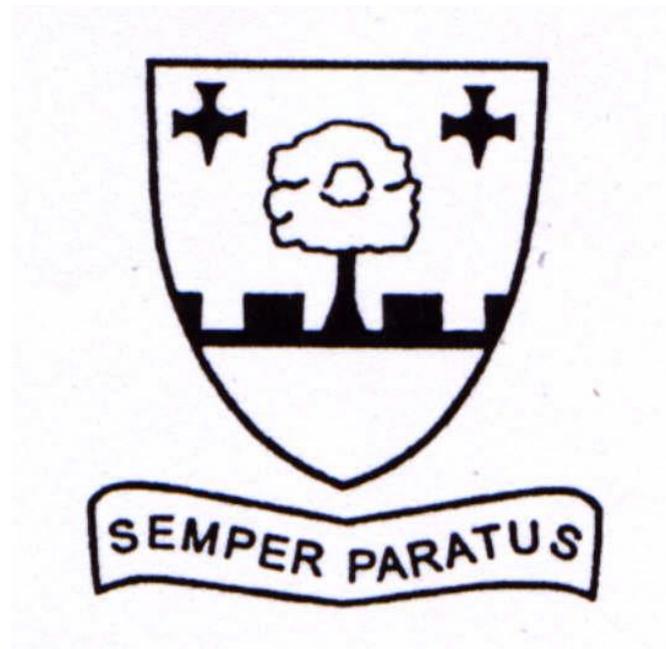


ELMWOOD JUNIOR SCHOOL



MATHEMATICS POLICY

Issue 5

Elmwood Junior School

Mathematics Policy

Introduction and Aims:

Mathematics teaches us how to make sense of the world around us through developing a pupil's ability to calculate, to reason and to solve problems.

It enables pupils to understand and appreciate relationships and pattern in both number and space in their everyday lives.

Mathematics is a core subject within the National Curriculum and using the Programmes of Study from the National Curriculum our aims, for all children, are:

- To become **fluent** in the fundamentals of Mathematics, including through varied and frequent practise with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- To **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- To **solve problems** by applying 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.
- To develop a practical understanding of the ways in which information is gathered and presented.
- To understand the importance of Mathematics in everyday life.

Our aims, for all teachers, are:

- To promote enjoyment and enthusiasm for learning through practical activity, exploration, investigation and discussion.
- To develop mathematical language through pre-teach vocabulary.
- To encourage pupils to verbalise ideas and explain their work.

Elmwood Junior School is a Rights Respecting School. Children are aware of their rights as defined in the United Nations Convention on the Rights of the Child, those that relate to Mathematics, specifically:

- Article 28 (right to education) - Every child has the right to an education. Primary education must be free and different forms of secondary education must be available to every child. Discipline in schools must respect children's dignity and their rights. Richer countries must help poorer countries achieve this.

Teaching and learning style

The school uses a variety of teaching and learning styles in Mathematics lessons. Teachers are required to include in their planning, provision for pupils with a variety of learning styles, including visual, aural and kinaesthetic learning activities.

We are dedicated to enabling our children to achieve academic mastery in Mathematics and we do so through the use of a **Concrete – Pictorial – Abstract** approach to learning Mathematics. This enables our children to build solid foundations in their understanding of Mathematics, which is vital in order to master the subject.



Our principle aim is to develop pupil's knowledge, skills and understanding in Mathematics. We do this through a daily lesson that has a high proportion of whole-class and group-directed teaching. After a baseline assessment, each year group is organised into flexible teaching groups. These groups are reviewed regularly so children are taught in the most effective way with targeted support when needed. During these lessons we encourage pupils to ask as well as answer mathematical questions. They have the opportunity to use a wide range of resources such as number lines, number squares, digit cards and small apparatus to support their work. Pupils use ICT in Mathematics lessons where it will enhance or consolidate their learning, as in modelling ideas and methods. Wherever possible, we encourage the pupils to use and apply their learning in everyday situations.

