Maths Curriculum Handbook

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Introduction

This mathematics curriculum is built around a mastery approach. As the National Centre for Excellence in the Teaching of Mathematics (2022) explains, ***"Mathematics teaching for mastery assumes everyone can learn and enjoy mathematics. Teachers continually develop their specialist knowledge for teaching mathematics, working collaboratively to refine and improve their teaching."*** Working alongside the Maths Hub, Hurst Hill teachers continually develop their specialist knowledge for teaching mathematics, working collaboratively with personal development coaches to refine and improve their practice.

The curriculum follows a clear, progressive sequence. Each year group focuses on mastering age-appropriate content before applying their learning to related topics, helping pupils make secure connections and deepen their understanding. This learning is then strengthened in later years as pupils revisit and further develop their knowledge and mastery of each mathematical idea.

Definition of teaching

"Teaching is a broad term that covers the many different ways in which adults help young children learn. It includes their interactions with children during planned and child-initiated play and activities, communicating and modelling language, showing, explaining, demonstrating, exploring ideas, encouraging, questioning, recalling, providing a narrative for what they are doing, facilitating, and setting challenges.

It takes account of the equipment that adults provide; the attention given to the physical environment, as well as the structure and routines of the day that establish expectations. Integral to teaching is how practitioners assess what children know, understand and can do, as well as taking account of their interests and dispositions to learn (characteristics of effective learning), Practitioners use this information to plan children's next steps in learning and to monitor their progress." *Department for Education. (2025). Statutory framework for the early years foundation stage. GOV.UK.*

Our Intent

We believe that students deserve a creative and ambitious mathematics curriculum. One that is rich in skills and knowledge, igniting curiosity and preparing them well for everyday life and future employment. Our mathematics curriculum will give students the opportunity to:

- become fluent in the fundamentals of mathematics, 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.
- 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 preserving in seeking solutions.
- can communicate, justify and prove using mathematical vocabulary.

The Curriculum

Statutory Requirements

Aims of the national curriculum:

• developing confidence and competence with numbers and measures – the proficiency of Maths

• providing opportunities to apply mathematical learning to a range of real-life contexts in mathematics and in other subject areas

• encouraging the skills required to communicate ideas about mathematics

• fostering a sense of inquiry and an enthusiasm and enjoyment for the nature of mathematics

• an ability to think clearly and logically, with sufficient flexibility of mind, to work independently

• the acquisition of appropriate mathematical language and the ability to describe accurately and unambiguously.

To fulfil these requirements our pupils should:

• have a sense of the size of a number and where it fits into the number system;

• know by heart number facts such as number bonds, multiplication tables, doubles and halves;

• use what they know by heart to figure out answers mentally;

• calculate accurately and efficiently, both mentally and with pencil and paper, drawing on a range of calculation strategies

• make sense of number problems, including non-routine problems, and recognise the operations needed to solve them;

• explain their methods and reasoning using correct mathematical terms;

• judge whether their answers are reasonable and have strategies for checking them where necessary;

• suggest suitable units for measuring, and make sensible estimates of measurements;

• explain and make predictions from the numbers in graphs, diagrams, charts and tables;

• develop spatial awareness and have an understanding of the properties of 2-D and 3D shapes

• use patterns and relationships in mathematics to solve puzzles and problems about numbers and shapes

EYFS – Nursery & Reception

In EYFS, maths is taught and accessed daily through a mixture of teacher-led and child-led learning. Engaging and inspiring sessions are led by staff to introduce new concepts and model new ways of

thinking mathematically. Children are then able to apply what they have learnt indoors and outdoors through purposefully planned activities and high-quality resources and interactions in order to encourage mathematical problem solving. For example, weighing scales in the home corner, rulers and number lines in the construction area and opportunities to compare scores whilst playing sports games outside.

The EYFS statutory framework and Development Matters are used within EYFS to structure the mathematical learning that takes place, from Nursery through to Reception. These frameworks are embedded within the schemes that we use across the EYFS phase and are the basis of our learning and assessment process.

- Nursey use the Master the Curriculum Maths scheme to support the early development of basic mathematical skills through play, exploration and problem solving. This supports children to establish the necessary building blocks for transition into Reception and the White Rose scheme, in line with the rest of the school.
- The CPA approach (concrete, pictorial and abstract) underpins each topic of learning, with a heavy focus on concrete materials, so children are provided with a 'hands on' experience for a deep understanding of mathematical concepts. This supports children to make stronger connections when accessing more complex and abstract learning as they progress through Reception and into KS1.

