



Nelmes Primary School Mathematics Policy

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Nelmes Primary School Mathematics Policy



Introduction

At Nelmes Primary school we value every pupil and the contribution they have to make. As a result we aim to ensure that every child achieves success and that all are enabled to develop their skills in accordance with their level of ability.

Mathematics is both a *key skill* within school, and a *life skill* to be utilised throughout every person's day to day experiences.

Rationale

Mathematics equips pupils with the uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem solving skills and the ability to think in abstract ways. Mathematics is important in everyday life. It is integral to all aspects of life and with this in mind we endeavour to ensure that children develop a positive and enthusiastic attitude towards mathematics that will stay with them.

The National Curriculum for mathematics (2014) describes in detail what pupils must learn in each year group. Combined with our Calculation Policy, this ensures continuity, progression and high expectations for attainment in mathematics.

It is vital that a positive attitude towards mathematics is encouraged amongst all of our pupils in order to foster confidence and achievement in a skill that is essential in our society. At Nelmes we use the National Curriculum for Mathematics (2014) as the basis of our mathematics programme. We are committed to ensuring that all pupils achieve mastery in the key concepts of mathematics, appropriate for their age group, in order that they make genuine progress and avoid gaps in their understanding that provide barriers to learning as they move through education. Assessment for Learning, an emphasis on investigation, problem solving, the development of mathematical thinking and development of teacher subject knowledge are therefore essential components of the Nelmes approach to this subject.



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Aims

- To foster a positive attitude to mathematics as an interesting and attractive part of the curriculum.
- To develop the ability to think clearly and logically, with confidence, flexibility and independence of thought.
- To develop a deeper understanding of mathematics through a process of enquiry and investigation.
- To develop an understanding of the connectivity of patterns and relationships within mathematics.
- To develop the ability to apply knowledge, skills and ideas in real life contexts outside the classroom, and become aware of the uses of mathematics in the wider world.
- To develop the ability to use mathematics as a means of communicating ideas.
- To develop an ability and inclination to work both alone and cooperatively to solve mathematical problems.
- To develop personal qualities such as perseverance, resilience, patience, aspiration and self-belief through a sense of achievement and success.
- To develop an appreciation of the creative aspects of mathematics and an awareness of its aesthetic appeal.

The teaching of mathematics:

At Key Stage 1, the teaching of mathematics is supported various resources such as Busy Ant Maths, Target Your Maths and Abacus. A range of practical activities and investigations are used to ensure the children gain a secure understanding of maths.

At Key Stage 2, mathematics teaching is supported by the Target Your Maths Scheme, and may be further supplemented by materials from other schemes, such as Abacus. Children in years 5 and 6 are taught in sets.

It is the responsibility of the class teacher to group the children and differentiate the tasks effectively.

We aim for children to achieve mastery of the key areas and domains in Maths, narrowing the gap between the most and least able learners. The expectation is that the majority of pupils will move through the



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programmes of study at broadly the same pace. However, decisions about when to progress will always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly will be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material will consolidate their understanding, including through additional practice, before moving on.

The key to successful mathematics lessons based on the New National Curriculum 2014 is high quality preparation and effective planning.

Pupils are provided with a variety of opportunities to develop and extend their Mathematical skills, including:

- Group work
- Paired work
- Whole class teaching
- Individual work

Pupils engage in:

- the development of mental strategies
- written methods
- practical work
- investigational work
- problem solving
- mathematical discussion
- consolidation of basic skills and number facts
- maths games

Our teachers strive to:

- build children's confidence and self esteem
- develop children's independence
- allow all children to experience regular success
- Contextualise mathematics
- Use practical approaches to mathematics (models and images)
- Encourage children to select independently resources to help them
- Challenge children of all abilities.



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- Encourage children to enjoy mathematics
- Develop a child's understanding of mathematical language
- Learn from teachers, peers and their own mistakes.
- Allow children to ask questions as well as answer them.

Our pupils should:

- have a well-developed sense of the size of a number and where it fits into the number system (place value)
- know by heart number facts such as number bonds, multiplication tables, doubles and halves
- use what they know by heart to figure out numbers mentally
- calculate accurately and efficiently, both mentally and in writing and paper,
- drawing on a range of calculation strategies
- make sense of number problems, including non-routine/'real' problems and identify the operations needed to solve them
- explain their methods and reasoning, using correct mathematical terms
- judge whether their answers are reasonable and have strategies for checking them where necessary
- suggest suitable units for measuring and make sensible estimates of measurements
- explain and make predictions from the numbers in graphs, diagrams, charts and tables
- develop spatial awareness and an understanding of the properties of 2D and 3D shapes

We recognise the importance of establishing a secure foundation in mental calculation and recall of number facts before standard written methods are introduced. We use accurate mathematical vocabulary in our teaching and children are expected to use it in their verbal and written explanations. Mathematics contributes to many subjects and it is important the children are given opportunities to apply and use Mathematics in real contexts. It is important that time is found in other subjects for pupils to develop their Numeracy Skills, e.g. there should be regular, carefully planned opportunities for measuring in science and technology, for the consideration of properties of shape and geometric patterns in technology and art, and for the collection and presentation of data in history and geography. We endeavour at all times to set work that is challenging, motivating and encourages the pupils to think about



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how they learn and to talk about what they have been learning. Teachers plan problem solving and investigational activities to ensure that pupils develop the skills of mathematical thinking and enquiry.

