LARKHOLME PRIMARY SCHOOL

Maths Policy 2024-25

Content

- Intent Statement
- What is White Rose?
- Lesson Structure
- Progression statement
- Mixed Age Classes
- EYFS
- SEND, High Attainment Pupils and Intervention
- Classroom Environment and Resources
- Marking and Feedback
- Assessment
- Homework and Parental Engagement
- Monitoring and Evaluation

Intent Statement

At Larkholme, we ensure our children have access to a high-quality maths curriculum that is both challenging and enjoyable. We adopt a concrete, pictorial, abstract approach to help develop a deep understanding of maths in all pupils. We encourage our children to be independent learners, who are not afraid to take risks, so they are able to solve non-routine maths problems without having to memorise procedures. We aim to provide our children with a variety of mathematical opportunities, which will enable them to make the connections needed to enjoy greater depth and fluency in maths and life beyond school.

This will be achieved by providing all children with the same curriculum and opportunities and giving all children the chance to do fluency, problem solving and reasoning for every objective. Children will be given the same opportunities by completing the same task which will be differentiated by support and resources where applicable rather than by task.

Children who require additional help will be given speedy interventions to prevent long term gaps in their learning and to enable them to keep up with their peers.

Further challenges will ensure more able children to be continually challenged in their thinking and in order to gain a greater depth of proficiency and understanding.

Through our provision we aim to:

- Promote enjoyment of the learning of mathematics through practical activity, exploration and discussion.
- Develop confidence and competence with numbers and the number system through rapid recall.
- Develop the children's conceptual understanding in order to solve problems through decision-making and reasoning in a range of contexts.
- Develop a practical understanding of the ways in which information is gathered and presented.
- Help children understand the importance of mathematics in everyday life.

White Rose Maths

As a school we have decided to follow White Rose Maths for children in Key Stage One and Key Stage 2. The White Rose schemes of learning are designed to support a mastery approach to teaching and learning, as well as to support the aims and objectives of the National Curriculum.

The White Rose schemes have number at the heart and a lot of time is spent reinforcing number to build competency. It also provides opportunities to build reasoning and problem solving into each lesson.

White Rose believes that all children, who are introduced to a concept, should have the opportunity to build on their abilities by following a concrete-pictorial-abstract approach.

Concrete – children should have the opportunity to use concrete objects to help them understand what they are doing.

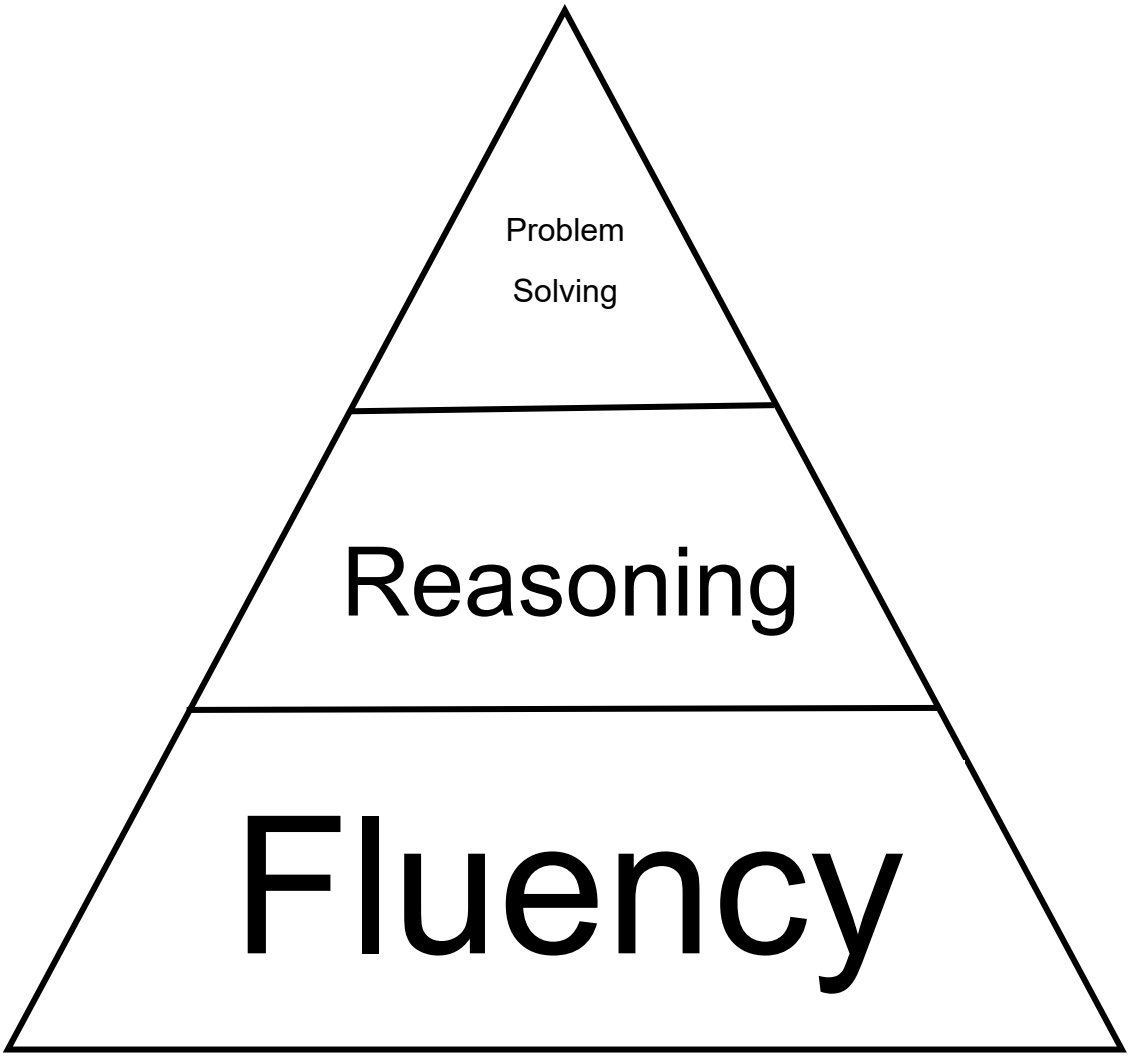
Pictorial – alongside this, children should use pictorial representations. These representations can then be used to help reason and solve problems.

