



LANNER PRIMARY SCHOOL MATHS POLICY

November 2025

Lanner Primary School Mathematics Policy

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

Calculation Policy

Assessment Policy

Marking and Feedback Policy

Equal opportunities Policy

SEND Policy

Introduction

At Lanner Primary School, we recognise maths as an essential life skill and we are committed to ensuring that all children have a positive and meaningful experience of the subject. We aim to present maths as a challenging, exciting and relevant subject in order to promote a confident attitude, not just in 'maths lessons' but across the entire curriculum and beyond. By teaching using small steps throughout each lesson, our children gain the necessary foundational knowledge to grasp more advanced concepts.

At Lanner, we recognise that all mathematical concepts are connected; some concepts can't be grasped without a good understanding of other topics. Therefore, we have sequenced the learning throughout all year groups so that it builds on other areas of the curriculum, e.g. a place value unit will always take precedent at the beginning of each year to consolidate an understanding of our number system. Similarly, teaching the four operations will always be taught before fractions, decimals and percentages as a solid foundation in division (and multiplication) is crucial to their understanding and skill application.

The rationale behind our approach to teaching mathematics lies within the research from the Mathematics Specialist Teacher Programme, the NCETM/ Maths Hub as well as the National Curriculum, which states the following:

The expectation is that most pupils will move through the programmes of study at broadly the same pace. We use **Whiterose small steps** to ensure a well sequenced curriculum, amended to suit our children's needs, and use **NCTEM** resources, including the **Mastering Number** programmes to compliment and support this.

Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content.

Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on. We use **Number Sense fluency** and **Number Sense Times Tables** to close gaps in learning.

Mathematical Aims

To ensure that pupils:

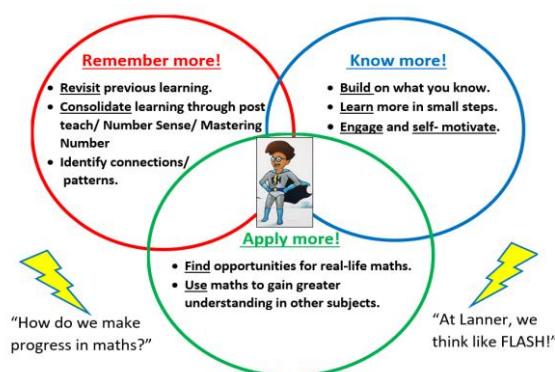
- Become **fluent in the fundamentals** of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **Reason mathematically** by following 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 problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.
- Foster positive attitudes towards mathematics by **developing pupils' confidence, independence, persistence and co-operation skills**.

At Lanner Primary School, we believe that mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are organised into distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency,

mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge and understanding to science and other subjects and will be provided with opportunities to do so. The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. 'Live marking' and incisive, verbal feedback (VF) will identify those children rapidly within a lesson. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice (interventions, homework etc.), before moving on.

Intent

The intention of the Maths curriculum at Lanner Primary School is for its pupils to become competent, curious mathematicians. Mathematical skills and knowledge will be taught, explored and revisited so that pupils know more, remember more and can therefore apply more.



Children will develop resilience and self-confidence in applying their learning skills and knowledge. The collaboration between peers and their class teacher will drive the learning and inform the content, strategies and real-world contextualisation to maximise on the progress and learning opportunities. Through wider curriculum links, we strive to embed maths throughout the curriculum, bringing the subject to life. We go beyond the minimum requirements within the National Curriculum as we aim to prepare the children for later life in the 'big, wide world'. We need the children to know the relevance of their learning and that maths is essential to everyday life.

Implementation

A 'mastery' approach has been adapted and implemented at Lanner Primary School for the planning, delivery and engagement with mathematics. We also look at Rosenshine's Principles of Instruction – from cognitive science-and use them to structure lessons (see appendix for further explanation):

1. Begin the lesson with a **review of previous learning**.
2. Present new learning in **small steps**.
3. Ask a number of ping-pong style **questions** (and to all pupils).
4. **Provide models** (concrete, pictorial and abstract) and worked examples.
5. **Practise** using the **new material**, including exposure to new **vocabulary**.
6. **Check for understanding frequently** and correct errors (formative assessment through verbal or written feedback on whiteboards).
7. Obtain a **high success rate**, including those that are working at 'greater depth'.
8. **Provide scaffolds** when necessary to enable all learners to achieve.
9. Provide thoughtful, **independent practice**.
10. Plan **monthly and weekly reviews** through slides, questioning and/or summative assessments.

