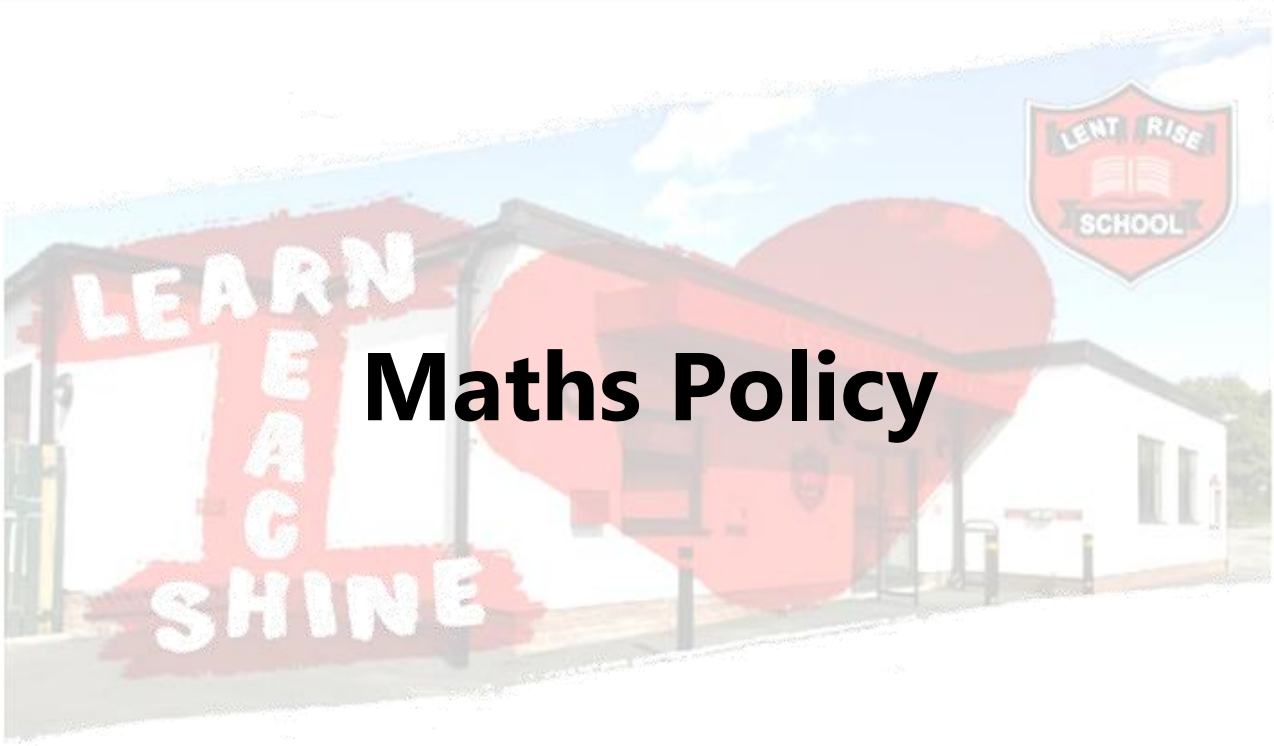
LENT RISE SCHOOL

'Learn, Reach, Shine'



Maths Policy

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Introduction

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore 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)

Rationale

The purpose of mathematics at Lent Rise School is to equip children with the knowledge, skills and understanding to become confident mathematical problem solvers. Children are taught to think and reason mathematically, applying skills fluently and efficiently, arriving at the accurate answer. Mathematics education at Lent Rise School provides children with an understanding of the world around them and a curiosity and enjoyment of the subject. At Lent Rise School, we are passionate about ensuring that all children receive a sequenced, knowledge rich mathematical education.

Intent:

At Lent Rise School our intent is to deliver a mathematics curriculum that supports our pupils with skills for life. Our aim is for all pupils to be equipped for learning; to develop thinking skills to enable them to make good choices whilst reflecting and reasoning. Our pupils will work with resilience in a safe and secure environment and will be prepared for life's journey.

