

# Juniper Hill School

## Mathematics Policy



*Kindness   Enjoyment   Achievement*

Written: March 2026

Review date: March 2028

*“Mathematics is the language of the universe” – Galileo.*

Mathematics is not just used in the real world - it is the real world. At Juniper, we support our children to see maths in a world context, using it to make sense of all that is around us.

## **Intent**

At Juniper Hill School, our intent is to teach a rich and balanced mathematics curriculum, enabling our children to recognise the importance of Mathematics in the wider world and to be confident to relate their skills and knowledge in a range of problem-solving contexts. To “Be like a Mathematician” at Juniper is to Measure, Solve and Explain – to quantify the world around us, address problems and explain our reasoning.

## **Introduction**

Our school vision is to empower our school community to have the courage to make a difference in the world, teaching children the importance of being open to new possibilities and of working together to enable everyone to fulfil their goals.






Our Mathematics Policy is further underpinned by our three school aims:

**Kindness** – we find ways to support and look after each other in our mathematical learning, helping each other to believe in ourselves as mathematicians, aspire to be successful and celebrate each and every small step on our mathematical learning journey.

**Enjoyment** – we see mathematical learning as an opportunity to explore problems and patterns, create links between other aspects of the curriculum and find interesting, creative ways to solve problems.

**Achievement** – we encourage everyone to achieve all that they can, by engaging learners in quality teaching and learning opportunities and providing appropriate resources, progression and interventions.

This Policy should be read in conjunction with the following school Policies:

-  Calculation
-  Progression in Mathematics
-  Assessment
-  Marking and Feedback
-  SEND

## **Curriculum Aims**






Juniper’s mathematics curriculum is based on the 2014 National Curriculum, which sets out a clear programme of study for each phase of primary education.

## **Early Years**





The EYFS Framework requires that children in Reception develop a strong foundation in mathematics. It emphasises a deep understanding of number, including counting, comparing quantities, subitising, and understanding number composition. Children should also explore numerical patterns and develop early calculation skills through meaningful contexts. Alongside number, the framework expects children to engage with shape, space and measure by investigating shapes, using positional language, comparing size, length, weight and capacity, and beginning to sequence events in time.

### **Number & Numerical Patterns**

**By the end of Reception, children should be able to:**

-  Count, order and compare numbers to 10, recognising numerals to at least 10 and some to 20.
-  Subitise and recall number bonds to 5 (including subtraction facts) and understand number composition to 10.
-  Use 1:1 correspondence and counting strategies to add and take away single digit number problems in real contexts.
-  Create and spot simple patterns and number relationships (AB patterns, doubles, odd/even).
-  Use early mathematical language such as more/fewer/equal to

### **Shape, Space & Measure – End of Reception**

-  Name and explore common 2D and 3D shapes, describing simple properties.
-  Use positional language and show spatial awareness in construction and play.
-  Compare length, size, mass and capacity using everyday vocabulary.
-  Sequence simple events using time language

At Juniper, these skills are developed through a balance of purposeful, play-based experiences within provision, skill-based adult-led activities and discrete Maths lessons taught throughout the week. We focus on the expectations from Development Matters and Early Years Outcomes and use White Rose to guide planning in the line with the school. Once a skill is modelled and practiced, children can access maths activities which are linked to the children's interests or our current theme, and can be accessed by working independently, with peers or alongside an adult. Throughout the day, we harness small opportunities to continuously develop mathematical understanding and strengthen skills, including sharing number stories, songs, games, imaginative role play scenarios, puppets and quick 5-minute filler activities to revisit concepts taught. In line with the school's Calculation Policy, children use a wide range of concrete resources and pictures to aid their understanding of concepts such as addition and subtraction, moving on to recognising and exploring simple number sentences in preparation for Year 1.

### **Key Stage 1**

The principal focus of mathematics teaching in Key Stage 1 is to ensure that children develop confidence and mental fluency with whole numbers, counting and place value. Children must also develop their ability to recognise, describe, draw, compare and sort different shapes and be able to use a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money. By the end of Year 2, children should know number bonds to 20 and be precise in using and understanding place value. They must have a verbal and written mathematical vocabulary consistent with their reading and spelling knowledge of Key Stage 1.

### **Key Stage 2**

In Years 3 and 4, children need to become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value and be secure in their multiplication facts up to  $12 \times 12$ . This should ensure that children develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers and can solve a range of problems, including with simple fractions and decimal place value. Children must also be able to draw, analyse and reason about shapes and their properties and be able to relate measure and number, as well as accurately use measuring instruments. They can use measuring instruments with accuracy and make connections between measure and number.






Upper Key Stage 2 extends children's understanding to large integers and develops the connections they make between multiplication and division with fractions, decimals, percentages and ratio. Children need to become competent at solving a wider range of problems, including increasingly complex properties of numbers and arithmetic, efficient written and mental methods of calculation and the language of algebra.

## Implementation

At Juniper Hill, to "*Be Like a Mathematician*", our children are taught to "Measure, Solve and Explain": we need to be able to quantify and compare aspects of the world around us, using those findings to solve problems and then articulate what we have found out.

Our teaching and learning is supported by our Calculation Policy to ensure that there is a consistent approach to teaching the four operations over time.

Mathematics is taught through Quality First Teaching. All class teachers:

-  **Know where their children are** through summative and formative assessment, talk for mathematics within lessons and awareness of the children's prior learning.
-  **Understand where their children need to be** through a secure understanding of year group expectations, progression in mathematical skills and knowledge and attainment in the previous key stage and year group, together with incisive, ongoing, formative assessment.
-  **Know how they are going to get them there** through a range of pedagogies, strategies to promote independence and through maintaining high expectations for all children.
-  Effectively deploy other adults in the classroom to support children at all stages of lessons and interventions.
-  Plan effectively for progression during and between lessons.