Abstract – both concrete and pictorial representations should support children's understanding of abstract methods.

We believe that giving children time to discuss and verbalise their working is important if they are to move between the concrete, pictorial and abstract. We aim to develop a culture of dialogue in maths where correct answers are questioned and challenged and children learn that there is often more than one way to work something out. Teachers use a variety of strategies to encourage discussions in their lessons. (See Appendix)

Lesson Structure

At Larkholme, we believe that there are three main strands to mathematics. They are: fluency, reasoning and problem solving. Fluency is the foundation of all mathematics, without this, children are unable to reason efficiently and therefore struggle to problem solve. Our mastery curriculum helps children to make sense of mathematical concepts and achieve fluency through carefully structured questions and problems that use conceptual and procedural variation.



We follow the White Rose Scheme of learning which breaks the key National Curriculum into smaller steps. Teachers use the White Rose materials and teaching slides to plan lessons. The teaching slides are adapted to the needs of the class and may be used at various points in the lesson to support learning. Teachers may include extra lessons if needed, to ensure the children have a deep and secure understanding before moving onto the next topic or lesson.

Every lesson starts with a fluency activity which may rehearse prior learning, address gaps in learning from AFL or prepare children for new learning in the lesson. Our Fluency Progression Document supports the planning for this part of the lesson and is made up of counting, rapid recall, mental calculations or a combination of all three. This enables children to develop and rehearse their number sense, knowledge of number facts and ability to choose the most appropriate method for a given task through varied and frequent practice.

The teacher led/guided part of the lesson introduces and teaches the method/concept to the children. Questions are planned to address any misconceptions that may happen before the children begin the task. Children may use concrete apparatus to support their learning and record answers on their desks/whiteboards. During this time, the teacher assesses the understanding of the children to ensure their understanding matches their starting points during the independent session. Some children may receive further input from the teacher before starting their independent work if necessary.

In the independent part of the lesson, all children complete fluency, reasoning and problem-solving tasks. Differentiation is achieved by challenging pupils who grasp concepts quickly with rich and sophisticated problems within the topic. For example, by using problem solving tasks from the 'Deepening Understanding' website or through websites such as Nrich. Children who are not sufficiently fluent, receive extra support to consolidate their understanding before moving on to reasoning and problem-solving tasks. Children who are falling behind are quickly identified and short-term intervention is put in place (see section on intervention).

The teacher will use plenaries at the end of the lesson to consolidate and assess learning. Opportunities for discussing problems and addressing misconceptions will take place. Teachers may also use plenaries for whole class or small groups throughout the lesson in response to the needs of the children.

In KS1, White Rose is supplemented by 'Primary Stars' to support children in a concrete-pictorial-abstract approach to learning.

Our maths curriculum aims follow our ethos for learning by encouraging children to:

Link it: Children are challenged to apply their new learning and use it in different contexts. They should recognise it in new situations and contexts as well as see connections between it and other facts and ideas.

