

Mathematics Policy



K i l l a m a r s h
Infant & Nursery School
'Brighter Beginnings'

Reviewed February 2023

Introduction

Mathematics is important in everyday life. It is integral to all aspects of life. It is a subject which can equip children with useful practical skills for understanding life in the wider environment and provide intellectual stimulus to challenge their own academic abilities.

Mathematics is an essential element of communication which is important in life to analyse and communicate information and ideas. It is an important tool to enable logical reasoning, problem-solving skills and the ability to think in abstract ways.

Mathematics is a subject which can be taught in its own right and contribute to many subjects of the primary curriculum.

Intent

We aim to:

- Implement the current legal requirements of the National Curriculum and follow the Programmes of Study
- Raise standards in Numeracy and mental calculation.
- Provide pupils with a variety of opportunities to develop and extend their mathematical skills in and across each phase of education.
- Develop the use and application of mathematical vocabulary, knowledge, attitudes and skills in real life problems and tasks.
- Provide pupils with a mathematical curriculum which will produce individuals who are creative, independent, inquisitive, enquiring and confident.
- Encourage a positive attitude towards mathematics and enjoyment of the subject.
- Provide a stimulating environment so that pupils can develop their mathematical skills to their full potential.

At Killamarsh Infant and Nursery School, we strive to make maths fun, purposeful and interesting for all children. We aim to equip all pupils with the skills and confidence to solve a range of problems through fluency with numbers and mathematical reasoning. Children are encouraged to see the mathematics that surround them every day and enjoy developing vital life skills in this subject. We aim for every child to develop a sound understanding of maths, equipping them with the skills of calculation, reasoning and problem solving that they need in life beyond school. The children will be given access to a variety of mathematical opportunities, which will enable them to make the connections in learning, develop and use new vocabulary and discuss their learning. By working across different representations of learning and using resources, we aim for our children to be confident mathematicians who are independent, inquisitive and not afraid to take risks.

Implementation

Our curriculum incorporates the coverage of the statutory outcomes outlined in the Early Years Foundation Stage and KS1 Mathematics Programme of Study – National Curriculum 2014. Our planning is based on the White Rose Maths Schemes of Learning to guarantee consistency, coherence and progression throughout the EYFS and KS1. In addition staff refer to other materials such as Primary Stars and the NCETM Materials, to support short-term planning. These are used across EYFS and KS1 allowing children to be exposed to a variety of different types of learning and problems to solve. Teachers implement our schools' agreed Calculation Policy.

To learn mathematics effectively, some things have to be learnt before others and this order of small step learning is factored into our planning (e.g. place value needs to be understood before working with addition). At Killamarsh Infant and Nursery School, we have an emphasis on number skills first, carefully ordered, throughout the curriculum. We support our children to become visualisers, describers and experimenters. Our pupils engage and enjoy using concrete resources to experiment and complete practical activities. We encourage our pupils to become describers as we place a great emphasis on the mathematical language and questioning so pupils can discuss the mathematics they are doing. Sentence stems are regularly used during whole class discussions to support our younger children to learn mathematical language and develop their ability to reason. We support our children to become experimenters as we want pupils to love and learn more about mathematics.

Children take part in explicit daily mathematics lessons with a specific focus on either Number or Measure, Geometry or Statistics. All areas of the mathematics curriculum are continually revisited through planned short or longer in-depth teaching sequences to enable children to develop a depth of understanding. At Killamarsh Infant and Nursery School, we regularly give our children opportunities to use and apply their mathematical learning in everyday situations, aiming to embed mathematical skills across the curriculum.

Impact

The impact of our high-quality maths curriculum will be to develop children who are confident, keen and unafraid mathematicians who are equipped with a wealth of knowledge to draw upon to solve problems.

We measure how well we are doing by:

- Assessing our children's outcomes against the ELGs for EYFS and the end of Key stage 1 expectations for Y1 and Y2.
- Assessing Key Stage One pupils using the PUMA assessments each term.
- Monitoring the work children do and their response and attitudes to learning.
- Speaking with children so that they can demonstrate their developing skills and knowledge and show what they know, can do and to check they remember more than they did before.

The 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

Legal Framework

The National Curriculum sets out year-by-year programmes of study for Key Stage 1. This ensures continuity and progression in the teaching of mathematics. The EYFS Statutory Framework 2021 sets standards for the learning, development and care of children from birth to five years old and supports an integrated approach to early learning. This is supported by the 'Development matters' non statutory guidance.

Planning

Teachers should develop detailed knowledge of the curriculum in order to break the mathematics down into small steps to develop mastery and address all aspects in a logical progression. This will ensure deep and sustainable learning for all pupils. The National Curriculum and support this approach ensuring that children do not develop gaps in their knowledge and have the opportunity build up new concepts systematically.

Long term planning

The National Curriculum: Mathematics Programme of Study (2014) and the Statutory Framework for the Early Years Foundation Stage Statutory Framework (2021) provide the long term planning for mathematics taught in the school.

Medium term planning

EYFS and Key Stage One use the White Rose Maths Hub schemes of learning (which can be found on the school website) as their medium term planning documents with Key Stage One also using Primary Stars to support this. These schemes provide teachers with exemplification for maths objectives and are broken down into fluency, reasoning and problem solving, key aims of the National Curriculum. They support a mastery approach to teaching and learning. They ensure teachers stay in the required key stage and support the ideal of depth before breadth. They support pupils working together as a whole group and provide plenty of time to build reasoning and problem solving elements into the curriculum.