We primarily use the White Rose Maths material to plan mathematical units that are explored progressively, drawing on resources, data and suggestions from reliable sources such as NCETM and nrich.co.uk to link mathematical talk and knowledge across the various units (e.g. multiplication and area).

Units of work will be assessed upon the completion of each one. Teachers may use summative assessments published by WRM and/or add regular data drops on Sonar using the statements provided and using it to inform the

next step. The end-of-year assessment will be completed in May (Years 2 and 6 SATs) or June (rest of the school) to provide a snapshot of individual annual progress. In addition, we have introduced termly PUMA assessments for each year group. Teachers will use these to track progress and identify areas of need for their cohort.

In our teaching and learning, we understand the importance of metacognition and developing self-regulation in children to become independent learners. Through our work on growth mindset, we have developed a culture where the children (and staff) understand that mistakes help us learn and we should not be afraid of getting things wrong. To embed this further, we regularly give the children the opportunity to self-mark and reflect; this allows the children to have a feeling of success as well as developing their resilience and perseverance.

Teachers are expected to audit their subject knowledge of Maths; completing personal research (as and when necessary) to ensure their own teaching of concepts is accurate and appropriate for their year group. The Maths lead will provide training, planning support and 'book look'/ environment feedback to improve staff confidence and expertise, ensuring a consistent approach from EYFS through to Y6 (including Y7 transition).

Features of a lesson

1. Daily lessons last for approximately one hour x 5 days a week. It begins with a teacher and/or TA input which then allows ample time for independent practice. Independent tasks should include fluency tasks, reasoning, problem solving/ higher- order-thinking activities.
2. Lessons are sharply focused with one new objective (WALT) introduced at a time.
3. Difficult concepts and potential misconceptions are identified in advance and strategies to address them are planned (pre teaching where possible/ use of concrete apparatus etc.).
4. Feedback should be provided within the lesson and / or during the next maths lesson where necessary, in order to allow children to move on swiftly in their learning.
5. The use of high quality materials are used to support learning (Nrich, NCETM, White Rose materials, I see reasoning).
6. There is regular interchange between concrete/ contextual ideas and their abstract/ symbolic representation.
7. Making comparisons is an important form of developing deep knowledge. The questions, 'What is the same/ different?' are often used to draw attention to essential features of concepts.
8. Teacher- led discussion is interspersed with tasks involving pupil-to-pupil discussion and completion of time-focused activities.
9. An additional arithmetic session is conducted every morning – prior to a maths lessons- in Years 1-6 ('Fluent in 5' from Third Space Learning and/or 'Flashback 4' White Rose materials plus Number Sense to improve number and pattern-seeking skills). EYFS teach arithmetic skills through songs and rhymes outside of their mathematical activities.

Classroom Ethos

1. Everyone can learn mathematics to the highest levels.
2. If you 'can't do it', you 'can't do it yet'.
3. Mistakes are valuable and should be shared/ learnt from (shared on working walls).
4. Questions are important.
5. Mathematics is about creativity and problem solving.
6. Mathematics is about making connections and communicating what we think.
7. Depth is much more important than speed.
8. Maths lessons are about learning, not performing.
9. Working walls should be current, used and show relevant/ appropriate information for each maths unit.

As a result, we may see **less:**

- Daily formal marking with *lots* of written feedback (however, **daily 'live marking' is essential**, with feedback given alongside weekly, more formal marking). During Covid 19, teachers are using more verbal feedback and are using mark sheets *at and throughout* the lesson to gauge learning,

misconceptions and correct mistakes. Mark sheets can then be used effectively to plan for post-teach opportunities.