Maths Curriculum Planning

Mathematics is a core subject in the National Curriculum and we use the objectives from this to support planning and to assess children's progress.

Staff use long term planning to ensure coverage of all areas of the National Curriculum and medium term planning to differentiate objectives according to the set which they teach.

It is the class teacher who completes the weekly plans for the teaching of mathematics. These weekly plans list the specific learning objectives for each lesson and give details of how the lessons are to be taught.

Teachers plan learning that is differentiated to meet the needs of all pupils, whether they have a specific learning difficulty in maths or whether they are particularly able. When scrutinizing work in maths books, the senior leadership team expects to see work from any one lesson on a similar theme, differentiated for high attaining, middle attaining and low attaining pupils – possibly with individual work for an SEN pupil at one end of the achievement spectrum, to individual work for a gifted pupil at the other.

Assessment

This section details the various assessment methods and practices used in Nelmes through which we ensure that children are making appropriate progress and that the activities they take part in are suitably matched to their ability and level of development.

Formative Assessment (AfL) - (monitoring children's learning)

Assessment is an integral and continuous part of the teaching and learning process at Nelmes and much of it is done informally as part of each teacher's day to day work. Teachers integrate the use of formative assessment strategies such as: pre and post learning challenges, effective questioning, clear learning objectives, the use of success criteria, effective feedback and response in their teaching and marking



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and observing children participating in activities. Findings from these types of assessment are used to inform future planning. At least once a week the teachers will set the children response marking, this takes the form of Now Try These or corrections.

Summative Assessment – (evaluating children’s learning)

More formal methods are used to determine the levels of achievement of children at various times during the school year:

- **Assessment Weeks:** We use termly assessments as a way of recording children’s progress in objectives covered across that specific term. This information is then used during pupil progress meetings to plan next steps and set targets.
- **Standardised Testing.** They allow the school to measure each child’s attainment in all areas of mathematics, and compare this with an “average” for children of that age. The results are used to monitor individual’s progress year on year and to identify those children who may have Special Needs in mathematics.

Statutory End of Key Stage Assessment. The National Curriculum requires that each child is assessed, and assigned a Level of attainment for each of the 5 Attainment Targets in Mathematics. This is to be carried out at the end of Key Stage One and at the end of Key Stage Two. *For more information see assessment policy.*

Early Years Foundation Stage (EYFS)

We follow EYFS curriculum guidance for Mathematics. However, we are committed to ensuring the confident development of number sense and put emphasis on mastery of key early concepts. Pupils explore the ‘story’ of numbers to ten and the development of models and images for numbers as a solid foundation for further progress.

Special needs provision, including gifted and talented

At our school we teach mathematics to all children, whatever their ability and individual needs. Mathematics forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our mathematics teaching we provide learning opportunities that enable all pupils to make good progress. We strive hard to meet the



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needs of disadvantaged and vulnerable children, including those pupils who generate Pupil Premium, those with special educational needs, those with disabilities, and those learning English as an additional language. We take all reasonable steps to achieve this.

When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors such as classroom organisation, teaching materials, teaching style, and differentiation so that we can take some additional or different action to enable the child to learn more effectively. Ongoing assessment for learning and summative assessment allows us to consider each child's attainment and progress against expectations. This ensures that our teaching is matched to the child's needs.

Intervention through SENs support or EHC plan will lead to the creation of an Individual Education Plan (IEP) for children with special educational needs. The IEP may include, as appropriate, specific targets, strategies and intervention programmes relating to mathematics, such as the Wave 3 Maths Intervention, Numicon- 'Bridging the gap' and Plus One (for example).

Resources

There is a wide range of resources to support the teaching of mathematics across the school. Apart from day to day apparatus, which is stored in classrooms, there is a central resource area, which contains resources to support the delivery of mathematics throughout the school.

The Mathematics Leader will:

- Provide a strategic lead and direction for Mathematics in the school;
- Provide support and advice to staff in the delivery of the Mathematics programme of study;
- Remain informed about current developments in the subject by attending INSET sessions and being involved in independent research and reading;
- Disseminate relevant information to staff;
- Deliver INSET sessions to staff, to support staff development;
- Monitor and evaluate teaching and learning of Maths;
- Monitor standards in the subject, through planning and work scrutiny, statistics, quality of teaching and pupil assessments;
- Order and maintain resources to enhance effectiveness of Maths teaching within the school;
- Consider with staff and work with SMT members in the evaluation and planning of actions included within the School Improvement Plan.



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This policy should be read in conjunction with the following school policies:

- Calculation Policy
- Mental calculation policy
- Teaching and Learning Policy
- Assessment Policy
- Special Needs Policy
- Equal Opportunities Policy