



## **Curriculum Implementation: Subject Maths**

At Kingsway Primary, we have constructed an ambitious curriculum that follows the content of the EYFS statutory framework and the National Curriculum.

We follow the White Rose curriculum from EYFS through to KS2. The White Rose curriculum aims to master key skills by the end of each year and key stage. It is structured to build upon prior learning and ensures progression is evident. Our mastery curriculum means that our children aim to master skills learnt which can then be applied to problem solving and reasoning. It builds on our children's understanding of key concepts, alongside giving them opportunities to ask and answer questions to deepen their understanding. We use a CPA approach to ensure children's understanding of concepts is secure and this approach supports this. Our curriculum encourages children to use manipulatives independently and draw models and images to support their understanding and explanations. The children's learning is carefully planned into small, concise steps to ensure learning is progressive and coherent. Children are given daily opportunities to practice number fluency skills as well as recap previous learning and skills.

At Kingsway Primary School we have a dedicated team of well trained staff that work hard to reach high standards in everything we do. We actively seek opportunities to develop as professionals through carefully selected CPD in order to acquire the most up subject knowledge. We also celebrate areas of strength in teaching and develop this through means such as coaching. The subject leads are dedicated to improving the standards of maths teaching across school and take any opportunity to strengthen this by working closely alongside other maths leads in other schools.

At Kingsway, we aim to take into account pupils' prior knowledge and understanding in order to carefully sequence their next steps. Across school,

children in different year groups access the same topics at the same time. This means that each year pupils are building on their prior learning and understanding across all topics. Every year group begins their maths learning journey by being taught number and place value. It is essential that each child has a deep understanding of number and place value for them to be able to access other maths units taught across the year.

Built into our lessons are opportunities to recap and revisit prior learning through a talking task and additional flashback activities. The talking task is an opportunity for the children to practise using their number skills and improve their number sense. Following this, we teach them the new concepts for the lesson. We use high quality resources from White Rose Maths Hub to support the delivery of our lessons. We allow children to have opportunities to draw images to represent their thinking, as well as using models and manipulatives. We demonstrate how to use mathematical language effectively and have high expectations of pupils using the language too, this is also present within the learning environment. Children are encouraged to use relevant vocabulary within their discussions during lessons. Pupils use their maths books to record their understanding in a variety of ways.

Within the curriculum, we have identified precise and clear end points for each subject for each half term. We are ambitious for all our pupils and expect them to work towards and achieve these end points in all curriculum areas.

### **EYFS End Point:**

By the end of Foundation Stage the pupils should be able to:

#### **Number**

- Have a deep understanding of numbers to 10, including the composition of each number.
- Subitise (recognise quantities without counting) up to 5.
- Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

#### **Numerical Patterns**

- Verbally count beyond 20, recognising the pattern of the

counting system.

- Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.
- Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally

### **KS1 End Point:**

By the end of Key Stage 1 the pupils should be able to:

- read scales\* in divisions of ones, twos, fives and tens
- partition any two-digit number into different combinations of tens and ones, explaining their thinking verbally, in pictures or using apparatus
- add and subtract any 2 two-digit numbers using an efficient strategy, explaining their method verbally, in pictures or using apparatus (e.g.  $48 + 35$ ;  $72 - 17$ )
- recall all number bonds to and within 10 and use these to reason with and calculate bonds to and within 20, recognising other associated additive relationships (e.g. If  $7 + 3 = 10$ , then  $17 + 3 = 20$ ; if  $7 - 3 = 4$ , then  $17 - 3 = 14$ ; leading to if  $14 + 3 = 17$ , then  $3 + 14 = 17$ ,  $17 - 14 = 3$  and  $17 - 3 = 14$ )
- recall multiplication and division facts for 2, 5 and 10 and use them to solve simple problems, demonstrating an understanding of commutativity as necessary
- identify  $\frac{1}{4}$ ,  $\frac{1}{3}$ ,  $\frac{1}{2}$ ,  $\frac{2}{4}$ ,  $\frac{3}{4}$ , of a number or shape, and know that all parts must be equal parts of the whole
- use different coins to make the same amount
- read the time on a clock to the nearest 15 minutes
- name and describe properties of 2-D and 3-D shapes, including number of sides, vertices, edges, faces and lines of symmetry.