Implementation:

Our mastery mathematics curriculum is planned to ensure high aspirations and ambition for all our pupils. The pupils will learn how to be resilient and effective learners. They will embed creativity, learning through a wide variety of skills; ensuring the pupils develop curious minds. The pupils will learn through our Learn Reach Shine values to develop their curiosity as mathematicians.

Impact:

Through the mathematics curriculum, pupils will become confident learners, demonstrating success and perseverance. Pupils will demonstrate skills in varied fluency, reasoning and problem-solving through the application of a range of progressive and embedded strategies. They will become fluent and able to articulate their interest and understanding of mathematics in real-life. Their learning experiences will prepare them with confidence for further education and learning.

The 2014 National Curriculum

Mathematics in The National Curriculum is split into the following strands:

- Number
- Measurement
- Geometry
- Statistics (not year 1)
- Ratio and proportion (Year 6)
- Algebra (Year 6)

With problem solving and application skills development in each area.

The aims of the 2014 National Curriculum are for our pupils to:

- become fluent in the fundamentals of mathematics through varied and frequent practice with complexity increasing over time

- develop conceptual understanding and ability to recall and apply knowledge rapidly and accurately

- reason mathematically; follow a line of enquiry, conjecture relationships and generalisations

- develop an argument, justification and proof by using mathematical language. problem solve by applying knowledge to a variety of routine and non-routine problems, breaking down problems into simpler steps and persevering in answering

The National Curriculum sets out year-by-year programmes of study for Key Stages 1 and 2. This ensures continuity and progression in the teaching of mathematics.

The EYFS Statutory Framework 2023 sets standards for the learning, development and care of pupils from birth to five years old and supports an integrated approach to early learning.

This is supported by the 'Development Matters' non-statutory guidance as well as the White Rose Medium Term plans for EYFS Mathematics. Nursery uses the Master the Curriculum programme.

The EYFS Framework in relation to mathematics aims for our pupils to:

ELG: Number

• Have a deep understanding of numbers to 10, including the composition of each number.
• Subitise up to 5.
• Automatically recall number bonds up to 5 and some number bonds to 10, including double facts.

ELG: Numerical Patterns

• Verbally count beyond 20, recognising the pattern of the counting system.
• Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.
• Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

The purpose of mathematics in Lent Rise School is to develop:

- positive attitudes towards the subject and awareness of the relevance of mathematics in the real world
- competence and confidence in using and applying mathematical knowledge, concepts and skills
- an ability to solve problems, to reason, to think logically and to work systematically and accurately
- initiative and motivation to work both independently and in cooperation with others
- confident communication of mathematics where pupils ask and answer questions, openly share work and learn from mistakes
- an ability to use and apply mathematics across the curriculum and in real life
- an understanding of mathematics through a process of enquiry and investigation
- Ensure that sticky knowledge is evident in learners and lessons develop children's fluency, reasoning and problem-solving skills.

We aim to provide a stimulating and exciting learning environment that takes account of different learning styles and uses appropriate resources to maximise teaching and learning. In each classroom there will be a 'Maths Working Wall' where key information; children's mathematical recording and ideas; and key vocabulary will be displayed so that children can refer to them to build on their understanding. This will be updated regularly throughout each new topic focus. Each classroom also has a 'STEM floor-book' where whole-class shared writing and calculation strategies can be recorded. This is available to children to refer to, to aid in future learning and build upon their prior knowledge.

Breadth of study

Careful planning and preparation ensure that throughout the school pupils engage in:

- practical activities and games using a variety of resources
- problem solving to challenge thinking

- individual, paired, group and whole class learning and discussions
- purposeful practise where time is given to apply their learning
- open and closed tasks
- a range of methods of calculating e.g. mental and pencil & paper
- working with computers as a mathematical tool

Through our creative approach to teaching and learning we also seek to explore and utilise further opportunities to use and apply mathematics across all subject areas.

