What makes me a mathematician?

Lambley Primary School

Be ready, respectful and resilient

Lambley Primary School: Maths subject audit

Date	1	2	3	4
1 :immediate action needed– add to action plan, 2: underdeveloped, 3: planned and beginning to be embedded (time is needed to fully embed), 4: fully embedded in my subject				
Quality of Education				
Intent				
Does your subject reflect a coherent rationale for the school's broad and balanced curriculum?				x
Is there a carefully sequenced progression of Maths knowledge/concepts/skills to end of KS1/2				x
Does your unique Maths curriculum meet your pupils' needs & meet N.C standards?				X
Curriculum coverage allows all pupils to access content & make progress				X
Clear identified targets are shown through the Curriculum Development plan				X
Implementation				
Teachers can explain what children learn/why it's important in your subject's curriculum				X
Subject leader's review / quality assure LTP and Unit Plans and check against in book looks to ensure implantation of intent				X
Teachers understand what the depth of knowledge expected is at the end of every unit / year				X
Subject leaders show knowledge and expertise to design, support and deliver the curriculum through the development of planning and support given to teachers				X
Book looks, working walls and pupil voice show that your subjects' curriculum is implemented fully				X
Teachers organise and sequence learning appropriately – shown in unit plans and LTPs				X
There are opportunities for CPD support to upskill teachers in knowledge and skills for your subject				X
Subject leaders, teachers and pupils are clear on how units are assessed and how progress is shown				X
Differentiation is appropriate to enhance all pupils' capacity to access the full curriculum				X
Use of the locality are maximized to provide first-hand experience within your subject.		X		
Pupils use appropriate resources for your subject to build knowledge and skills				X
Clear understanding of what progression looks like in and across each year group – progression of vocabulary is explicit				X
Opportunities for all staff to moderate/ share / feedback on work				X
Impact				
Pupils have embedded and retained fluent knowledge in your subject's knowledge, skills and vocabulary (in and across years)				X
Children have progressed in different strands of your subject and this is clear from book look and pupil voice				X
Subject books show children voice, learning and progress through examples of work, images etc				X

Why is Maths important at our school? (Vision Statement)

Intent:

The basic skills of mathematics are vital for the life opportunities of our children. Our aim is for all children to think mathematically, enabling them to reason, solve problems and assess risk in a range of contexts.

At Lambley Primary School, our Mathematics Mastery curriculum has been developed to ensure every child can achieve excellence in mathematics. Children can experience a sense of achievement and pride as they solve a problem for the first time, discover different solutions and make links between different areas of mathematics. It provides pupils with a deep understanding of the subject through a concrete, pictorial and abstract approach. This ensures pupils fully understand what they are learning.

Aims

- To implement the current legal requirements of the Foundation Stage (FS) and the National Curriculum (NC).
- To foster positive attitudes, fascination and excitement of discovery through the teaching and learning of mathematical concepts.
- To ensure pupils become fluent in the fundamentals of mathematics, developing conceptual knowledge and an ability to recall and apply knowledge rapidly and accurately
- To ensure that pupils can reason mathematically and solve problems
- For our children to develop a 'can do' attitude and perceive themselves as mathematicians.
- To broaden children's knowledge and understanding of how mathematics is used in the wider world.
- For our children to use and understand mathematical language and recognise its importance as a language for communication and thinking.

Implementation:

Planning

At Lambley, we use the White Rose Mathematics resources to support us in our planning.

- Long term plans map out the units to be covered each term, during each Key Stage.
- Medium term plans identify learning objectives and outcomes for each unit, as well as indicating the skills being taught.
- Short term plans highlight the skills and objectives of the lesson, a range of questions and images to challenge the children and a series of small steps to help the children to achieve the objective.

Fluency in Number (including Times Tables) Scheme

Effective understanding and recall of number bonds and times tables is the foundation of most of the mathematics children will do at primary school and the mathematics curriculum requires children to be fluent in number skills. Our number bonds and times tables scheme is based on the time and knowledge requirements of the Year 4 Multiplication Check but also includes inverse operations, a range of representations and problem solving, particularly in the higher level tests. The children are tested weekly and our challenge is linked to beating superheroes which engages and enthuses the children.

Assessment

In Mathematics Mastery assessment is continuous. From the beginning of every lesson, teachers and teaching assistants will be assessing what their pupils are, or are not understanding and use this to scaffold each segment of the lesson. Interventions will be both planned for and 'live', meaning that misconceptions are dealt with immediately and high attaining pupils are challenged appropriately. Pre and post teaching (weekly, or using recaps in lesson time) ensures that all children can achieve and are prepared for subsequent sequences of lessons.

