



Maths Policy

Introduction

A high-quality mathematics education provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject (National Curriculum 2014).

At Newlands Junior School, all of our children are given the opportunity to develop their mathematical potential through a rich, engaging, spiral curriculum. We want our children to feel confident in using and applying maths in a wide range of situations. We believe that maths is uniquely powerful in helping us to make sense of and describe the world around us and in enabling us to solve problems. It is a fascinating subject, dealing with the nature of number, space, pattern and relationships. Useful and creative, it requires not only facts and skills, but also understanding gained through exploration, application and discussion.

Aims and objectives

In maths, we aim to develop lively, enquiring minds, encouraging pupils to become self-motivated, resilient, confident and capable learners in order to solve problems that will become an integral part of their future. Personal development will be a major part of our maths curriculum as we aim to build pupil's character and also prepare them for the next phase of their education.

Our curriculum is designed to:

- foster in children a positive attitude and enjoyment of mathematics
- equip children with a high level of understanding and skill in all areas of mathematics including: measures; shape and space; collecting, presenting and analysing data and using and applying numbers
- enable children to become competent and confident mathematicians and develop a real understanding of its relevance to everyday life
- emphasise the development of mental methods throughout the school
- enable children to apply their understanding of number to problem solving by teaching children a range of skills and strategies and providing opportunities for their reasoning to be applied to raise standards of achievement in all areas of mathematics, in line with the National Curriculum 2014 and its aims to:
 - become **fluent** in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems
 - **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.

Teaching and learning

A daily maths lesson consists of:

- a short response time at the start of the lesson during which the children complete any corrections they have from the previous day's work; a main teaching session with opportunities to embed and deepen understanding, as well as regular opportunities for active maths sessions and a reflective time during which children self-assess their learning.

In addition to the maths lesson, there will be daily rapid recall taking place, involving mental maths objectives taken from the rapid recall progression document. Times tables are practised on a daily basis, using a variety

of chanting, speed tables and speed tests on IPads and every child has a weekly times tables test. There will also be a further opportunity for children to practise daily operations each day (addition, subtraction, multiplication and division).

- During every lesson, objectives are clearly displayed on the board and often referred to at different points of the lesson, especially towards the end of each lesson, to enable the children to assess their own learning.
- The main teaching session places strong emphasis on the teacher modelling methods (concrete, pictorial and abstract) and strategies to develop children's understanding, combined with skilful questioning. To further embed this understanding, teachers provide frequent opportunities for mathematical investigations to be carried out, promoting reasoning skills, which enables the children to explain their mathematical thinking.
- Children are encouraged to record their chosen methods in writing and are taught both informal and formal ways to achieve this. We aim for all children to be competent in using formal written methods by the end of Key Stage 2, but to also be equipped with a variety of heuristic methods (see calculation guidance policy)
- Children are given regular opportunities to apply their knowledge and understanding to problem solving, where they are encouraged to make estimations and predictions and present information clearly.
- All work is adapted to meet the needs of individuals, ensuring it is accessible to all children within the lesson. Children are given every opportunity to further embed their reasoning and investigative skills, including applying these skills to real life situations and active maths opportunities.
- Where it is clear that a child needs individual support on a specific area of mathematics, slight misconceptions are addressed, wherever possible, the same day by either the teacher or a teaching assistant.
- Data analysis of ongoing assessment data is used to identify children who require additional support in specific areas. When it is identified that a child will benefit from more in-depth support, an intervention programme will be put in place. Interventions are tightly planned, with a success criteria set and assessments made frequently to ensure progress is being made. Interventions are carried out by either a teacher or a teaching assistants, however it is the responsibility of the teacher to decide how it is planned and delivered. Communication is paramount to ensure the intervention is carried out correctly and effectively.
- The development of spoken language is a critical part of every maths lesson and teachers ensure that all children are consistently exposed to a rich mathematical vocabulary. Once their mathematical vocabulary is developed, children are able to present a mathematical justification, argument or proof. This is nurtured by encouraging children to talk about and explain their developing methods and strategies with each other, as well as their teacher and parents.
- Weekly homework is set in order to support the learning of concepts and skills covered during the week. This takes many forms including the practising and sharing of a new skill or concepts with parents, games and gathering information or data.