Planning

~~We carry out the curriculum planning in Mathematics in three phases (long-term, medium-term and short-term). Our Long Term Plan identifies the areas that we will teach in each term of the academic year. Lessons are planned using a common planning format and are monitored by the Subject Leader and members of the Senior Leadership Team.~~

Every year group now follows the Abacus scheme of work. Abacus is a planning toolkit which has a carefully selected sequence of lessons that help the children develop their mental fluency, reasoning and problem solving skills. Each topic is regularly re-visited and built upon using children's prior knowledge. The main benefits of the scheme are with the sequencing lessons, progression and revisiting of topics across the year. The scheme, as a whole, helps with making planning more appropriate, consistent and provides all class teachers with a foundation which they have the freedom to build upon, be creative and 'make their own'. Teachers are encouraged to develop their planning using resources from White Rose Maths. White Rose Maths helps teachers improve lessons with pictorial representations and reasoning questions which develop pupils' deeper understanding of mathematical concepts. The scheme follows the National Curriculum Programme of study. Lessons are monitored by the Subject Leader and members of the Senior Leadership Team.

The National Curriculum Programme of Study for Mathematics can be found on the website:

<https://www.gov.uk/government/publications/national-curriculum-in-england-maths-programmes-of-study>

Assessment and Record Keeping

Assessment is continuous and ongoing.

- End of Key Stage 2 SATs take place annually for Year 6.
- ~~Termly testing takes place in Years 3, 4, 5 & 6.~~

- ~~Teacher assessment takes place every term and is tracked on a matrix, which identifies the amount of progress each child has made.~~
- Termly testing takes place in Years 3, 4, 5 and 6 using STARs Renaissance.
- NFER Tests are used at the end of the academic year to assess the progress and attainment of pupils working in Years 3, 4 and 5.
- Venn diagrams are used to track children working at the age expected standard in reading, writing and Mathematics.
- Termly Pupil Progress Meetings take place to track the progress of all pupils to identify:
 - pupils making the expected progress
 - pupils making accelerated progress
 - pupils making insufficient progress and require intervention support

Role of subject leader

The subject leader will be responsible for improving standards of teaching and learning in Mathematics through:-

- Pupil progress data.
- Provision of Mathematics (including intervention and support programmes).
- The quality of the learning environment.
- Taking the lead in policy development.
- Auditing and supporting colleagues in their CPD.
- Purchasing and organising resources.
- Keeping up to date with Mathematics developments

Special Educational Needs

Within the daily Mathematics lesson teachers not only provide activities to support pupils who find Mathematics difficult but also activities that provide appropriate challenges for pupils who are high achievers in Mathematics.

Where applicable pupils' support plans incorporate suitable objectives from the Mathematics National Curriculum and teachers keep these objectives in mind when planning work.

When additional support staff are available to support groups or individual pupils they work collaboratively with the class teacher. Feedback is via annotations on planning or verbally returned by support staff at the end of each lesson to inform future planning.

Pre-teach vocabulary is used within lessons to develop children's understanding of mathematical language.

Interventions

In addition to the daily Maths lessons at Elmwood, pupils who are not making sufficient progress or meeting age related expectations are given additional support through interventions. The main goal of the interventions is to develop a better understanding of key mathematical concepts but it can also be to accelerate the speed of pupils' learning. The pupils who attend interventions are decided using data from termly assessments. The impact of interventions is regularly assessed and acted upon where needed. It is important that interventions do not regularly take pupils away from any other core or foundation lessons. Pupils may resent the intervention if it takes them away from other lessons that they enjoy.

Equal Opportunities

All pupils are provided with equal access to the Mathematics curriculum. We aim to provide suitable learning opportunities regardless of gender, ethnicity or home background.

Mathematics Books

Children's Mathematics books are considered to be a 'badge' of teaching at Elmwood. All children are expected to use a sharp HB pencil and a ruler. Each piece of work should begin with the learning focus and the date (written as 30/04/2018~~21~~) underlined. Presentation of work in Mathematics books should be neat and tidy. A margin (three-two squares wide) is required when children are completing questions in their books. A margin is not required for work that requires more space e.g. charts, graphs etc. If pieces of paper are stuck in they are trimmed accordingly rather than folded.

Class teachers should select appropriate and purposeful tasks. It is often better to have fewer, high quality tasks rather than a page of repetitive calculations. Tasks should be appropriately differentiated but challenging enough to allow pupils to make sufficient progress with their understanding.