- Covering lots of ideas in a week.
- Formal, long interventions to boost them out of class.
- Separating children into ability groups.

Impact

The exploration of mathematics should be interactive and engaging, with content made relevant to children's real-world experiences and contextualised thus to support consolidation and retention of knowledge and skill.

Children should approach mathematical study with confidence and enthusiasm, and view tasks and challenges that call for application of varied knowledge across units of work with resilience and a willingness to collaborate.

Approach and response to reasoning activities should improve term on term, with the expectation that by the end of the year, children are happy to accurately define and use mathematical vocabulary introduced by their teacher, as well as complete stem sentences to complete mathematical statements or reasoning.

Teaching and support staff should also see mastery maths as an opportunity to highlight and further improve concepts that have a clear impact on progress and learning, while also analysing and evaluating practice to ensure it is enhanced and strengthened.

Role of the Subject Leader

1. Ensure teachers understand the requirements of the National Curriculum and support them with lesson planning ideas.
2. Lead by example by setting high standards in their own teaching.
3. Lead and signposts CPD opportunities.
4. Lead the whole school monitoring and evaluation of teaching and learning in mathematics by observing lessons, modelling lessons, analysing data, conducting book scrutiny and engaging in pupil conferencing.
5. Take responsibility for managing own professional development by participating in external training, private study, engagement in educational research and reading.
6. Keep parents informed about mathematical issues.
7. Trained staff and monitor the implementation of 'Number Sense' (a programme used as an intervention currently) and Mastering Number.
8. Keep the school policy for mathematics under regular review.
9. To work closely with the head / SLT to further develop and monitor the mastery approach to maths.
10. Work with the Cornwall and West Devon Maths Hub to adjust and refine our curriculum for the children at Lanner.

THE NATIONAL CURRICULUM

Knowledge, Skills and Understanding

In KS1 and KS2, teachers use the National Curriculum for Mathematics (2014) as the basis of our mathematics teaching to ensure complete coverage of all aspects of mathematics. To supplement this further, we use our agreed approach stated in our Maths Calculation Policy, which guides our children through the four operations from EYFS to Y6. This immersion in mathematics from EYFS to Y6 ensures that from an early age, children become competent in mathematics, fostering their ability to:

- Secure number facts, such as number bonds, multiplication tables, doubles and halves
- Calculate accurately and efficiently, both mentally and in writing
- Draw on a range of calculation strategies
- Make sense of number problems, including non-routine 'real' problems
- Develop spatial awareness and an understanding of geometry, statistics and measure.

Breadth of Study

At Lanner Primary School, we believe that mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. We begin this representation exposure in our EYFS

setting. The programmes of study are organised into distinct domains (we use the **White Rose Materials** to ensure coverage, progression and consistency of approach/ models/ images etc.), but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage.

Through careful planning and preparation, we aim to ensure that throughout the school, children are given opportunities for:

- Practical activities with concrete resources and mathematical games.
- Problem solving across the curriculum.
- Individual, group and whole class discussions and activities.
- Open and closed tasks, providing opportunity to investigate mathematical concepts.
- Exploring a range of methods of calculating promoting a breadth of learning.
- Working with computers as a mathematical tool, to support conceptual understanding and exploration of more complex number problems, if written and mental arithmetic are secure.

CROSS-CURRICULAR LINKS

Throughout the whole curriculum opportunities are planned to teach, extend and promote mathematics. Teachers seek to take advantage of all opportunities through cross- curricular mathematical challenges. Teachers ensure that pupils are taught programmes of study in geometry, statistics and measure within a broader, cross-curricular approach.

Assessment

Summative Assessment

Using White Rose Maths Hub termly assessments and half termly teacher assessments, pupils are assessed against their year group objectives every half term. *Baseline tests have also been used since COVID 19, to assess gaps in learning and plan for opportunities to close these gaps.* National Curriculum tests are used at the end of KS1 and 2; teachers use past and sample papers to inform their assessments as they prepare pupils for these assessments. This year we have introduced the use of NFER termly assessments to identify gaps in learning also. These are used to ensure gaps are plugged and addressed throughout the year.

