



# Maths Policy

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## **The current National curriculum document says:**

“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. Those who are not sufficiently fluent with earlier material should consolidate their understanding, this maybe through additional practice, before moving on.’ (National curriculum page 3)

## **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 nonroutine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

At Larkhill, we feel the best way to achieve the aims set out by the National Curriculum is a Mastery Approach.

## **What do we mean by Mastery?**

The essential idea behind mastery is that all children need a deep understanding of the mathematics they are learning so that:

- Future mathematical learning is built on solid foundations which do not need to be re-taught;
- There will ultimately no need for separate catch-up programmes due to some children falling behind;
- Children who, under other teaching approaches, can often fall a long way behind, are better able to keep up with their peers, so that gaps in attainment 3 are narrowed while the attainment of all is raised.

At Larkhill we view the Mastery approach as a set of principles and beliefs. This includes a belief that all pupils are capable of understanding and doing mathematics, given sufficient time. With good teaching, appropriate resources, effort and a ‘can do’ attitude all children can achieve in and enjoy mathematics.

## **Mastery and Mastery with greater depth**

Integral to mastery of the curriculum is the development of deep rather than superficial conceptual understanding. ‘The research for the review of the National Curriculum showed that it should focus on “fewer things in greater depth” in secure learning which persists, rather than relentless, over-rapid progression.’ It is inevitable that some pupils will grasp concepts more rapidly than others and will need to be stimulated and challenged to ensure continued progression. However, research indicates that these pupils benefit more from enrichment and deepening of content, rather than acceleration into new content.

Acceleration is likely to promote superficial understanding, rather than the true depth and rigour of knowledge that is a foundation for higher mathematics.

At Larkhill, we believe mastery and mastery with greater depth are used to acknowledge that all pupils require depth in their learning, but some pupils will go deeper still in their learning and understanding. We feel Mastery of the curriculum requires that all pupils:

- Use mathematical concepts, facts and procedures appropriately, flexibly and fluently;
- Recall key number facts with speed and accuracy and use them to calculate and work out unknown facts;
- Have sufficient depth of knowledge and understanding to reason and explain mathematical concepts and procedures and use them to solve a variety of problems.

To support this, we believe that if a pupil really understands a mathematical concept, idea or technique he or she can:

- Describe it in his or her own words;
- Represent it in a variety of ways (e.g. using concrete materials, pictures and symbols)
- Explain it to someone else;
- See connections between it and other facts or ideas;
- Recognise it in new situations and contexts;
- Make use of it in various ways, including in new situations.

### **The Most Able children**

Although we encourage challenge for all through the mastery approach, we ensure that “Rapid Grasping” children are given the opportunity to master at a greater depth within the lesson. We also recognise that ability is not fixed and that all children should have the opportunity to deepen their understanding in all lessons. We believe if a child is developing mastery with greater depth the child can:

- Solve problems of greater complexity (i.e. where the approach is not immediately obvious), demonstrating creativity and imagination;
- Independently explore and investigate mathematical contexts and structures, communicate results clearly and systematically explain and generalise the mathematics. These children are given the opportunity to show a greater depth of mastery through daily ‘Deepen It’ tasks.

### **What a Maths lesson looks like at Larkhill.**

To ensure coverage and progression across year groups; at Larkhill we follow the “Can Do” maths programme. “Can Do Maths” believes that all students, when introduced to a key new concept, should have the opportunity to build competency in this topic by taking this approach:

- Concrete – students should have the opportunity to use concrete objects and manipulatives to help them understand what they are doing.
- Pictorial – students should then build on this concrete approach by using pictorial representations. These representations can then be used to reason and solve problems.
- Abstract – with the foundations firmly laid, students should be able to move to an abstract approach using numbers and key concepts with confidence. This belief is reflected in lessons across the school and teachers will use a range of resources to scaffold learning.

## **Maths lessons have:**

- A hook
- A “teach it” part – the teacher will scaffold the learning for the class, so children can look at examples of the process
- A “practise it” part where children have the opportunity to deliberately practise the new concept.
- Children will “Do it” using fluency of that concept, this can be by using manipulatives to support that concept. 5 questions are intelligently designed to ensure they include ‘what it is” and “what it also is “to ensure children can apply conceptual understanding or procedural understanding even when it is presented in different ways.
- The “secure” it part of the lesson will also look at ‘what it is not’ Children have the opportunity to deepen their understanding by correcting misconceptions and applying the stem sentence.
- Children may then also “deepen it” providing them with the opportunity to investigate/explore the concept, apply in a new context or make links with other maths skills.

## **Manageable Steps:**

To support this approach, Maths lessons are split into manageable steps of learning with the emphasis that learning is at a measured pace. This will better ensure that children “keep up” rather than “catch up” and will also provide a deeper and richer experiences for children who are above the national expectation for their age. We focus on the majority of children achieving what is expected of their age group and not going beyond this. Manageable steps are tracked across terms and across the year in a comprehensive road map which builds progressively.

## **Maths On Track Sessions:**

Following on from the main teaching session a separate maths on track session serves two purposes.

- To give children the opportunity to deliberately practised previously taught skills in order to support long term memory.
- To provide an opportunity to close gaps/support learners who needs additional support after the main teaching session- ideally same day/next day intervention

## **Assessment:**

Assessment for learning during the session combined with “marking in the moment” ensures that teachers have a clear idea at the end of each session about who needs further support in an MOT session and who is ready to move on.

At the end of a unit “Remember its” assessments are used to assess pupils understanding. The QLA grid is used by teachers and subject leaders to inform next steps for the cohort and also for individuals.

Ready to progress tests are used 4 times a year to asseschildren’s learning and progress. QLA is used by teachers and subject leaders to inform intervention.

Marking of maths in outlined in more detail in our School marking policy however we ensure that the marking and evidence-recording strategies should be efficient, so that they do not steal time that would be better spent on lesson design and preparation. Where possible marking happens “in the moment” to ensure that it has the maximum impact on the individual.