Learn it: Children are encouraged to learn key facts to help them become fluent and confident mathematicians.

Say it: Children are encouraged to use accurate mathematical vocabulary in their explanations. They must explain and convince others why an answer is correct.

Check it: Children should be confident in knowing whether an answer is correct by recognising patterns and relationships between numbers, using inverses and rounding to check their work.

Show it: Children are challenged to prove that they reached the correct answer using alternative methods or representations. They may be asked to prove whether a given answer is correct or incorrect.

Know it: Children will know which method to use and why it is the most efficient.

Work is recorded in maths books (10mm square). Children answer questions from White Rose workbooks and record their answers in their maths book rather than on a worksheet. This enables teachers to be flexible in which questions to set and gives space for children to work their answers out. It also allows supplementary materials to be used alongside the White Rose Scheme. Teachers may photocopy part or all of a worksheet if needed and this will be stuck in the book. If a child completes a deeper challenge, this will be indicated in the maths book by a subheading **'DU'.** For each lesson, children write the numerical date 00/00/00 and LO underneath. Teachers may write a comment if work has been completed practically.

'BLIPPIT' may also be used to evidence practical work in both KS1 and KS2.

Maths At Larkholme

White Rose Maths

At Larkholme, we provide all children with the same curriculum and opportunities and give all children the chance to do fluency, reasoning and problem solving for every objective. Children who require additional help will be giving speedy interventions to prevent long term gaps in their learning and to enable them to keep up with their peers. All children will be given the same opportunities by completing the same task which will be differentiated by support and resources where appropriate.

Plenary

'Mini' plenaries may take place during independent work to support the learning of the whole class or small groups of children. They may also be used address any misconceptions that may arise during the lesson. A whole class plenary at the end of their lesson recaps learning and gives all children the opportunity to discuss problem solving tasks.

Fluency

This is a short activity that rehearses fluency skills learnt in previous lessons and/or prepares children for the new learning in their lesson. The Fluency Progression Document supports planning for this part of the lesson.

Deepening Understanding

This challenges the children to apply their learning further in a different context. Children who have completed all of their reasoning and problem solving move on to a further challenge. We use 'NRICH' challenges and 'Deepening Understanding' problems for these children. They can also be given as a next step challenge.

Teacher Led

This teaches the method/concept to the children. Questions are planned to address any misconceptions that may happen before the children begin the task. Children may use concrete apparatus to support their learning and record answers on their desks/whiteboards.

Independent work

Children are given fluency, reasoning and problem-solving tasks in every lesson. Questions can be selected from the White Rose worksheets according to the needs of individual children as a result of AFL. Additional resources may also be used, for example 'masterthecurriculum', 'NCETM' and 'Testbase'. The fluency questions give the children the opportunity to practise the skill/method that has been taught. Reasoning and problem solving allows the children to apply their learning and tasks are planned so all children can access them.

Morning Maths

Children complete a short maths task during morning registration. This is a combination of arithmetic questions which target specific needs of whole classes or groups of children.

Children in years 1-6 complete 'Big Maths' once a week to practise tables and number bonds and years 2-6 complete a short arithmetic test each week which is used to inform teachers of skills that need practising in the following week's morning maths.

EYFS

In EYFS maths is taught by following 'White Rose'. The teacher gives whole class input and during this time, assesses the understanding of the children. Children who have grasped their new learning continue to practise skills taught through a guided session and continuous provision. Children who do not understand a particular concept, continue working with an adult to support their learning. Children who need a further challenge are also identified by AFL and complete an enhancement activity to further deepen their understanding.

Assessment

Teachers constantly assess children in all parts of the lesson. This ensures that all children are supported or challenged according to their current understanding. Teachers may therefore adapt lessons as they progress to cater for different needs of the children.

At the end of each block, the White Rose end of block assessments are used to assess each child. These are then used to plan for interventions and future learning.

In addition to this, termly White Rose assessments are used in arithmetic and reasoning to determine gaps and plan for future learning and interventions.

Progression Statement

Although we follow the White Rose progressive curriculum and use the 'Small Steps' to plan and support the sequencing of our own lessons, we recognise that due to the diverse needs of our children, we may need to adjust our curriculum to ensure learning in maths can be successful each year. This may involve changing the order of our curriculum, especially in mixed aged classes or by adding extra steps for children/classes who need extra support.

EYFS

Teaching and Learning

In EYFS, maths is taught by following 'White Rose'. White Rose Maths overview for EYFS has been split into number and shape, measure and spatial thinking. Each section starts with an Early Learning Goal. The development matter statements are used to break the ELGs down into smaller steps. This supports our ethos of spending longer on some topics to ensure children have a deep understanding before moving on to the next topic.

