulary to ensure fluency of mathematical language to prepare children for KS1. Problem solving and reasoning skills are also developed as well as the application of knowledge and skills through set challenges in continuous provision.

KS1 and KS2

In Key stage 1 and 2 children study maths daily covering a broad and balanced curriculum including:

- Number
- Calculation
- Geometry
- Measures
- Statistics

As well as daily maths sessions, additional time is spent on fluency. The children work to practise addition, subtraction, multiplication and division on at a level appropriate to ARE. To facilitate this we use Fluency Grids bought from "Maths4All" and have subscribed to "Times Table Rockstars", (years 2-6).

Focus is placed on consistent mathematical methods and mathematical vocabulary within all class teaching.

We strive for all children to be confident in yearly objectives and develop their ability to apply this knowledge to solve rich, varied problems and reasoning questions. Teachers have the autonomy to extend the time period over which a unit is taught, if

they feel that more work is needed. However, all topics from the National Curriculum will be covered over each school year. Children are assessed against the EYFS and NC statements using the programme “Insight Tracking”.

Teachers will model and children will use concrete, pictorial and abstract models for each topic, appropriate to the learning context. Procedural methods for calculation are taught alongside mental methods for fluency and variation. Children will be expected to apply this learning within a range of contexts rather than focussing solely on procedural practise. (Our calculation policy for each year group is available on our school website).

Mathematics will be taught and used across the curriculum, eg. measurement in D and T, recording temperatures in science or comparing populations in geography. Confidence in numeracy and other mathematical skills is a precondition of success across the national curriculum.

Interventions:

NCETM:

“Same day intervention is designed to enable pupils to “keep up” rather than “catch up”. It should address any points in the lesson that were not understood in order that all pupils are ready for the next lesson.

The aim is that misconceptions are “nipped in the bud” at the point where they occur. More deep rooted difficulties should be addressed through a structured intervention programme which provides pupils with additional learning opportunities.”

Communication between the teacher and support staff is essential to ensure effective support for children who are struggling to learn. This may take during or after a lesson and could result in immediate intervention or intervention in the next maths lesson. Marking children’s work must provide valuable feedback and possible follow up in next session. Current published interventions used in school include, “Power of Two”, “Plus 1”, Dyscalculia assessment. TAs also use precision teaching to embed times tables and number facts.

Impact

The impact of our mathematics teaching is measured in a range of ways. As well as regular assessments built into our scheme of work, we will use questioning during lesson time, children traffic lighting in books, marking work, listening to child-led discussions and investigations, asking children across the school about their learning, book scrutiny and lesson observations by coordinator.

We use the programme “insight Tracking” to assess children’s progress all the time. This is a valuable tool to highlight gaps in children’s learning. Children’s progress on some of our published programmes, eg. TTRockstars, can be monitored daily if required.

Our curriculum enables children to make excellent progress whether in Foundation stage, KS1 or KS2, relative to each child’s individual starting point. We expect our children to leave us with the confidence to engage in the next stage of their learning, fully equipped to develop their skills and knowledge.

Equal Opportunities

Children will be given equal access to reach their full potential regardless of race, gender, cultural ability, background, ability or any sensory or physical disability. Class management and activities take account of such issues and appropriate, non-biased resources are used.

SEND

The early identification of children with SEND is vital to ensure that they can maximise their potential within the curriculum. Classes contain children of mixed age and ability, so activities are differentiated according to learning needs or abilities. Adaptations are made to accommodate specific needs of children where appropriate.

Subject Development

It is the responsibility of the subject lead to keep up to date with developments and issues in the mathematics curriculum and beyond and to advise colleagues as necessary. The subject lead will attend appropriate INSET and courses and feed back to staff.

They will be responsible for advising and supporting colleagues in the implementation and assessment of mathematics. They will also identify suitable CPD courses for other members of staff. The subject lead will also maintain and requisition resources required for the teaching of mathematics.

Monitoring

The subject lead is responsible for the development and evaluation of the mathematics curriculum to ensure continuity and progression across the whole school.

This includes:

- Helping teachers with planning
- Reviewing and updating policy as necessary
- Observations of lessons and feedback
- Analysing results of assessments to identify whole school strengths and weaknesses and to feed this into the subject development plan.

Assessment:

See impact

Health and Safety

Where special equipment is used, guidance is taken from CLEAPPS. Children are taught to use equipment correctly, store it safely and manage its use sensibly.

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