Across both Key Stages and in Reception (where possible), children engage in Kagan structures and Kagan groups during mathematics lessons.

Good practice is shared between staff, through feedback about lesson plans and teaching and through staff training and INSET events. The quality and variety of language that children hear and speak are key factors in developing their mathematical vocabulary and presenting a mathematical justification, argument or proof. Mathematical language is therefore explicitly included in each year group's planning. Children are encouraged to ask and answer questions using precise mathematical vocabulary. Conversations between teachers and children explore how answers were obtained as well as why the method

worked and what might be the most efficient strategy. Children are encouraged to answer questions in complete sentences, using the stem “I think the answer is... because...”. Discussions are encouraged to expose and resolve children’s misconceptions.

## Curriculum Planning

Long-term planning of mathematics at Juniper is based on the National Curriculum and its ethos that a high-quality mathematics education 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. The National Curriculum for mathematics aims to ensure that all children:

-  Become **fluent** in the fundamentals of mathematics
-  Can **reason** mathematically
-  Can **solve problems**

Children are encouraged to make connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems, as well as become increasingly able to apply their mathematical knowledge to science and other subjects.

Medium-term planning is updated annually in response to attainment data, best practice and internal monitoring activities.

The Mathematics Leads keep teachers and LSAs up to date with any changes to the curriculum and pedagogy.

## What does Mathematics look like at Juniper Hill?

Maths is taught daily in both Key Stage 1 and Key Stage 2. All lessons include a clear aim (learning objective) which are shared with the pupils at the beginning of a session. They incorporate a range of concrete (each class has sets of maths manipulatives), pictorial and abstract representations to enable children to master new concepts. Daily planning is based on a variety of high-quality resources that meet the requirements of the National Curriculum, including White Rose Maths. Lessons involve relating maths to a real-life context, whole-class teaching, partner or team-based practice of skills and independent practice. Lessons will combine elements of fluency, reasoning and problem solving within different contexts. Previously learned concepts are revisited through lesson starters called ‘Flashback 4s’.

## Equal opportunities, inclusion and SEND

Children who are not achieving the expected standards or not making expected progress are supported within lessons by class teachers and LSAs and also through individualised programmes of interventions. This can be through in class support for example with manipulatives or taking a small group out of class to do a more personalised activity.

Children who are achieving beyond the expected standard are encouraged to work more deeply within the curriculum of their year group to demonstrate mastery and help them attain greater depth within the expected standard. Their learning will, where possible, have a more independent, enquiry-led focus and children can be offered 'challenge' work to move on to.

## **Assessment and Monitoring**

Assessment informs the teaching and learning sequence in every year group.

Feedback is given on children's learning in line with our Marking and Feedback policy. For mathematics, best practice is to provide immediate, verbal feedback, so this is utilised where practicable, with learning being marked by the teacher, pupil or a peer within the lesson.









Formative assessment within each lesson helps teachers identify children who require more support or additional stretch.

To assist teacher judgements, children are assessed termly using NFER assessment papers. Gap analysis is undertaken on test data to inform future planning and support. Summative assessments are completed at the end of each academic year and included in the children's end of year report for Years 1-5. Additionally, Year 4 pupils sit the statutory on screen 'Multiplication tables check', while Year 6 sit the externally marked SATs.

Key attainment and progress data is analysed termly for each year group. Class teachers review the data in order to provide suitable interventions at class, group or individual level. Regular monitoring activities are also conducted by the Mathematics Lead, including lesson observations, pupil voice and work scrutiny.

## **Roles and Responsibilities**

The school's Mathematics Leads are Miss Maisie Druce (EYFS), Mrs Denise Brettenny (KS1) and Mrs Clare Dean (KS2). The Mathematic Leads are responsible for raising the profile of mathematics throughout the school and maintaining best practice in the subject. The Lead has a job description which is reviewed annually and covers the following aspects:







-  Leading the development of mathematics within the school
-  Monitoring the subject's planning, teaching and learning
-  Helping to raise standards in mathematics
-  Providing teachers with support in the teaching of mathematics, including support with subject knowledge and effective pedagogies
-  Monitoring and maintaining high quality subject resources
-  Keeping up-to-date with new developments in the subject
-  Developing an annual action plan for mathematics to agree with the headteacher
-  Meeting with governors and attending Teaching and Learning Committee annually.

## **Resources**

Maths is a subject where concrete resources help to underpin understanding. All classes have a resource toolbox for each Kagan team. Where practicable, children are encouraged to access resources independently as needed to support their learning. Teachers make use of a range of written and online materials to allow children to be exposed to a variety of different types of learning and problems. Varied fluency and intelligent practice allow children to develop flexibility of thinking and confidence in extending their own thinking skills.

Mathematics is enhanced through all classrooms by having maths working walls to support children in their learning. In Reception, each classroom has a designated area with access to activities and resources which support the development of Maths skills. Times Table Rock Stars is used to support Key Stage 2 children with multiplication facts and to help prepare them for the Multiplication Tables Check in Year 4. Times tables progression is also ensured through regular practice of Cracking Times Tables.

### **Impact**

-  Juniper children understand the importance of what they are learning in mathematics and how it applies to real world concepts; they know that mathematics is a vital life skill that they will rely on in many areas of their daily life.
-  Children have fast recall of key facts, including number bonds and times tables.
-  Children are confident and believe that they can achieve in mathematics.
-  Children show flexibility and fluidity in moving between different contexts and representations (concrete, pictorial, abstract).
-  Children recognise relationships and make connections between different areas of mathematics, solving reasoning problems with increased confidence and accuracy.
-  Children are confident to 'have a go' and choose the equipment they need to help them to learn along with the strategies they think are best suited to each problem.