

Maths Curriculum Progression

Reception:

In order to plan effective lessons and meet the desired outcomes, the White Rose scheme is followed in Reception with the use of aligned Master the Curriculum resources. This is to ensure that children can effectively meet the linked Early Learning Goals.

Number ELG

Children at the expected level of development will:

- Have a deep understanding of number 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 ELG

Children at the expected level of development will:

- 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.

Additional information:

In Reception, we continually observe and assess children against these areas using their age-related objectives, and plan the next steps in their mathematical development. There are opportunities for children to encounter Maths throughout Reception (both inside and outside) – through both planned activities and the self-selection of easily accessible quality Maths resources. Whenever possible, children's interests are used to support delivering the mathematics curriculum. Towards the end of Reception, teachers aim to draw the elements of a daily mathematics lesson together so that by the time children move into Year 1, they are very familiar with a structured lesson / activity.

Key Stage One:

Teaching throughout Key Stage One ensures that children are confident to manipulate numbers up to 100. The Key Stage One curriculum builds on the knowledge, skills and vocabulary taught in EYFS and provides opportunities for children to develop their competency in place value and the four operations. A high focus is placed on concrete, pictorial and mental strategies to equip children with a readiness for more abstract concepts to be introduced in Key Stage Two. Teachers model the use of correct mathematical vocabulary and children are expected to use this vocabulary to articulate their ideas.

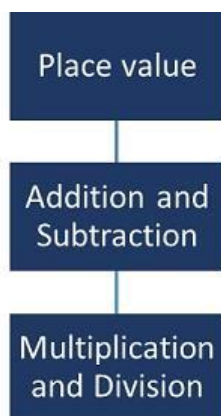
Key Stage Two:

Teaching throughout Key Stage Two builds on the solid foundations of the previous key stage. Children are introduced to more formal calculation methods which are developed and built on each year in line with age related expectations. Teachers provide frequent opportunities to reason and problem solve in real life contexts, allowing children to develop their conceptual understanding and prepares them for the statutory end of key stage assessments.

Our approach and resources we use

We adopt a supportive ethos and our approaches support the children in developing their collaborative and independent skills, as well as empathy and the need to recognise the achievement of others. Children can underperform in mathematics because they think they can't do it or are not naturally good at it. The **White Rose scheme** addresses these preconceptions by ensuring that all children experience challenge and success in this subject by developing a growth mind-set.

The order of the White Rose Maths curriculum:

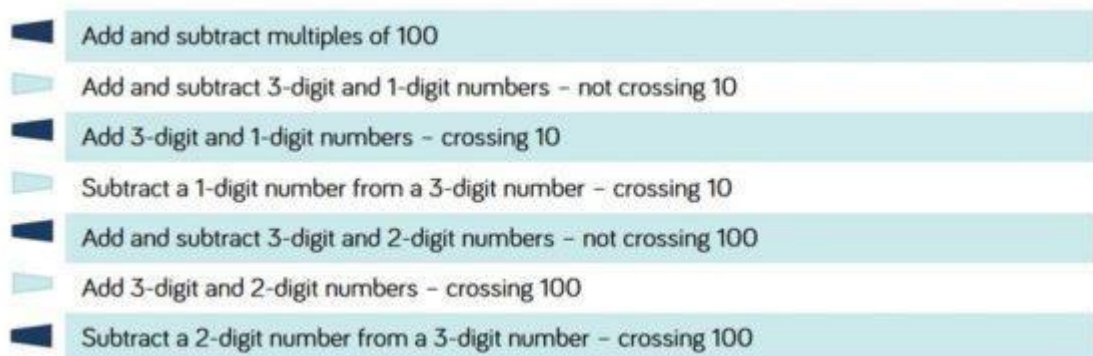


The basic principles:

The fundamental idea behind the White Rose curriculum design is to support pupils to be able to perform simpler tasks so they can then move on to perform more complex tasks. For example, we cannot expect pupils to add two numbers together before they understand what each individual number represents.

This thinking gives rise to a typical sequence of 'blocks' of mathematics that you will see in most year groups.

Within each of these blocks there are 'small steps' which are again sequenced in order of difficulty and dependency. For example here are the first seven steps (of 18) in the Year 3 Addition and Subtraction block:

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- ▶ Add and subtract multiples of 100
 - ▶ Add and subtract 3-digit and 1-digit numbers - not crossing 10
 - ▶ Add 3-digit and 1-digit numbers - crossing 10
 - ▶ Subtract a 1-digit number from a 3-digit number - crossing 10
 - ▶ Add and subtract 3-digit and 2-digit numbers - not crossing 100
 - ▶ Add 3-digit and 2-digit numbers - crossing 100
 - ▶ Subtract a 2-digit number from a 3-digit number - crossing 100

Each step builds carefully from the previous step, building on pupils' prior knowledge to develop new skills, with nothing left out. Pupils are ready for this having covered addition with 2-digit numbers in Year 2 and Place Value up to 1,000 in the first block of Year 3.

To learn mathematics effectively, some things have to be learned before others, e.g. place value needs to be understood before working with addition and subtraction, addition needs to be learnt before looking at multiplication (as a model of repeated addition). You will see this emphasis on number skills first, carefully ordered, throughout the White Rose curriculum. For some other topics, the order isn't as crucial, e.g. Shapes and Statistics need to come after number, but don't depend on each other. We try to mix these so pupils have as wide a variety of mathematical experiences as possible in each term and year.

Resources to complement the White Rose curriculum:

Our teaching staff use the White Rose schemes of work in conjunction with a range of high quality resources such as NRICH and NCETM to support, stretch and challenge all learners within the classroom. To further complement the White Rose scheme, teachers also use resources from White Rose Premium, Twinkl, Master the Curriculum, Classroom Secrets, Rising Stars and Headstart, with a focus on developing fluency and problem solving for children at all ability levels.

In Key Stage 2, 'Target Your Maths' and CGP textbooks are used to further consolidate concepts through differentiated tasks. These may also be used to help consolidate learning and may also be used for homework tasks. The questions are broken down into three levels:

1. Section A: This section is based upon work previously covered. The tasks generally match the requirements for the previous year group and therefore this section is often used as a good starting point for those learners who are less confident. When the children feel more confident, they are encouraged to challenge themselves further and complete tasks from Section B.
2. Section B: These activities are based on the requirements of the particular year group; therefore, most children should be able to work successfully at this level and are often encouraged to start at this section.
3. Section C: This section provides more challenging activities and generally matches the requirements of the year group above. These tasks are often used as extension tasks for the 'rapid graspers'.

When planning lessons, teachers will decide whether children can choose the level of difficulty for the task (A, B or C) or if the children need to be directed to start at a particular level for more consolidation.

Assessment:

Regular and ongoing assessments inform teaching, as well as interventions, to support and enable the success of each child. At the start of a new White Rose block of learning, children in Key Stage One and Two complete a pre-topic assessment. Then once they have completed the block, they complete an end-of-block assessment to monitor progress.

Summative assessments take place at the end of each term and children's progress and attainment is discussed with senior leaders in pupil progress meetings. White Rose and NFER test materials are used to carry out these assessments. In addition, formative assessments take place on a daily basis and teachers adjust their planning accordingly to meet the needs of their class.

High-quality teaching, guidance and effective feedback, ensure that we are able to maintain high standards, with achievement at the end of Key Stage Two well above the national average. In addition, a significant proportion of children are able to exceed end of year expectations and achieve Greater Depth at the end of each phase.