Adaptive Teaching

The National Curriculum provides a broad and balanced education for all children. Throughout all teaching and learning at Newlands, we provide opportunities that enable all pupils to make good progress. We do this by setting suitable challenges and responding to each child's individual needs, as well as choosing activities to suit each year group and lesson. Teaching is adapted to meet the needs of all pupils. Appropriate support, whether adult support or the use of manipulatives or other extra learning resources, is given to any child that needs it to move their learning forwards.

Curriculum planning and assessment

Mathematics is an integral part of our daily lives and therefore manifests itself in many areas of the curriculum. Our newly designed curriculum has been created with our children's views and their parents' views in mind. After listening to what our children and parents felt was important to learn and what our children would like to learn in their maths lessons, we created our spiral skills progression for each year group, ensuring progressive maths skills are taught through both discrete maths lessons and through topic links.

- Units of work are planned for from the Maths framework.
- Weekly plans are made consisting of concepts and skills from the yearly teaching objectives.
- Weekly plans are annotated on a day-by-day basis. The needs of all children are planned for, including those with special educational needs and high achievers.
- Pre-teaching tasks are used prior to each objective, to inform the planning of subsequent lessons and to identify the different starting points of all the children.
- Children self-assess on a regular basis in order to support them in recognising areas of strength and weakness in maths, to equip them with the knowledge of their next steps in their own learning.
- Regular teacher assessments of children's progress are made against the key objectives for each year group and are recorded on formative assessment sheets after each area of maths has been completed and this is used to complete termly assessment data on our tracking system, developed specifically for our school. This informs future planning.
- All Year 6 children complete the National Curriculum end of key stage assessments, as set out by the government and Year 4 children complete the compulsory times tables tests at the end of Year 4.

Marking and presentation

Teachers are expected to adhere to the schools marking policy when marking books and presentation policy when guiding children as to how to present their work. Highlighters are used to mark the WALT (green, orange and red).

Inclusion:

At Newlands we teach maths to **all** children, whatever their ability. We value the diversity of individuals within the school and do not discriminate against children because of 'differences'. All children at Newlands Junior School are encouraged and given maths opportunities in all areas. Maths is often a strength for many children with challenging behaviour/needs and it can help channel a child's attention and help them reach their full potential.

Monitoring

The maths lead, alongside SLT, are responsible for monitoring and evaluating curriculum progress. This is done through book scrutiny, planning scrutiny, lesson observations, pupil interviews, staff discussions and audit of resources. Standards of maths are moderated within school and externally with other schools, including those within our family of schools, focussing on transition levels. The Governors are informed regularly about standards in maths and the progress of maths throughout the school through the annual report and Governors' meetings. The maths link governor will also work closely with the maths lead.

Partnership with parents

Liaison with parents is important in order for them to help children with their learning. Parents are informed regularly about the school's approach to maths through letters, displays, and where appropriate, meetings.

The school website provides information for parents, including this policy and the calculation guidance policy, together with a number of maths websites which parents/children can access via the hyperlinks provided, all of which support their children's learning. Our newly designed spiral curriculum topics are designed to link maths objectives to other curriculum subjects and an overview of each topic, can also be found on the website so that parents can see what their children are learning.

Parents are informed about children's progress by appointment through parent's evenings and annual reports.

Every term parents are invited to a Celebration of Learning. This involves parents/carers visiting their child's classroom, where they will be able to look through their child's books, see work on display and also have an informal chat with the class teacher. We also invite parents, grandparents and carers into their child's maths lessons to enable them to experience and develop their understanding of the methods their children are taught in school, so that they feel better equipped to support their children at home through weekly homework activities. To further support this, school holds maths workshops to demonstrate the methods taught in school, to equip parents with the knowledge needed to fully support their children.

Parents are also informed at the end of the summer term the key learning objectives their children will be taught the following year and given a leaflet explaining how they can contribute to their children's learning in the home.