Teachers' planning and organisation

Long-term planning

The National Curriculum for Mathematics 2014, Development Matters and the Early Learning Goals (Number and Numerical patterns) provide the long-term planning for mathematics taught in the school. Each year group follows a long-term plan to enable teachers to see the sequence of lessons – this is available to all teachers to ensure progression. Each member of staff can see what has been taught previously and what will be taught next. We use White Rose Maths to structure our sequence of lessons, and this is supplemented using Classroom Secrets.

Medium-term planning

EYFS - Year 6 use the White Rose Maths schemes of learning as their medium-term planning documents however these are changed based on the needs of the children. Some units of work may be made longer depending on the needs of the children.

These schemes provide teachers with exemplification for mathematics objectives and are broken down into fluency, reasoning and problem solving; the key aims of the National Curriculum.

They support a mastery approach to teaching and learning and have numbers at their heart. 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 weekly planning and are monitored at intervals by the mathematics subject leader. EYFS planning is based on the

medium-term plans and delivered as appropriate to individual pupils with thought to where the pupils are now and what steps they need to take next.

All classes have a daily mathematics lesson where possible. In Key Stage 1, lessons are 45-60 minutes and in Key Stage 2 at least 60 minutes. In addition to this, children in EYRS and KS1 have a 15 minute Mastering Number session 4 times per week and KS2 have a times table session 4 times per week.

Teachers of the EYFS ensure the pupils learn through a mixture of adult led activities and pupil-initiated activities both inside and outside of the classroom. Mathematics is taught through an integrated approach. In Nursey, children have a daily maths circle time and can develop their maths through investigation and play during child-initiated learning. They have maths stations, water trays, sand trays and use calendars and timetables daily.

Special educational needs & disabilities (SEND)

Daily mathematics lessons are inclusive to pupils with special educational needs and disabilities. Where required, pupils' IEPs incorporate suitable objectives from the National Curriculum for Mathematics or Development Matters and teachers keep these in mind when planning work. These targets may be worked upon within the lesson as well as on a 1:1 basis outside the mathematics lesson. Mathematics focused intervention in schools helps pupils with gaps in their learning and mathematical understanding. These are delivered by trained support staff and overseen by the SENCO and/or the class teacher.

Within the daily mathematics lesson, teachers have a responsibility to not only provide scaffolded activities to support pupils with SEND but also activities that provide sufficient challenge for pupils who are high achievers. It is the teachers' responsibility to ensure that all pupils are challenged at a level appropriate to their ability.

Equal opportunities

Positive attitudes towards mathematics are encouraged, so that all pupils, regardless of race, gender, ability or special needs, including those for whom English is a second language, develop an enjoyment and confidence with mathematics. This policy is in line with the school's 'Racial Equality' policy. The aim is to ensure that everyone makes progress and gains positively from lessons and to plan inclusive lessons. Lessons involving lots of visual, aural and kinaesthetic elements will benefit all pupils including those for whom English is an Additional Language (EAL).

Differentiated questions are used in lessons to help pupils and planned support from teaching assistants and other adults.

Lessons

Teaching of mathematics at Lent Rise usually follows the 3-part lesson. This means each lesson will have a mental or written flashback, which re-caps learning from a previous session, a main teaching and learning session and an independent practise task. It is encouraged that mini-plenaries are used throughout each lesson to ensure learning is effective and children are on task. As part of the main teaching and learning sequence, children will have access to whiteboards so that children can complete calculations during teacher-led activities. Most children will complete a mastery challenge and the higher ability will have the opportunity to progress on to the star challenge allowing them to develop their skills further. Some children will be completing independent tasks scaffolded to their ability but will remain part of the main lesson so that they are exposed to mathematical language and discussion time. Each lesson will have varied fluency, reasoning and problem-solving activities as part of either the teacher-led element or the independent task.

In all lessons, targets and key vocabulary are clearly displayed and discussed.