EYFS

Teachers and teaching assistants in the Foundation Stage make observational assessments early in Autumn Term 1 to ascertain a baseline which then informs subsequent teaching and learning for each child. Future attainment is noted using photographs and observational notes. Progress is recorded in each child's Learning Journey and the next steps to be taken are identified. Progress is then monitored termly. Statutory assessments are made on entry and on exit of the Foundation Stage.

KS1 and KS2

In the daily mathematics lesson, formative assessments are made on a day-to-day basis. Practitioners observe, question and evaluate lesson outcomes to further determine progress made and the next steps in learning. Assessments take place at the end of each unit of work to allow further intervention for children who need more time on a particular concept. Summative assessments are made at the end of each term to monitor children's knowledge and understanding of concepts taught. White Rose Mathematics Hub tests are used in all year groups from 1 – 6 although year 2 and 6 teachers may also use past SATs papers in Autumn and Spring term. Progress is discussed at termly 'Pupil Progress Meetings' and focus children are indicated. Statutory assessments are made at the end of each key stage.

Reading across the curriculum:

Reading in mathematics is vital for children to understand different concepts and apply it to their understanding of the world. Children will be exposed to mathematical vocabulary on a daily basis to allow them to recognise and use the correct mathematical terms, which they are expected to employ when explaining ideas and answers. In addition, children will be expected to read numbers written as words and other important vocabulary, such as hundreds, tens, ones, half, equal, add, subtract and so on. In daily lessons, children are exposed to problems written in words and it is critical that they use the reading skills they have learnt to read for meaning and decipher unfamiliar words, in order to solve problems successfully.

Impact:

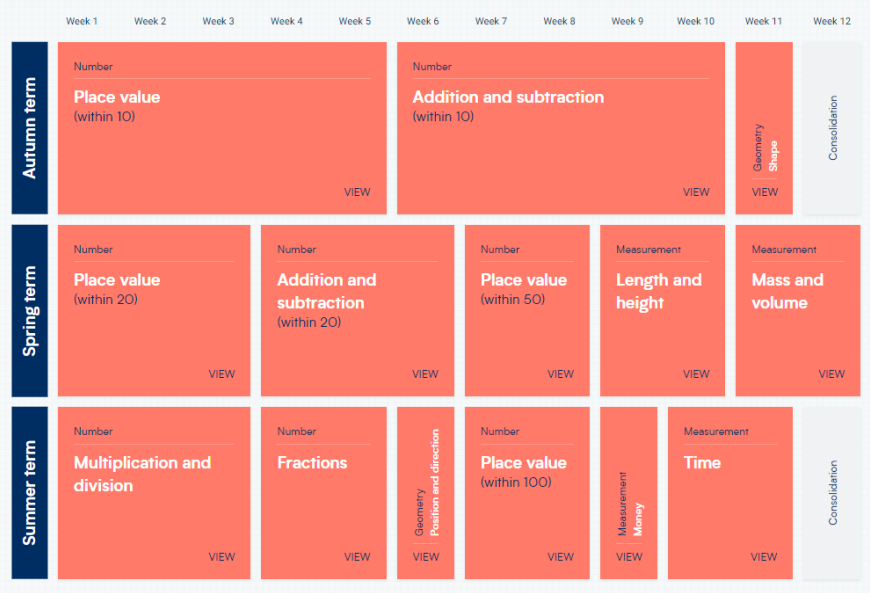
Key features of our Maths Mastery curriculum.

- High expectations for every child
- Fewer topics, greater depth
- Number sense and place value come first
- Focus on mathematical thinking and language
- Resources to support
- Problem solving in different contexts is central
- Calculate with confidence– understand why it works

