



Edward Francis

Primary School

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EDWARD FRANCIS PRIMARY

SCHOOL

MATHS POLICY

THIS ISSUE - Spring Term 2023

CHANGES FROM PREVIOUS VERSION:

- Appendix 1 - key documents for teaching and assessing maths updated
- Appendix 2 - Covid-19 implications and key priorities updated
- Adaptive teaching approach rather than differentiation
- New reporting format (termly targets)

Mathematics Policy

INTENT

Mathematics teaches us how to make sense of the world around us through developing a child's ability to calculate, to reason and to solve problems. It enables children to understand and appreciate relationships and patterns in both number and space in their everyday lives. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many cultures to the development and application of mathematics.

The Primary National Curriculum 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.

From this, our school aims have developed further:

- to develop an enthusiasm for and fascination with mathematics
- to ensure that the children have an in-depth knowledge of mathematical vocabulary and its meaning
- to promote enjoyment and enthusiasm for learning through practical activity, exploration and discussion
- to promote confidence and competence with numbers and the number system
- to develop the ability to solve problems through decision-making and reasoning in a range of contexts
- to develop a practical understanding of the ways in which information is gathered and presented
- to explore features of shape and space, and develop measuring skills in a range of contexts
- To understand the importance of mathematics in everyday life.

Equal opportunities

All teaching and non-teaching staff at Edward Francis Primary School are responsible for ensuring that all children, irrespective of gender, ability, ethnic origin and social circumstances, have access to the whole curriculum and make the greatest possible progress.

All children have equal access to the Mathematics Curriculum, its teaching and learning, throughout any one year. Day-to-day monitoring of the Mathematics policy and the provision of equal opportunities in mathematics is the responsibility of the class teacher and the senior leadership team. General monitoring is the responsibility of the Headteacher and Mathematics Subject Leader.

IMPLEMENTATION

Teachers draw on a range of resources and schemes when planning lessons to create a diverse and engaging series of lessons for pupils. Every lesson is planned with the National Curriculum expectations in mind and we use the White Rose progression of objectives to give a starting point for planning, ordering of objectives and progression.

Our principal aim is to develop children's knowledge, skills and understanding in mathematics as well as addressing the requirements of the Primary National Curriculum (2014), which we do through a daily lesson.

Each week, planned modules of work may include opportunities for:

- The use of mental mathematics involving quick recall of simple mathematical facts.
- Sharing ideas and strategies for calculations and problem solving activities.
- Demonstration, explanation and instruction by the teacher to the whole class, groups and individuals.
- Collaborative learning and discussion.
- Practical activities to provide meaningful context.
- Practical activities to practise and consolidate skills which have been taught.
- Problem solving and investigational activities.
- Developing pencil and paper strategies for calculation
- Consolidating ideas and addressing misconceptions.
- Use of technology

Pupils will have the opportunity to use a wide range of resources to support their work. Wherever possible, we encourage the children to use and apply their learning in everyday situations and in the context of their curricular themes. We are committed to promoting enjoyment in Maths and children have the opportunity to play a variety of maths games and use chrome books and ipads.

Pupils of different levels of ability are catered for through the adaptive teaching approach, with scaffolds and resources adapted to ensure that all pupils meet their potential. Within classes, the pupils work in groups that are flexible and allow for transition between the groups as pupils improve their skills. Pupils in KS2 may be taught in differentiated maths sets across the year group.

Teaching mathematics to children with special educational needs

All classes consist of pupils of varying abilities and with varying needs, and our classroom practice ensures that the majority of these needs can be met within the classroom organisation. The school aims to provide a broad and balanced education to all children and we provide learning opportunities that are matched to the needs of children with learning difficulties. Work in mathematics takes into account the targets set for individual children in their individual learning journeys.

The LSAs are trained to support children during maths lessons and encourage children to become more independent and confident in their abilities. Interventions are used when appropriate to boost small groups of children in a specific area of the curriculum - these can be led by teachers or support staff and are monitored regularly.

Teaching mathematics to more able pupils

Able pupils will be given the opportunity to extend their learning by applying their understanding to different contexts and the use of investigational work appropriate to their abilities. Teachers will be familiar with Blooms Taxonomy using a range of questions to extend children's understanding. (See Policy for More Able pupils)

IMPACT

Marking and Feedback

Pupils' books are marked regularly and they are given verbal feedback when and where necessary. This feedback may be verbal or written. Teachers will use opportunities to move learning forwards by their comments. Pupils are encouraged to think about what they need to do to improve their maths understanding and explain how they got to answers, whether they are correct or not.