Teachers plan using 'White Rose', the 'New EYFS Framework' and 'Early Years Staffroom.' All children receive the same input and work is differentiated through provision. Daily maths lessons focus on the New EYFS Framework – Counting and Numerical Patterns. Each teacher gives whole class input each day to their class. Children then practise new skills taught in provision. They also work with a teacher twice a week to complete a guided maths task. This work is recorded in their maths book. If a child has made a mistake, the teacher will speak to the child, give more input if needed and write 'VF' on their work. Work is not changed if the work is incorrect as it is evidence of a child's understanding at that time.

If a child has not understood new learning, they will receive more input by their teacher or by the other teacher who is working in provision. Children who have grasped their new learning, will continue to practise skills taught in continuous provision – plans are on display in each area with a maths and English focus which the TA will use to support learning. Children who have a deeper understanding will be further challenged through the enhancement area in provision.

We believe that shape and measure is still an important part of a child's mathematical understanding and activities to support this learning are provided as part of our outdoor curriculum. This helps our children transition into new areas of mathematical learning when they move to KS1.

Maths fluency (counting and rapid recall) is also taught regularly throughout the day, which may take the form of counting, rhymes, games and quick-fire questions.

In EYFS, children learn 'number' skills through the NCETM mastering number scheme. The children are exposed to a variety of representations of the numbers 1 – 10. This scheme is delivered purposefully slowly so as to ensure that all children reach a minimum standard of number sense prior to the start of Key Stage 1.

Children in EYFS are also exposed to NumberLand: an area of provision which explicitly teaches each number from 1 to 10.

SEND, High Attaining Pupils and Interventions.

SEND

All pupils who are on the SEND register at Larkholme, have a personalised plan which is updated termly. The children will have personalised targets that are provisions that are put in place to support the child in meeting targets. If the target links to maths, the provisions may be techniques that are put in place to include children in whole class learning or interventions that support the children's learning outside of maths lesson time.

In maths, most SEND children will follow the same lesson structure as others by completing the pre-task and using this to assess their needs. Where written work may not be appropriate for that child, practical learning may take place and a description may be placed in their child's book as evidence of their learning. Cognitive overload is also taken to into account, so the child can focus on a specific learning objective, for example, in problems involving multiplication, a child may be given a times table grid. Most SEND children will be exposed to age-related objectives but how they attempt those objectives will differ as the class teacher scaffolds the learning for their needs.

High Attaining Pupils

Our mastery curriculum allows every child to be challenged appropriately in every lesson. All pupils complete a fluency task as we understand that even high attaining pupils need regular practise; however, more able pupils may complete less of this type of question so they are quickly moved on to more challenging tasks. They may also complete a 'Deeper Understanding' challenge which is planned into every lesson to give the opportunity for greater depth pupils to apply their learning in an unknown and different context. These tasks may come from the 'Deepening Understanding' or 'Nrich' website.

Interventions

Children are regularly assessed throughout lessons. Same-day interventions are put in place wherever possible. End of Unit and End of Term assessments are also used to identify gaps in children's learning. Data analysis from these tests are used to inform interventions. These may take place in the form of:

- Short, targeted support in addition to daily maths lessons.

- Bespoke morning maths.
- Short half-termly targeted support in addition to the maths lesson

Children are reassessed after interventions to monitor impact new targets are set if necessary.

Classroom Environment and Resources

The classroom is used to effectively support pupils learning by:

- Use of visual prompts on a maths working wall
- Promoting and displaying key vocabulary.
- Making good use of a wide range of resources including use of ICT to support and enhance learning. Children are encouraged to select and use the resources they need to help them work out an answer.
- Essential resources for each class are stored in the classroom where they can be accessed easily. Children are encouraged to independently select the resources they need to solve a particular problem or help them with their work. Each table has a box of resources and children have access to these at all times during the lesson. A small number of resources that are used by all classes, e.g. measuring containers are stored in the general store room.
- An audit of resources is carried out every year and class teachers are consulted. The subject leader will then bid and purchase the necessary resources to deliver the curriculum.
- Resources are reviewed regularly to keep in line with any changes to the curriculum or any new maths initiatives. Outside agencies may by contacted to advise with this.
- A list of all the resources in each classroom is on the school server.

Teachers will:

- Enable pupils to make connections between topics and see the 'big picture'.
- Allow time for thinking and encourage discussion.
- Ask probing and open-ended questions to encourage children to think more.
- Make lessons investigational and give children experience of a wide range of problems, not simply word problems.
- Constantly assess each pupil's understanding through questioning, listening and observing.
- Communicate high expectations, enthusiasm and passion about the subject to pupils.

