

Key Stage 1

Kirkby Woodhouse Primary School



Maths Curriculum
September 2022

Purpose of study

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.

Aims

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 non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

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, by necessity, organised into apparently 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 to science and other subjects.

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, including through additional practice, before moving on.

Maths at Kirkby Woodhouse School

At Kirkby Woodhouse School, we teach maths for an hour each day following the National Curriculum. We use a variety of stimuli such as games, quizzes, investigations and challenges to excite and motivate the children. Pupils are always encouraged to 'have a go' and 'try', knowing that they are working in an environment where it is safe to test out ideas and make mistakes. We focus on using and applying through teaching mathematical concepts in calculation and application through inspirational investigations and problem solving. Arithmetic maths skills are embedded in lessons and focused on throughout each lesson. Children are encouraged to develop their own efficient methods and to share these with others.

During lessons, pupils record their work in a variety of ways, including written methods and pictorially; as well as using white boards and cameras. Children are encouraged to use manipulatives to represent their ideas in a concrete way before expressing ideas in an abstract manner. They have practical 'hands on' experiences while being sufficiently supported and extended. Pupils have the opportunity to work individually, in pairs and small groups, discussing their work with reasoning and questioning. Flexible grouping during some lessons allows children to be supported or challenged accordingly.

The curriculum is organised across KS1 based on the new White Rose Maths scheme. A variety of resources are used to teach year group objectives and children are further assessed at various end points in each topic. High challenge is given across the year group objectives with opportunities to revisit previous years to 'Zap Gaps'. Equally, children are given the opportunity to work at greater depth to embed knowledge from their year group objectives.

Long Term Maths Planning

Each maths block is organised following the new White Rose maths planning. Some blocks are in a slightly different order or run for longer depending on the needs of the children. This is decided by continuing assessment of the children's work. The blocks of work integrate with the three main areas of the curriculum, which are:

1. Fluency
2. Mathematical Reasoning
3. Problem Solving

KS1 Approach to teaching maths

The approach to maths at Kirkby Woodhouse school is an objective-based curriculum, that aligns closely with White Rose Maths.

Maths is taught in topics across KS1 with objectives grouped into topic areas (e.g. relating to addition or fractions). Teachers should use the planning timetables from the White Rose Maths planners as a guide to how long to spend on each topic area. The amount of time given to a topic will depend upon the level of knowledge and understanding the children have at the start of each topic and ongoing assessment throughout the topic. Teachers will use children's individual assessments, the ongoing learning/progress in lessons and their professional judgement to judge the length of time for each topic as appropriate for their class. 'Zap the Gap' (ZTG) and guided group work will also take place during lessons or as an intervention group to support/challenge individuals or groups of children as appropriate to their needs.

Teachers will use a range of resources (White Rose, twinkl, games, interactive tasks, practical tasks, specifically made worksheets, group and individual work) to differentiate tasks for children in their class. In all cases, children should be taught the year group objectives relevant to their year group, even if work is then differentiated down to address missing knowledge. As the topic area is taught, teachers use ongoing assessment (daily marking, questioning, mini assessments) to mark achievement across the objectives. This will form ongoing formative assessment for maths.

For high challenge for our more able/gifted and talented pupils, teachers will make opportunities and will plan activities to broaden their understanding and applying skills.

ASSESSMENT

As children complete work, formative assessments will take place on a daily basis. This will take the form of daily marking and feedback, questioning, intervention groups and teacher/ teaching assistant and pupil discussions. Children will be assessed summative using NFER test (Y1) and past SATs papers (Y2) at the end of each term.

MASTERING NUMBER PROGRAM

The NCETM introduced the Mastering number program last year which as a school we followed in Reception and KS1. The programme aims to strengthen the understanding of number, and fluency with number facts, among children in Reception and Years 1 and 2.

Over 5,400 primary schools across England took part in the programme's inaugural year (2021/22), with glowing praise received from participating teachers on the impact it had on their pupils:

- *There has been a noticeable and marked improvement in the speed and accuracy of children's subitising skills and knowledge of number bonds.*
- *Children are talking more about the relationships between numbers and using this to solve problems more confidently.*

- *Thank you for high quality training and resources.*
- *My lower confidence children are able to recognise patterns and subitise.*

We will continue to follow the mastering number program this year in KS1. Year 1 children will carry out the program for 4 sessions a week lasting for 15 minutes each session. Year 2 will follow the program by undertaking 2 sessions a week for 20 minutes each. This will happen outside of the daily maths lesson.

READY TO PROGRESS (RtP)

The NCETM have produced a wide number of objectives to be taught to each year group in KS1 ensuring that children are equipped with skills to take them forward to the next year group. We used these during Covid recovery, and they have proved to be very successful across the key stage. We will continue to use the RtP materials and methods routinely in Year 2. The thinking behind this is to use the RtP as a revisit of key concepts close to the point of teaching. RtP should take place for 20 minutes on 2 afternoons during the week in Year 2.

Year 1 – Long Term Plan

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Assessment	Mastering Number	Mastering Number	Mastering Number	Mastering Number	Mastering Number	Mastering Number	Mastering Number	Mastering Number	Mastering Number	Mastering Number	Mastering Number
	Number: Place Value (within 10)					Number: Addition and subtraction (within 10)					Geometry Shape	Consolidation
Spring	Mastering Number	Mastering Number	Mastering Number	Mastering Number	Mastering Number	Mastering Number	Mastering Number	Mastering Number	Mastering Number	Mastering Number	Mastering Number	Mastering Number
	Number: Place Value (within 20)			Number: Addition and subtraction (within 20)			Number: Place Value (within 50)		Measurement: Length and Height		Measurement: Weight and Volume	
Summer	Mastering Number	Mastering Number	Mastering Number	Mastering Number	Mastering Number	Mastering Number	Mastering Number	Mastering Number	Mastering Number	Mastering Number	Mastering Number	Mastering Number
	Number: Multiplication and Division			Number: Fractions		Geometry: Position and Direction	Number: Place Value (within 100)		Measurement: Money	Measurement: Time		Consolidation

Year 2 – Long Term Plan

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Assessment	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP
	Number: Place Value				Number: Addition and Subtraction				Geometry: Shape			
Spring	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP
	Measurement: Money	Number: Multiplication and Division					Measurement: Length and Height		Measurement: Mass, Capacity and temperature			
Summer	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP	Mastering number RTP
	Number: Fractions			Measurement: Time			Statistics		Geometry: Position and Direction		Consolidation	