### **LKS2 End Point:**

By the end of lower Key Stage 2 the pupils should be able to:

- Apply fluency with whole numbers and the four operations, including number facts and the concept of place value.
- Understand efficient strategies for addition and subtraction performing calculations with increasingly large numbers.
- Apply problem solving to a range of areas of maths including decimals and fractions.

- Develop their mathematical reasoning around shapes and their properties.
- Use measuring equipment with accuracy identifying connections between measurement and number.
- Apply their knowledge and understanding of key vocabulary.
- By the end of year 4, confidently and fluently recall their times table facts up to 12 x 12.

### **UKS2 End Point:**

By the end of upper key stage 2, the pupils should be able to:

- Extend their understanding of place value with increasingly larger integers.
- Develop connections between multiplication and division with fractions, decimals, percentages and ratio.
- Develop their ability to solve increasingly complex problems drawing on the most efficient strategies from their learning.
- Build on their understanding of numbers to apply their learning to algebraic concepts.
- Extend their knowledge in number through geometry and measure.
- Classify shapes using increasingly complex vocabulary and make connections between their geometric properties.
- Use and spell key mathematical vocabulary effectively.
- By the end of year 6, pupils should be fluent in written methods for all 4 operations and in working with fractions, decimals and percentages.

We implement White Rose Maths which incorporates small step lessons that are progressive in the skills, understanding and vocabulary we are hoping for our children to acquire. Additionally, White Rose Maths provides opportunities to revise and build on prior learning through the use of Flashback 4 activities and talk tasks which are used at the beginning of every lesson. This provides our staff with opportunities to revise and revisit previously learnt skills. Times Tables Rockstars is an online resource which children from Year 3 upwards access daily to practice and revisit newly learnt and previously learnt times tables.

During each and every lesson, staff are assessing children's understanding through their use of high quality questioning and providing children with verbal

feedback within the lesson. This supports the staff's understanding of the children's progress and informs future teaching. Children are given knowledge organisers to ensure that they all have access to key vocabulary. Key vocabulary is evident on the working wall in each classroom and children use this to support their understanding.

Assessment is interwoven throughout the curriculum. Summative and formative assessments are used by staff to check the understanding of key concepts. The children are assessed at the end of each taught unit, through the use of White Rose end of block assessments. This then enables teachers to plan next steps in learning, identify gaps and prepare early interventions. At Kingsway, we assess children's understanding of a taught unit at the end of each unit and then we assess their understanding of what they have learnt termly. We recognize the value of assessment as a learning tool which provides opportunities for teachers to enhance their offering and for pupils to strengthen their understanding.

Our maths curriculum is designed into small steps so that it can be accessed by all pupils. The scheme of work is ambitious and challenges pupils, however it can be adapted to meet the individual needs of its learners. The use of the CPA (concrete, pictorial, abstract) supports learners with individual needs with their understanding of maths as they can visually learn through the use of manipulatives and pictures.

Staff are skilled at identifying the needs of their learners and in most instances are able to provide the resources or adapt their lessons to meet the pupils' needs within the class setting.

At Kingsway Primary School, we help children, many of whom start with prior skills, development and knowledge that are well below those expected for their age, to quickly gain knowledge and skills across all areas of maths.

Staff take into consideration the individual needs of each pupil in order to support individual learning journeys to the best of their ability.

At Kingsway, we provide many opportunities to learn outside of the classroom. We look for maths around the school and make learning individual for our children. We offer a range of experiences and learning opportunities outside of

the classroom and develop communication and team building skills through this. We teach children how to explain their maths and reason about maths daily during lessons.

Through the teaching of our maths curriculum, we practice reading frequently. A lot of the time our staff will read aloud to the pupils to support their understanding of questions in maths. Pupils are encouraged to use their reading skills to independently read questions in maths, if this is not going to be a barrier to their learning. If reading is a barrier to their learning and understanding in maths, reading aloud will be evident in classrooms.

In key stage 1 & 2, children are encouraged to pick out key words and phrases to help to support their understanding. New vocabulary is placed onto maths Working Walls, becoming a toolkit which children are actively encouraged to use and read independently, where possible, to help to support their learning.