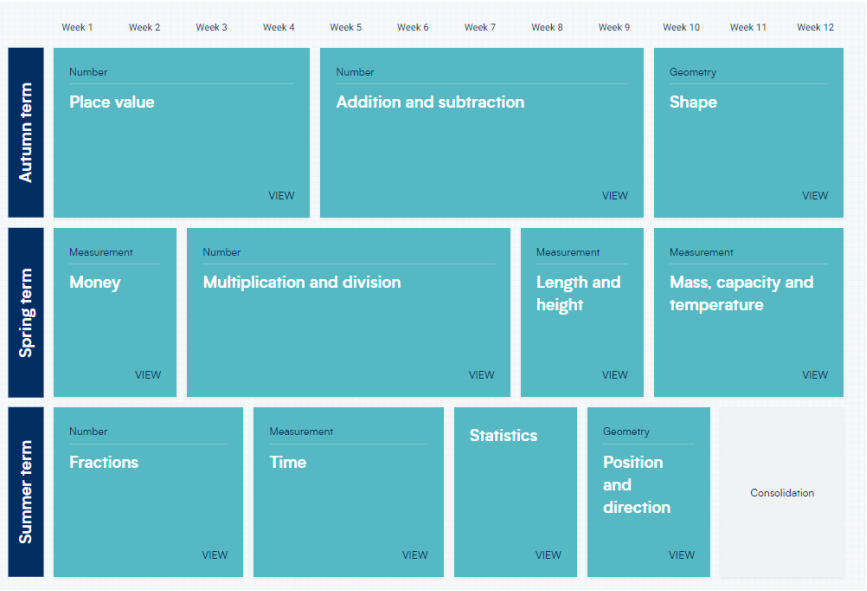
Mathematics Mastery places emphasis on the cumulative mastery of essential knowledge and skills in mathematics. It embeds a deeper understanding of maths by utilising a concrete, pictorial, abstract approach so that pupils understand what they are doing rather than just learning to repeat routines without grasping what is happening.