The emphasis in lessons is to make teaching interactive and lively, to engage all pupils encouraging them to talk about mathematics. Lessons involve elements of:

- Instruction – giving information and structuring it well
- Demonstrating – showing, describing and modelling mathematics using appropriate resources and visual displays
- Explaining and illustrating – giving accurate and well-paced explanations
- Questioning and discussing
- Consolidating
- Reflecting and evaluating responses – identifying mistakes and using them as positive teaching points
- Summarising – reviewing mathematics that has been taught enabling pupils to focus on next steps

We aim to provide children with a variety of teaching approaches including individual, small groups and whole class activities. This will include discussion in small and large groups with, and without, the teacher so that the children can talk about their mathematics, share ideas and learn from others. Reasoning activities should be part of all lessons, be it during questioning or as challenges in lessons.

Lessons should incorporate White Rose, Classroom Secrets and Third Space Learning resources so that there is continuity between year groups and the children become familiar with using the resources so re-teaching of resources is no longer required from year to year.

Pupils' Records of work

Pupils are taught a variety of methods for recording their work and are encouraged and helped to use the most appropriate and convenient. Pupils are encouraged to use mental strategies and their own 'maths graffiti' before resorting to more formal written methods. Pupils' own 'maths graffiti' to support their work is encouraged throughout all year groups. Where tasks are practical, the class teacher or teaching assistant may take photographic evidence, which is then stuck in the floor-book and annotated or kept in a folder on the staff drive.

Marking

Marking of pupils' work is essential to ensure they make further progress. Work is marked against the target, in line with the school marking policy, and includes next steps in some lessons. Pupils are encouraged to self-assess their work and given time to read teachers' comments and make corrections or improvements. Responses to marking are made as close to the work as possible, ideally at the start of the next lesson. Some pieces of work in mathematics can be marked by pupils themselves, exercises involving routine practice with support and guidance from the teacher – particularly in years 5 and 6. Live marking is encouraged during lessons so verbal feedback and corrections can be made 'in the moment'.

Assessment, record keeping and target setting

Assessment is an integral part of teaching and learning and is a continuous process. Teachers make assessments of pupils 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

Mini assessments are carried out across the school regularly after each block of work completed using White Rose resources. Pupils will be tested three times

during the year using the National Test Style assessment materials provided by NFER. Children will be tested on their fluency skills and their problem solving and reasoning skills. These materials used alongside judgements made from class work support teachers in making an assessment for each pupil which in line with the assessment policy they enter onto Target Tracker.

Teachers in years R-6 track the detailed progress of pupils in mathematics against the National Curriculum statements. The statements cover the mathematics objectives for the year group. This process of careful tracking adds to helping teachers form an assessment for each pupil.
Pupil Progress meetings are timetabled each term for all classes. Progress of pupils is discussed, and appropriate intervention considered and put in place where appropriate.

Long term

In EYFS children are measured at the end of Foundation stage against the Early Learning goals criteria for the mathematics specific area of development and are graded as emerging, have met or exceeded the goals for number and numerical patterns.

Year 6 complete the national tests (SATs) in May. Years 1, 2, 3, 4 and 5 complete their final NFER Summer Term assessments in Summer 2 which will help to accurately create a final judgement for each child in each year group. In addition to this, Year 4 will have a Multiplication Tables Check in June.

Resources

Each class has a stock of core resources that are age appropriate. Additional mathematical equipment and resources are stored centrally in the maths cupboard. All teachers have logins for White Rose Maths, Classroom Secrets, FunkeyMaths resources and TTRS to use in lessons.

Homework

Homework for mathematics will be set weekly. Maths homework is set and expected back in the following day. Maths homework can be a mixture of paper-based practice (KS1) and online using CenturyTech (KS2). Pupils will also have TTRS practice to be completed online or as a paper copy.

Role of the Mathematics Subject Leader

- To lead in the development of mathematics throughout the school
- To monitor the planning, teaching and learning of mathematics throughout the school
- To help raise standards in mathematics

- To provide teachers with support in the teaching of mathematics
- To provide staff with CPD opportunities in relation to mathematics within the confines of the budget and the School Improvement Plan
- To monitor and maintain high quality resources
- To keep up to date with new developments in the area of mathematics

Conclusion

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

- Teaching and Learning
- Assessment and Record Keeping
- Feedback and Marking
- Equal Opportunities
- Health and Safety
- SEND
- Computing

Appendices

i) The White Rose long term planning for year groups