Formative Assessment

White Rose Maths Hub planning and NCETM Mastery Materials help triangulate teacher judgements alongside work in books at the end of each half term. Same day intervention (post- teach intervention) is used through the use of afternoon sessions so that no child is left behind and that they are able to access the learning of the following day.

EYFS

We follow EYFS curriculum guidance for Mathematics. Through this guidance, we are committed to ensuring the confident development of number sense and put emphasis on the mastery of key early concepts. Pupils explore, experiment with and investigate numbers and become aware of key models and images (tens frame, Numicon, part-part whole etc). Teachers use the concrete- pictorial- abstract approach to conceptual development.

SEND

The aim is to ensure that all pupils make progress and gain positivity from each lesson. All teachers aim to:

- Plan lessons so that all pupils can be included.
- Use a range of concrete resources effectively to allow access to whole class or group work.
- Organise the class and deploy staff to support group or individual needs.

For children with a special need in mathematics, their target will be included on their group or Individual Provision Map (IPM), where appropriate.

Equal opportunities

It will be ensured that all pupils will have equal access to the full mathematics curriculum. See the school's Equal opportunities Policy.

Spiritual, moral, social and cultural development

At Lanner Primary School, we recognise that social, moral, spiritual and cultural development (SMSC) is central to the education of all pupils and permeates the whole curriculum and ethos of the school. In Mathematics, we see the following examples of SMSC:

Social

- Children encouraged to work together not only to complete problem solving but also to support in each other's learning.
- Reasoning opportunities are given in order for children to develop their speaking and listening skills.
- Children are encouraged to build upon the reasoning and justification from their peers in respectful and thought-provoking manner.

Moral

- Children are provided with opportunities to use their maths skills in real life contexts, applying and exploring the skills required in solving various problems.

Spiritual

- Children are given opportunities to develop deep thinking and an ability to question the way in which the world works promotes the spiritual growth of pupils.

Cultural

- Mathematics is a universal language with a myriad of cultural inputs throughout the ages.
- Links to numbers, how they work and numerical patterns – including Roman Numerals.

Governor Support

The school's Maths governor is Sarah Brough. Monitoring visits will take place on a termly basis and will be reported back to the Governor's Curriculum Committee, where necessary.

Rosenshine's 'Principles of Instruction', (2012)

These are the key researched-based principles drawn from cognitive science:

1. Daily Review

Daily review is an important component of instruction. It helps strengthen the connection between the material learned. Automatic recall frees working memory for problem solving and creativity.

2. New Materials In Small Steps

Our working memory is small, only handling a few bits of information at once. Avoid its overload - present new information in small steps and then only move forward once each small step has been mastered!

3. Ask Questions

Some of the most successful teachers in the world spend a lot of time in each lesson lecturing, demonstrating and asking questions. By doing this they allow the teacher to determine how well the material is learned.

4. Provide Models

Students need cognitive support to help them learn how to solve problems. Creating models, showing worked examples and having teachers think out loud can all help to clarify the specific steps involved.

5. Guide Student Practice

Students need additional time to rephrase, elaborate and summarise new material in order to eventually store it in their long term memory. The most successful teachers build in time for this in their lessons.

6. Check Student Understanding

Often in classrooms a teacher request of "Are there any questions?" is met with a cacophony of silence and it is assumed that this means there are no problems. This is not the case and the best teachers check on all students.

7. Obtain High Success Rate

A success rate of around 80% has been found to be optimal, showing students are learning whilst they are also being challenged. Better teachers teach in smaller steps followed by practice.

8. Scaffolds For Difficult Tasks

Scaffolds are temporary supports to assist pupil learning. They can include things like modelling, teachers articulating their thoughts out loud, cue cards and checklists. They are part of cognitive apprenticeship.

9. Independent Practice

Independent practice produces 'overlearning' which is a necessary process for new material to be recalled automatically. This ensures no overloading of students working memory.

10. Weekly And Monthly Review

The effort involved in recalling recently learned material embeds it into long-term memory. The more often this happens, then easier it is to connect new material to prior knowledge.