White Rose Long-Term Plans

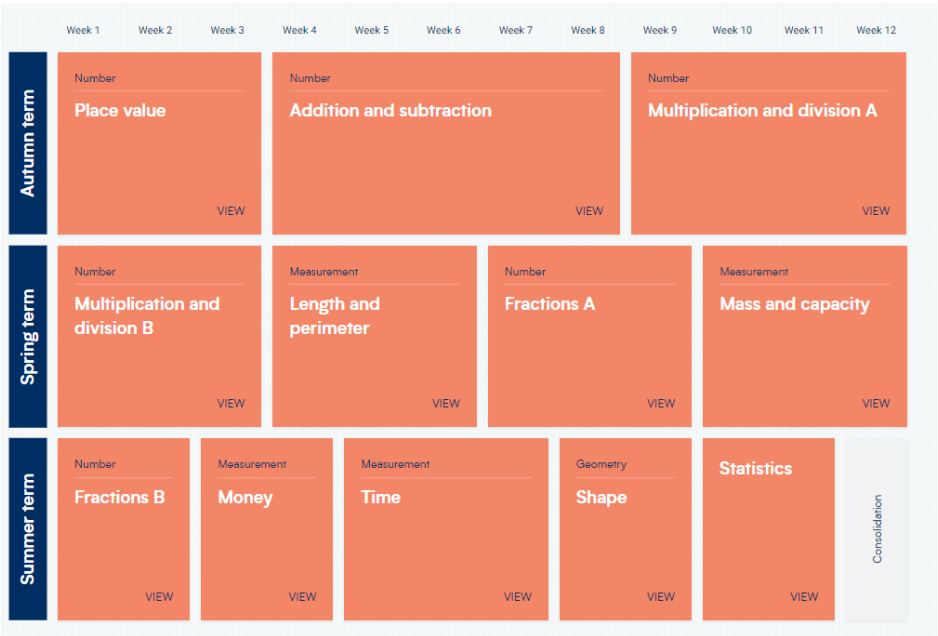
Year 1



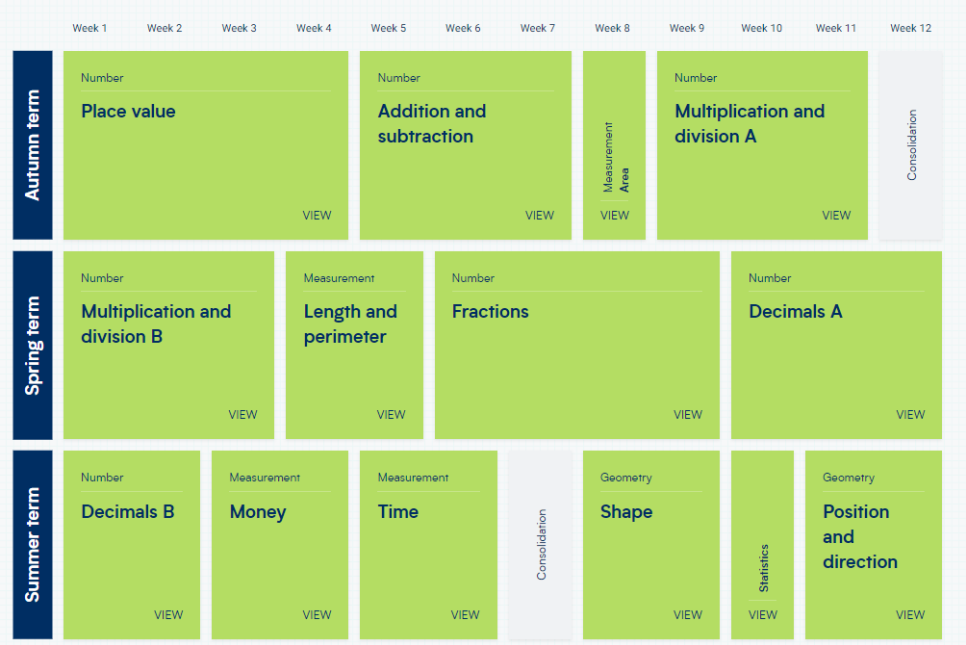
Year 2



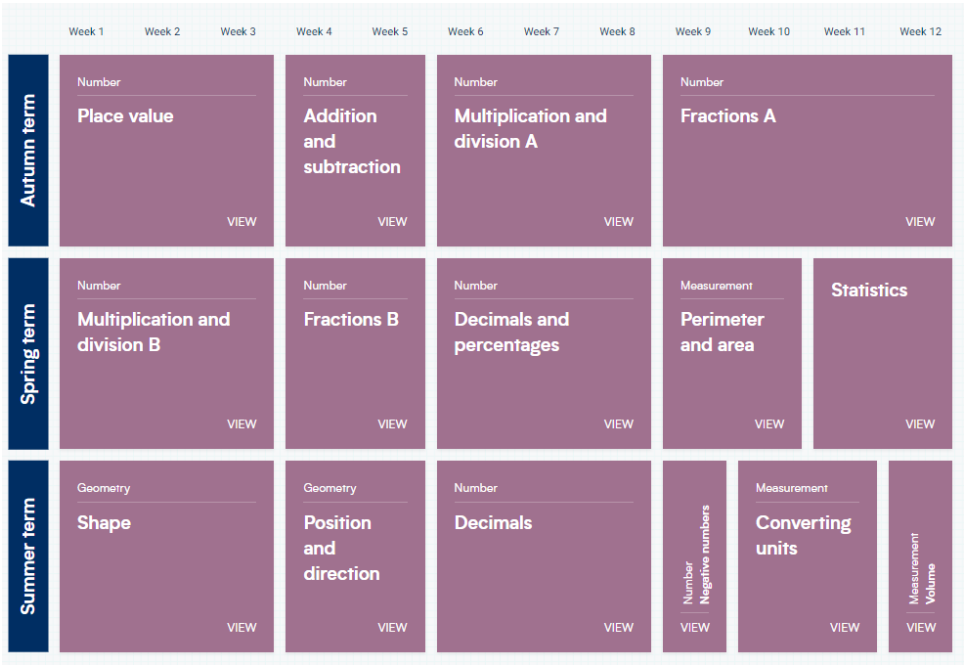
Year 3



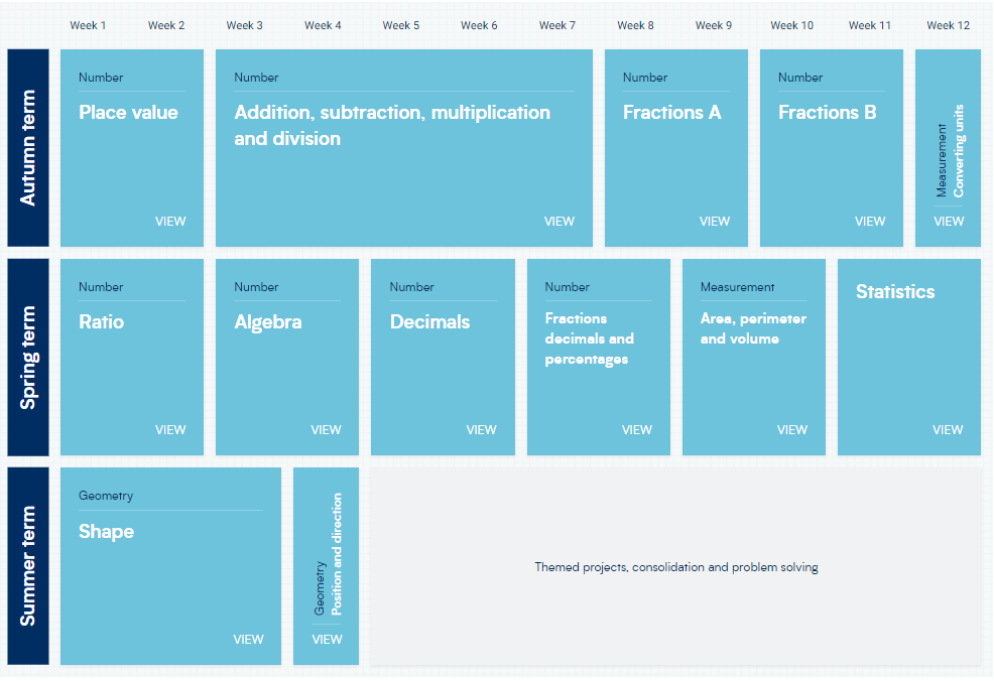
Year 4



Year 5

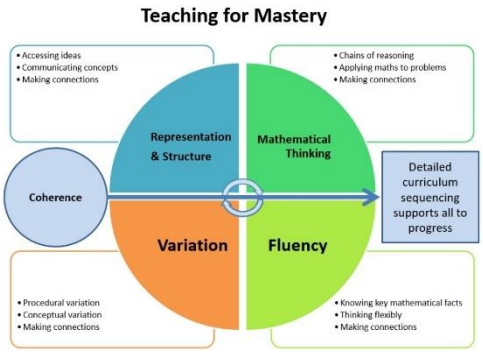


Year 6



Influenced, inspired and informed by the work of leading maths researchers and practitioners across the world, White Rose Maths brings together a team of highly experienced and passionate maths teaching experts to train, guide, help and support all those who want to make change happen. They offer in-depth training programmes, a vast bank of clear, practical resources (many of them free of charge), and bespoke support.

What are the five big ideas for mastery?



Coherence

Teaching is designed to enable a coherent learning progression through the curriculum, providing access for all pupils to develop a deep and connected understanding of mathematics that they can apply in a range of contexts.

Representation and Structure

Teachers carefully select representations of mathematics to expose mathematical structure. The intention is to support pupils in 'seeing' the mathematics, rather than using the representation as a tool to 'do' the mathematics. These representations become mental images that students can use to think about mathematics, supporting them to achieve a deep understanding of mathematical structures and connections.

Mathematical Thinking

Mathematical thinking is central to how pupils learn mathematics and includes looking for patterns and relationships, making connections, conjecturing, reasoning, and generalising. Pupils should actively engage in mathematical thinking in all lessons, communicating their ideas using precise mathematical language.

Fluency