Short term planning

The above schemes of learning support daily lessons with PowerPoints and opportunities to independently show their learning. All lessons are then based on the sequenced 'small steps' from White Rose Maths and Primary Stars. When children require additional support, intervention or challenge, teachers ensure that the work provided matches the current small step covered in the maths session. EYFS planning is based on the medium term plans and delivered to individuals and groups of children with thought to where the children are now and what steps they need to take next. All classes have a daily mathematics lesson where possible. In KS1 lessons are 45-60 minutes, which involves a high proportion of direct teaching and interactive oral work with the whole class and groups. There is an emphasis on mental calculation and informal written calculation Teachers of the EYFS ensure the children learn through a mixture of adult led activities and child initiated activities both inside and outside of the classroom. Mathematics is taught through an integrated approach and follows the sequences and 'small steps' set out in the White Rose Maths scheme of work.

Inclusion

At Killamarsh Infant School, we aim to enable all children to achieve to their full potential. This includes children of all abilities, social and cultural backgrounds, EAL speakers and children with SEND. All planning should take account of the needs of all children in a teacher's class.

Teachers are encouraged to provide opportunities for children are working at greater depth, by challenging their thinking in a variety of ways. Children are provided opportunities to gain a deeper understanding (rather than just increasing the size of numbers) through open ended questioning and development of reasoning skills to encourage children to make connections and find efficient methods of finding a solution. For those children needing further support, on-the-spot intervention is given by Teachers / TAs carrying out live marking and support both through guided practice and independent activities. Gaps identified are taught through pre-teaching sessions to support pupils before accessing the current learning, manipulatives are provided to support pupils to access this.

Cross-curricular links

Wherever possible, the maths curriculum will provide opportunities to establish links with other curriculum areas.

English

- Mathematical terminology is used, where appropriate.
- Maths-based texts are sometimes used in English lessons and in guided reading sessions.

Science

- Pupils' data collection and analysis skills are further developed through the conduction of physical experiments, using units of measurement, calculating averages and interpreting results.
- Pupils record their finding using charts, tables and graphs.

Humanities

- Data analysis, pattern seeking, spatial awareness and problem-solving skills are developed through the teaching of geography.
- Pupils' understanding of time and measurements of time are developed through discussions of historical events.

ICT

- Pupils are encouraged to use electronic devices, gaining confidence throughout their school experience.
- ICT will be used to enhance pupils' maths skills through the use of online resources.

Resources

- Each class has a stock of core resources that are age appropriate. Additional mathematical equipment and resources are stored centrally within school to be accessed by all staff.

Assessment and Record-keeping

Assessment is regarded as an integral part of teaching and learning and is a continuous process. It is the responsibility of the class teacher to assess pupils in his/her class. Children may be assessed on a short, medium and long-term basis. Pupils should be assessed in mathematics to:

- Ensure progression and continuity in their learning
- Identify their strengths and weaknesses
- Set targets to achieve and plan the next stage of work

Assessments may be formal observations, questioning, tests, or planned activities designed to judge progress against specific individual targets, including those in an Individual Education Plan. End of term and school year assessment will be used to review and to track pupils' progress and attainment against school and national targets. Pupils' performance will be analysed, targets set and progress monitored. Children's work will be marked according to the agreed school policy and their performance continually assessed in accordance with the National Curriculum.

Teachers make assessments of children daily through;

- regular marking of work
- analysing errors and picking up on misconceptions
- asking questions and listening to answers

- facilitating and listening to discussions
- making observations

These ongoing assessments inform future planning and teaching. Lessons are adapted readily and short term planning evaluated in light of these assessments.

Medium Term Assessments

Primary Stars assessments are carried out after each unit of learning. Termly assessments are carried out across the school using the PUMA assessments. These materials used alongside judgements made from class work support teachers in making a judgement for each child which in line with the assessment policy is entered onto O-Track which can be accessed by the Headteacher and the Maths Lead. Pupil Progress meetings are timetabled each term for all Key Stages. Progress of pupils is discussed and appropriate intervention considered and put in place where appropriate.

Long term Assessments

Year 2 pupils are able to complete the optional national tests (SATs) in May, which inform teacher summative judgements in the summer term.

Roles and Responsibilities

The Governors and the Headteacher are responsible for ensuring that the teaching of mathematics is implemented effectively throughout the school. They must ensure that the budget is well managed and will allow for staff development and for buying new resources.

Role of the Maths Lead

- To lead in the development of maths throughout the school.
- To monitor the planning, teaching and learning of mathematics throughout the school.
- To help raise standards in maths.
- To provide teachers with support and advice in the teaching of mathematics.
- To provide staff with CPD opportunities in relation to maths within the confines of the budget and the School Improvement Plan
- To monitor and maintain organised, high quality resources.
- To keep up to date with new developments in the area of mathematics

The class teacher is responsible for the effective teaching of mathematics in the classroom.

Reporting to parents

The school works closely with parents and keeps them informed of their child's progress. If any particular concerns or issues arise, the teacher sees the parent about the matter. We seek to work in partnership with parents for the good of the child.

The school holds a Consultation Evening in October and March when staff can discuss pupil progress with parents. In the summer term, a full written report is sent home with further opportunity to discuss the report with staff.

For 'marking' see the school's Marking Policy

Equal Opportunities

The teaching of mathematics will be in accordance with the school policy for Equal Opportunities. We aim to provide equal access to mathematics for those children with Special Educational Needs and those pupils who are very able and require extension activities. Mathematics should provide opportunities for all pupils to experience success and fulfill their potential, regardless of gender, special educational needs, social and linguistic backgrounds. This is to be monitored by analyzing pupil performance throughout the school to ensure there is no disparity between specific groups.