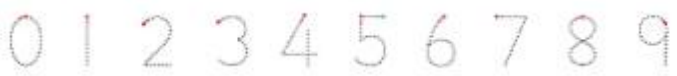
- Have a high level of confidence and expertise both in terms of their specialist knowledge and their understanding of effective learning in mathematics.
- Teaching strategies to ensure that pupils learn exceptionally well.
- Exploit links between mathematics and other subjects and with mathematics beyond the classroom.
- Enable pupils to solve a variety of mathematical problems, applying the mathematical knowledge and skills they have been taught.
- Encourage estimation and checking right through school, again in modelled work, so children see it as an integral part of maths.
- Use a variety of resources and approaches to enable pupils in the class to understand and master the mathematics they are learning.
- Support children in pattern spotting and making links in their learning of mathematical concepts.

Marking and Feedback

- Work will be marked in line with the school's Marking and Feedback.
- Work is marked correct (tick) or incorrect (cross) in green pen. Children are to correct any errors. If there is a misconception, children will receive timely intervention. Children will correct their work in purple pen.
- Incorrect number formation will be highlighted in yellow and the children will correct it in purple pen.
- Incorrect spelling of mathematical vocabulary will be highlighted in yellow and the children will correct it in purple pen.

Number Formation

Numbers to be formed as follows:



Correct number formation will be stuck in the front of each child's maths book for them to refer to as needed.

Assessment

Assessments are linked to the year group end of year expectations, in the National Curriculum 2014.

Teachers gather assessment data on a day to day basis, using children's oral and written responses. White Rose assessment materials are completed at the end of each teaching sequence, which can be used to help teachers assess progress. Data is entered onto the White Rose Excel Spreadsheets so the progress of each child can be tracked by topic area. Assessments are also carried out termly using the White Rose end of term assessments. Data from end of unit assessments and end of term assessments is recorded on 'itrack', which helps teachers and the maths subject leader to monitor the progress of different groups of children.

Children who are not progressing in maths are identified through assessment data analysis and moderation meetings. Targets are set for short term interventions and reviewed regularly. Maths LAPS may be used to support planning interventions to break objectives into smaller steps. Children are assessed at the end of intervention so the impact can be measured.

Children are tested formally in Year 2 SATS and Year 6 SATs.

Children in KS1 and KS2 are given a maths target linked to table or maths fluency. This is practised as part of the fluency part of a maths lesson, in morning maths or as part of maths homework. Children are regularly assessed and new targets are set. Targets are recorded in the front of each child's morning maths book.

Homework and Parental Engagement

Homework

Homework is set by the class teacher to help reinforce and practise the skills that have been previously taught. Homework is set through MathsShed. Parents are informed of tasks set each half term. Children who do not have access to the internet at home are given opportunities in school to complete their homework or given a paper copy of work set.

Parental Engagement

Parental support and involvement is important in helping children make progress.

Parents are encouraged to help with homework tasks are informed about how they can help their child in maths at meet the teacher meetings, parents' evenings, maths workshops and on the school website.

Monitoring and Evaluation

The subject leader will monitor and evaluate the quality of teaching and learning in maths by:

- Carrying out book scrutiny and ensure that work is compliant with all policies including marking and feedback.
- Pupil conferencing.
- Regularly visiting classrooms and observing teaching through learning walks.
- Collating and analysing assessment data and validating teacher assessments with members of the Senior Leadership Team.
- Monitoring homework provision.

The subject leader will provide feedback to ensuring continuous school improvement by:

- Using all monitoring and evaluation outcomes to inform future action planning including the identification of CPD needs and providing INSET for others.
- Provide verbal and written feedback on monitoring activities and offer support and advice for improvement.
- Challenge any provision which falls below their high expectations and provide a model of good practice and follow up any actions to ensure that improvement has been secured.
- Report to the Senior Leadership Team on standards in their subject and the impact of any improvement measures they have undertaken.
- Use all monitoring and evaluation outcomes to inform future action planning including the identification of CPD needs and provide INSET for others.

This policy should be used in conjunction with, but not limited to; the assessment policy, marking and feedback policy, SEND policy and presentation policy.

Policy updated December 2023

Policy to be reviewed December 2024

Signed (Headteacher)

Signed (On behalf of the governing body)

Appendix

Ways of supporting language development in maths:

- Sentence stems
- Talk partners
- Full sentence explanations
- ABC – I agree because, I'd like to build on _____'s answer, I would like to challenge _____'s answer
- Star vocabulary