(See Pupil Feedback Policy)

Assessment for Learning

Pupils at Edward Francis Primary School are assessed at key times throughout their education. As well as ongoing teacher assessment in all year groups, they are assessed externally in mathematics at the end of Y6, by means of Statutory Assessment Tests. These are the summative “snapshot” assessments of their attainment at a specific time required by law. Pupils in Year 4 will be taking the government Multiplication Check to assess their recall and accuracy of their times table facts up to 12 x 12.

Teachers assess pupils continuously on a less formal basis; these assessments inform the teacher of the pupil's current achievements, and guide the teacher in planning the pupil's future learning.

Self Assessment

Children are encouraged throughout maths lessons to assess their own personal understanding and learning. This gives teachers the opportunity to identify very quickly those children who may require more support and to see the perceptions pupils have of their achievement of the learning objective.

Monitoring and review

Monitoring of the standards of children's work and of the quality of teaching in mathematics is the responsibility of the mathematics subject leader. The work of the mathematics subject leader also involves supporting colleagues in the teaching of mathematics, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school. The mathematics subject leader conducts termly monitoring, according to the school's monitoring policy and feeds back to staff and governors on findings each term. The Head teacher allocates regular management time to the mathematics subject leader so that she can review samples of children's work, teachers' planning and undertake lesson observations of mathematics teaching across the school.

Governing Body Links

Monitoring reports in the subject are seen by the Curriculum Committee and a named Governor is briefed to oversee the teaching of Maths within the school, liaising with the maths subject leader to review progress.

Informing and Involving Parents

Parents are invited to discuss their child's progress at two formal parents' evenings during the academic year and more informally when required. Before each consultation meeting, parents and carers receive a target report, showing how their child has progressed and also

providing a target to work on. They will also receive an end of year report outlining their child's achievements, progress and next steps in the subject. Key information is provided on the school website, with regards to the progression in calculation and ways to help your child in maths.

Foundation Stage

In Early Years/Reception classes, mathematics will be taught as units within an integrated day. For more information about the themes and objectives taught in the Foundation Stage, please see the separate 'Foundation Stage Policy'.

Contribution of Maths to other areas of the curriculum.

Maths is taught as a discrete subject but is also integrated into other subject areas through cross-curricular themes.

English

Mathematics contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. For example, we encourage children to read and interpret problems in order to identify the mathematics involved. The children explain and present their work to others during plenary sessions. Younger children enjoy stories and rhymes that rely on counting and sequencing. Older children encounter mathematical vocabulary, graphs and charts when using non-fiction texts.

Computing

Teachers use a variety of technology to enhance the learning of their pupils. Children use and apply mathematics in a variety of ways when solving problems using computing. Younger children use this to communicate results with appropriate mathematical symbols. Older children use it to produce graphs and tables when explaining their results or when creating repeating patterns, such as tessellations. When working on control, children use standard and non-standard measures for distance and angle. They use simulations to identify patterns and relationships. We use Purple Mash to enhance the teaching of maths as well as online activities such as Times Table Rockstars and MyMaths, to which all pupils from Year 1 have logins to use in and out of school.

Personal, social and health education (PSHE) and citizenship

Mathematics contributes to the teaching of personal, social and health education, and citizenship. The work that children do outside their normal lessons encourages independent study and helps them to become increasingly responsible for their own learning. The planned activities that children do within the classroom encourage them to work together

and respect each other's views. We present older children with real-life situations in their work on the spending of money.

Spiritual, moral, social and cultural development

The teaching of mathematics supports the social development of our children through the way we expect them to work with each other in lessons. We group children so that they work together, and we give them the chance to discuss their ideas and results. The study of famous mathematicians around the world contributes to the cultural development of our children.

Appendix 1

Teaching and Assessing Maths at EFPS

Planning and Teaching

At Edward Francis, we choose not to follow a specific published scheme for mathematics. With the National Curriculum at the core of everything we plan and teach, teachers are given the flexibility to be creative with the resources they use and to choose activities and plan lessons to best suit the needs of their pupils.

Teachers are encouraged to refer to the following documents in the planning cycle, to ensure effective coverage and progression of maths across the school:

[Statutory Framework for the Early Years Foundation Stage](#) - this new framework seeks to ensure consistency in assessing pupils in the EYFS. This [document](#) outlines the key statements linking to maths.

[National Curriculum documents](#) - this is our priority document for teaching maths across KS1 and 2. In order to check coverage, teachers should highlight [this document](#) at least once a term to show what has been covered.

[Four Rules Policy](#) - this policy is reviewed annually and should be regularly referred to when teaching the four rules of calculation. It outlines the progression of calculation strategies from EYFS to Y6.

[Ready to Progress Documents](#) - these documents were created by NCETM as part of the Covid recovery programme for maths. They have picked out the key objectives in each year group that pupils must fully understand to allow for them to make progress.