Efficient, accurate recall of key number facts and procedures is essential for fluency, freeing pupils' minds to think deeply about concepts and problems, but fluency demands more than this. It requires pupils to have the flexibility to move between different contexts and representations of mathematics, to recognise relationships and make connections, and to choose appropriate methods and strategies to solve problems.

Variation

The purpose of variation is to draw closer attention to a key feature of a mathematical concept or structure through varying some elements while keeping others constant.

- Conceptual variation involves varying how a concept is represented to draw attention to critical features. Often more than one representation is required to look at the concept from different perspectives and gain comprehensive knowledge.
- Procedural variation considers how the student will 'proceed' through a learning sequence. Purposeful changes are made in order that pupils' attention is drawn to key features of the mathematics, scaffolding students' thinking to enable them to reason logically and make connections.

How will we know the children learn well in Maths at our school?

How well do children learn in Maths?	Evidence
Pupils can use the knowledge and vocabulary they have learnt to verbally articulate their understanding. They show that they can retain facts.	Child-led Book Looks Pupil voice
Pupils can use knowledge they've learnt and transfer to a structured piece of writing. Showing they can retain facts and show an understanding of their learning.	Book Looks Pupil voice
Pupils use working walls effectively to show how they are building on prior learning and using current knowledge and vocabulary to develop understanding.	Work scrutiny Pupil voice Homework Displays
Pupils show a natural curiosity for their topic	Pupil voice Homework Classroom visits
Use of progression documents allows pupils' skills to develop through year groups	Work scrutiny Pupil voice Topic Plans Progress Planners