Achievement Logs

Achievement logs are uploaded to Google Classroom and are completed termly by the pupil and class teacher. Objectives are organised into topics and colour coordinated into autumn, spring and summer terms. This helps pupils identify the objectives that they have covered in the current term. Each objective has an example question to help the pupils when assessing themselves. For each objective, pupils are expected to assess their understanding under one of the three headings (confident, practise or help). Achievement logs can be used to support planning, teacher assessment and help pupils identify their own targets. Pupils are encouraged to address their targets using either Mathematics, Freckle, SATS Companion or Mirodo.

~~Achievement logs for each year group should be stuck in the front of Mathematics books. Learning objectives are categorised into topics. Each learning objective has a section for teachers (T) to complete with the triangle assessment method and a section for children to self-assess their own understanding of each objective. The children are expected to use the 1-3 system to show their understanding. Each classroom should have an A4 sheet explaining how achievement logs should be completed to ensure the children have a full understanding.~~

~~An up-to-date log of children's self-assessment should also be completed regularly in the column labelled 'SA'. Teachers assessment should be completed in the column labelled 'T'.~~

Marking and Feedback

~~When marking Mathematics books, teachers are expected to address each piece of work (using a red pen) and decide if the pupil needs: extra guidance at the start of the following lesson, more practise through similar questions to address misconceptions or to move onto the next area of learning. Children are expected to address misconceptions with their green pens. Teachers are expected to provide immediate feedback through AFL to ensure misconceptions are addressed as early as possible.~~

~~The following lesson should be designed to take account of the next steps.~~

~~Marking should be frequent and there is evidence that misconceptions are addressed. Children will be given green pens to self and peer assess.~~

Marking in Maths books should serve a single purpose- to advance pupil progress and outcomes. Effective marking and feedback in Maths is developing a mind-set of seeing mistakes as an opportunity to learn. Evidence shows (Black and William 1998) that pupils benefit from marking their own work.

Together with the teacher's use of 'Assessment for Learning' (AFL), pupils are expected to self-assess their work (using a green pen). Pupils are encouraged to reflect on what they have done well and what could be improved so that they develop as reflective learners. From this they are able to address their misconceptions within the lesson and identify their own targets. It is important for teachers to distinguish between a pupil's simple slip and an error that reflects on a lack of understanding.

Growth Mind-set in Maths: Through self-assessment children are encouraged to use a growth mind-set to independently address their misconceptions. Children have learnt about applying a growth mind-set through a series of assemblies and activities in class.

When marking Maths books, teachers are expected to address each piece of work (using a red pen or a stamp) to ensure that each pupil's self-assessment is accurate and misconceptions are being addressed appropriately.

Parental Involvement

Mid-term targets are set and sent to parents in Autumn and Spring.

Teachers use the information gathered from their termly assessments to help them comment on individual pupil's progress.

Parents are provided with a curriculum map at the start of each term which outlines the main topics for the term, how they can help at home and key vocabulary.

Parents are given the opportunity to attend two separate parent evenings to discuss their pupil's progress in Mathematics and give input into their child's individual support plan. Throughout the school year, parents are invited to attend Mathematics workshops. The aim of these is to help parents understand the Mathematics curriculum and become more knowledgeable in how they can support their child's learning at home.

Reports are completed before the end of the summer term and parents are given the opportunity to discuss, where appropriate, their child's progress. Parents are also welcome to contact their pupil's teacher throughout the school year if they have any concerns.

Rights Respecting

The UN Convention on the Rights of the Child underpins all policies that are implemented at Elmwood Junior School. Specifically for this policy we are seeking to uphold Article 28 – every child has the right to an education and Article 29 – education must develop every child's personality, talents and abilities to the full.

Data Protection

Elmwood Junior School will collect and process all personal data and sensitive personal data in accordance with the legal obligations as set out in the General Data Protection Regulations 2018. Please see the school's GDPR Data Protection Policy for further information.

Review

This policy will be reviewed every three years, unless changes are required in the interim.

~~Date of approval: November 2018~~ ————— ~~Review date: November 2021~~

Date of approval: October 2021

Review date: October 2024