[White Rose Lesson Progression](#) - although we don't subscribe to a scheme at EFPS, some teachers find it useful to have guidance for progressing and building the sequence of lessons. White Rose offers this, as well as suggested activities and planning materials, should staff choose to use them.

We also subscribe to a number of online resources that teachers can use as part of their lesson delivery or for home learning:

[My Maths](#) - provides interactive lessons and homework activities; booster sessions and a variety of games.

[Maths Shed](#) - provides lesson materials linked to the White Rose sequence of lessons. Also has interactive quizzes that can be set for homework/home learning.

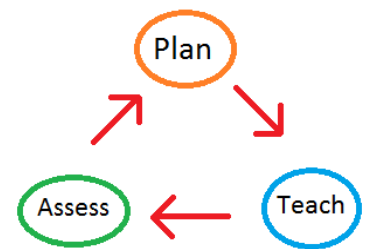
[NumBots](#) - interactive games focusing on basic number skills including early calculation.

[Times Table Rockstars](#) - interactive games for practising multiplication and division facts. Useful tool for practising for the Year 4 Multiplication Check.

[Purple Mash](#) - a range of learning activities linked to areas of the maths curriculum - interactive games that can be set for home learning/homework.

Assessment

Formative Assessment: in line with our school [Pupil Feedback Policy](#), we believe that feedback and marking in maths should focus on both successes and improvement needs against a lesson objective. This enables pupils to become reflective learners and also for staff to work through the planning cycle to ensure effective teaching and learning.



Summative Assessment: each term, pupils in KS1 and 2 are assessed using the [Cornerstones](#) assessments or in the cases of Y2 and 6, past SATs papers. These assessments consist of an arithmetic test and two reasoning papers. The data is collected in analysis spreadsheets, which identify whether a pupil is reaching the age-related expectation for that time in the year. This data is then used to inform teacher assessment. Teachers record their assessments in Target Tracker and this is subsequently discussed at a progress meeting.

Interventions: some pupils require interventions to close the gaps in their maths learning. This could take a number of forms and could be delivered by a teacher or learning support assistant. Staff are encouraged to review interventions regularly to ensure that they are effective and fit for purpose.

Statutory Assessments: there are a number of resources we subscribe to which provide support and practice for statutory tests.

[Testbase](#) - this is a question bank of previous SATs questions for KS1 and 2 which can be made into activities, plenary tasks etc to familiarise pupils with the types of maths questions they may be asked.

[IT Rockstars - Soundcheck](#) - this is a simulation of the Year 4 multiplication check.

[My Maths](#) - has booster packs and SATs practice for both key stages.

Other resources are available to staff via our shared Google Drive.

This document will be updated in line with new government guidance and any change in resources. It will be shared with staff and governors to ensure we have a mutual understanding and overview of how maths is taught at EFPS.

Amy Vinnicombe - December 2023

Appendix 2

Maths at Edward Francis Primary School

Our Ethos

Mathematics is an essential part of a balanced, challenging and engaging curriculum. We aim that all learners at EFPS become fluent in the fundamentals of the subject, as well as being able to reason mathematically and solve problems in a range of contexts. We strive to ensure our pupils develop an enthusiasm for learning maths and a positive attitude towards the subject that will stay with them as they move through their education and into their lives outside of school.

COVID 19 Implications

Since March 2020, at the onset of the pandemic, staff at EFPS have worked hard to ensure that pupils are receiving a good quality education in mathematics. During the two periods of lockdown and home learning, teachers were preparing well-thought-out maths lessons to both consolidate and teach concepts. Teachers drew on a range of sources to create their lessons, including online resources such as Oak Academy, White Rose and MyMaths as well as creating their own video lessons using Loom. This allowed pupils working at home and in school (as part of key worker/vulnerable pupil bubbles) to access the same quality of learning. Pupils without the required technology were either provided with linked, printed activities or loaned a device to access the home learning.

In the summer term of 2021, teachers were required to fill in the NCETM Curriculum Prioritisation documents to show the extent to which each key objective was taught in the academic year. This gave teachers a starting point when planning for the 2021-22 academic year to ensure the gaps formed due to extended periods of home learning were closed before teaching new objectives - the NCETM 'Ready to Progress' documents were shared with staff to aid this process and we introduced the use of the White Rose progressions.

As the years have moved on since the pandemic, staff continue to use their formative and summative assessments to ensure that any gaps in knowledge and skills are addressed and - with support from the recovery premium funding - interventions, class based support and resources are provided to further close the gap.

Key Priorities in Maths 2023 - 24

- To ensure the pupils make the expected level of progress and attainment in maths
- To build the skills required to demonstrate a conditional knowledge of maths (the 'I know how...' skills)
- To ensure that there is a whole school approach to presentation and calculation, in line with the White Rose Progression and Curriculum expectations.