

Kirkby Stephen Primary School



Mathematics Policy 2022-2025

Subject Leaders: Clara Allinson and Hannah Maloney

Approved by KSPS Governing Body	
Name:	Mrs Elizabeth Paisley
Position:	Chair of Governors
Signed:	
Date:	10 th March 2022
Proposed review date:	March 2025

POLICY FOR MATHEMATICS

1. Intent

Our intent is to create enthusiastic creative and articulate mathematicians, to develop children's problem solving, resilience and reflective skills that can be easily transferrable across the curriculum. Mathematics lessons are a time to make mistakes in a supportive and safe environment where children are supported to discuss misconceptions with their peers and staff alike. Mathematics at Kirkby Stephen Primary School equips pupils with the uniquely powerful set of tools to understand and change the world. These tools include; logical reasoning, problem solving skills and the ability to think in abstract ways. Mathematics creates an ethos and understanding of how mathematics is integral to all aspects of life and where children are always encouraged to delve deeper into their understanding of mathematics and how it relates to the diverse world around them. Maths prepares pupils for their next stage of mathematical learning and to be able to apply their mathematical knowledge in everyday situations.

2. Implementation

To help structure and plan our lessons, we use White Rose Maths Hub schemes of learning to ensure firm foundations and sequence our learning. Alongside the SOL, we use a range of rich resources to enhance our lessons and deepen understanding from websites such as NCETM, Testbase and Nrich. To supplement our learning here at Kirkby Stephen Primary School, children have access to various learning platforms including Times Table Rock Stars and Espresso Education.

By Year 4, children should be able to recall their multiplication facts up to 12×12 . To help them develop these skills, children can log on to Times Table Rockstars using their username and password.

3. Impact

By the time our children leave Kirkby Stephen Primary School, they will have been prepared for their future in and outside of education so they can become successful in whatever they pursue. Our rich and broad mathematics curriculum aims to make the children enthusiastic about learning mathematics and gain an understanding of its importance in everyday life.

4. Overview

Mathematics at our school is based on the National Curriculum for Mathematics (Department for Education, 2014) for year groups 1 to 6.

The Early Years Foundation Stage Framework (DfE, 2021) informs mathematical learning in the Early Years Foundation Stage.

The programmes of study are used to give a balanced and broad curriculum to all of our pupils; this includes the statutory and non-statutory aspects of the curriculum and EYFS framework.

5. Aims

The three aims of teaching mathematics at Kirkby Stephen Primary School are the same as those of the National Curriculum for Mathematics (DfE, 2014). We aim 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.
Through fluency, reasoning and problem solving, we believe that children can access a mastery curriculum.

In the Early Years Foundation Stage, Mathematics is one of the four specific areas which providers must support children with. At Kirkby Stephen Primary School we support the same aims as in the Early Years Foundation Stage Framework (DfE, 2021).

EYFS Statutory Educational Programme:

“Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers.”

“By providing frequent and varied opportunities to build and apply this understanding – such as using manipulatives, including small pebbles and tens frames for organising counting – children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures. It is important that children develop positive attitudes and interests in mathematics, look for patterns and relationships, spot connections, ‘have a go’, talk to adults and peers about what they notice and not be afraid to make mistakes.”

In addition to these aims, we also strive for children to develop:

- a positive and enthusiastic attitude towards mathematics
- competence and confidence in using and applying mathematical knowledge, concepts and skills
- an ability to solve problems, to reason, to think logically and to work systematically and accurately
- an ability to use mathematics across the curriculum and in real life
- a deep and lasting interest in mathematics

6. Breadth of study

Careful planning and preparation ensure that children throughout the school engage in:

- practical activities and games that using a variety of resources
- problem solving to challenge thinking
- individual, paired, group and whole class learning and discussions
- purposeful practise where time is given for them to apply their learning
- open and closed tasks
- a range of methods of calculating e.g. mental, paper and pencil and using a calculator
- working with computers as a mathematical tool

Through our creative approach to teaching and learning we also seek to explore and utilise further opportunities to use and apply mathematics across all subject areas ensuring cross curricular links.

7. Planning

Fluency, reasoning and problem solving are at the heart of planning mathematics at Kikrby Stephen Primary School. Each lesson should provide an opportunity for children to deepen their mathematical understanding.

Our approach to planning is based on a thorough understanding of children's needs, gleaned through effective and rigorous assessment and tracking through White Rose and ScholarPack.

Long Term Planning

The National Curriculum for Mathematics 2014, Development Matters and the Early Learning Goals provide the long term planning for mathematics taught in the school.

Medium Term Planning

Years 1-6 use the White Rose Maths Hub schemes of learning as their medium term planning documents. These schemes provide teachers with exemplification for maths objectives and are broken down into fluency, reasoning and problem solving, key aims of the National Curriculum. They support a mastery approach to teaching and learning and have number at their heart. They ensure teachers stay in the required key stage and support the ideal of depth before breadth. They support

pupils working together as a whole group and provide plenty of time to build reasoning and problem solving elements into the curriculum.

Short term planning

All classes have a daily mathematics lesson where possible. In key stage one lessons are 45-60 minutes and in key stage two at least 60 minutes. Teachers of the EYFS ensure the children learn through a mixture of adult led activities and child initiated activities both inside and outside of the classroom. Mathematics is taught through an integrated approach.

8. Teaching and Learning

Concrete, Pictorial, Abstract

Children are encouraged to use many representations to develop a deep conceptual understanding of mathematical ideas. Throughout the entire school, concrete, pictorial and abstract resources are used to provide a route to understanding. The school's calculation policy provides more information about the resources that are used.

Foundation Stage

Teaching and learning promotes social skills and develops the mathematical understanding of young children through stories, songs, rhymes and games, but in a mastery approach. Both imaginative play and outdoor play allow opportunities to develop many skills by using a range of resources, which enables children to learn about shape, space and measure. Practical equipment, such as Numicon, provides children with opportunities to develop and improve their skills in counting, understanding and using numbers and calculating simple addition and subtraction problems. By the end of Reception, the children should be prepared for the dedicated maths lesson of about 45 minutes.

KS1 and KS2

We use a mastery approach to teaching maths. All children are accessing the same work so that no child is left behind. Small steps are taken so that children build up fluency, for example KS2 cover their basic skills daily during Mini Maths and then they apply this to problem solving and reasoning.

Children and teachers use ICT in mathematics lessons where it will enhance their learning, and to assist with modelling ideas and methods. Wherever possible, we encourage children to use and apply their learning in everyday situations.

Times Tables

From Year 2 onwards, children are expected to learn times tables by heart. In order to prepare the Year 4 children for the Statutory Times Tables Test. As of September 2020, the school has a subscription to Times Tables Rock Stars, which also helps to promote the importance of times tables across the school (mainly Year 2 to Year 6).

9. Assessment

Assessment for learning should occur throughout the entire maths lesson, enabling teachers and teaching assistants to adapt their teaching/input to meet the children's needs. This feedback should be incisive and regular.

On a daily basis, children should self-assess against learning objectives and success criteria, giving them a sense of success. Children should know when they are meeting their targets and be self-assessing against those too using the assessment bookmarks in the front of their maths books.

Pupil's work should be marked in line with the Marking Policy and teachers should model how corrections should be made, giving children a chance to learn from their misconceptions or incorrect methods.

Termly assessments are completed for each year group to assess where the children are in their learning. Assessments are taken from White Rose. From these assessments, teachers complete a question analysis, which then identifies the children who need support, and the areas they need support in.

Termly pupil progress meetings ensure that pupils can be targeted for support. What that support will be and how intensive, depends upon the child's need and it may be a simple strategy within whole class teaching that is needed. Where further support is deemed necessary, children can access interventions from teachers and support staff.

10. Homework

We recognise the importance of making links between home and school and encourage parental involvement with the learning of mathematics. Homework provides opportunities for children to:

- practice and consolidate their skills and knowledge
- develop and extend their techniques and strategies
- share their mathematical work with their family
- to prepare them for their future learning

11. Resources and Displays

Each classroom will be resourced with materials to support the delivery of Maths; such items might include number lines, multiplication tables, 100 squares, Numicon, multilink cubes, dice and other smaller items. Larger materials such as scales, trundle wheels and measuring cylinders will be held centrally in the Maths resource room. Children should be encouraged to use whatever resources are available to them in the classroom and which they feel would be beneficial to help them when completing Maths work.

12. Inclusion

Intervention Programmes

At pupil progress meetings, targeted interventions may be planned for in-class delivery or for withdrawal support. Each class has a time tabled Teaching Assistant within the week, who will work with children to help close the gap.

13. Equal Opportunities

Positive attitudes towards mathematics are encouraged, so that all children, regardless of race, gender, ability or special needs, including those for whom English is a second language, develop an enjoyment and confidence with mathematics. The aim is to ensure that everyone makes progress and gains positively from lessons and to plan inclusive lessons. Lessons involving lots of visual, aural and kinaesthetic elements will benefit all children including those for whom English is an additional language (EAL). Differentiated questions are used in lessons to help children and planned support from Teaching Assistants and other adults.

14. Children with SEN and/or learning difficulties or disabilities

Where possible, through the use of appropriate support and differentiation, children with SEND will be working towards the same learning objectives as their peers. From time to time, those working well below the level of the whole class may be working towards related objectives chosen from the relevant progression strand from an earlier year. Those children with SEND may have specific targets relating to mathematics where appropriate. They may be given additional support or extra teaching in small groups to help them achieve these targets. The lower attaining pupils should have access to a wide range of practical resources to help develop mathematical thinking and understanding.

15. Gifted and talented

Children who are working well above the overall level of the class will be given a range of experiences designed to deepen their learning while working on the same learning objectives as their peers. This may be done by providing more demanding questions and investigations, further reasoning and problem-solving opportunities, attending G&T cluster events, and open-ended approaches to maths.

16. English as an Additional Language

Children learning English as an additional language may need support in developing mathematical language and concepts. Care is taken to ensure that pupils are grouped according to their mathematical ability and not on their stage of language acquisition.

Through the use of appropriate support and differentiation, EAL pupils experience the same level of cognitive challenge as their peers.

17. Reporting to parents

All parents receive an annual written report on which there is a summary of their child's efforts and progress in maths over the year.

At the end of Key Stage 1 and Key Stage 2, each pupil's level of achievement against national standards is included as part of their annual written report.

Parents are invited to parent/teacher consultations in the Autumn and Spring terms to discuss their child's progress.

18. Governing Body

At Kirkby Stephen Primary school we have an identified governor for mathematics and they have relevant understanding of the National Curriculum for England: Mathematics Programmes of Study. They are invited to attend relevant school INSET.

The mathematics governor visits the school termly to talk with the subject coordinator and, when possible, observes some daily mathematics lessons.

The mathematics governor reports back to the curriculum committee on a regular basis.

This policy was agreed by the Governing body on

Signed _____(Chair of Governors)

Policy to be reviewed in February 2025 .