Children who require additional support are identified in wave 1 teaching through assessment for learning within the adult-led session. These children have same day interventions during the deliberately selected activities provided during wider provision in child initiated sessions. Adults use OWLET to engage children in conversations providing support and guidance to address misconceptions. Tapestry observations are used to evidence and celebrate significant moments such as meeting a target, taking part in an intervention or children showcasing a unique way to apply their mathematical knowledge.

By nurturing curiosity, encouraging exploration, and making maths fun, we help children develop confidence and a lifelong love of mathematical thinking. Together, we build strong foundations for future learning.

EYFS – Nursery curriculum map

Nursery MTP Overview
www.masterthecurriculum.co.uk

	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 Starters: Number songs	Colours • Red • Blue • Yellow	Colours • Green • Purple • Mix of colours	Match • Buttons and colours • Matching towers • Matching shoes	Match • Match number shapes • Match shapes • Pattern handprints – big and small	Sort • Colour • Size • Shape	Sort • What do you notice? • Guess the rule • Guess the rule	Number 1 • Subitising • Counting • Numeral	**Number 2** Subitising-dice pattern Subitising-random pattern Subitising – different sizes	**Number 2** • Counting • Numeral • Numeral	**Pattern** • Extend AB Colour patterns • Extend AB Outdoor Patterns • AB Movement Patterns	• Fix my Pattern • Extend ABC Colour patterns • Extend ABC Outdoor Patterns	Consolidation Activities - Winter activity week
Spring Starters: Number songs	Number 3 Subitising Subitising Subitising	Number 3 3 Little pigs 1:1 counting Numerals/Triangles	Number 4 1:1 counting Numerals Squares/rectangles	Number 4 Composition of 4 Composition of 4 Composition of 4	Number 5 1:1 counting Numerals Pentagon	Number 5 Composition of 5 Composition of 5 Composition of 5	Consolidate 1 - 5	Number 6 Introduce 10 frame	Height & Length • Tall and short • Long and short • Tall/long and short	Mass Relate to books 3 little pigs goldilocks	Capacity	Consolidation
Summer Starters – subitising and revision	Sequencing	Positional Language	More than/fewer than	Shape – 2D Revisit pattern from Autumn	Shape – 3D Revisit pattern from Autumn	Consolidation: More than/fewer one more and one less	Number composition 1 – 5 Revision	What comes after?	What comes before?	Numbers to 5	Consolidation / Activity weeks SUMMER	Consolidation / Activity weeks

Term 1: Nursery Progression

Week	Objectives	Development Matters	Birth to 5 Matters
1	**Recognise the colour red** Children identify red objects and say if an object is red or not.	**EAD 3 – 4 Year Olds:** Explore colour and colour mixing	**EAD Range 4:** Enjoys and responds to playing with colour in a variety of ways, for example combining colours **EAD Range 5:** Continues to explore colours and how colours can be changed.
	Recognise the colour blue Children identify blue objects and say if an object is blue or not.		
	Recognise the colour yellow Children identify yellow objects and say if an object is yellow or not.		
2	**Recognise the colour green** Children identify green objects and say if an object is green or not.		
	Recognise the colour purple Children identify purple objects and say if an object is purple or not.		
	Recognise colours Children recap the colours they have already learnt and explore other colours. They talk about their favourite colours and match objects to the correct colour name.		
3	**Recognise matching buttons** Children identify a button that is the same shape or colour as a set of buttons on a shirt.	**3 – 4 Year Olds:** Make comparisons between objects relating to size Complete inset puzzles Compare sizes using gestures and language: 'bigger/little/small' Talk about and explore 2D shapes using informal and mathematical language sides, corners, straight, flat	**Range 4:** Recognises that two objects have the same shape **Range 5:** Shows awareness of shape similarities and differences between objects. **Range 6:** Uses informal language and analogies, (e.g. heart-shaped and hand-shaped leaves), as well as mathematical terms to describe shapes
	Recognise matching shoes Children pair up shoes that match because they are the same colour or have the same shape on them.		
	Recognise and create matching towers Children match up towers of blocks that are made up of the same colours in the same order.		
4	**Match number shapes** Children identify matching Numicon shapes and begin to identify how they have the same number of holes.		
	Match the same size Children match up handprints that are the same size or colour.		
	Match prints Children match prints that are the same shape, even though they might be different colours.		
5	**Sort by size** Children sort objects, like counting bears, by creating groups of objects that are the same size.	**3 – 4 Year Olds:** Make comparisons between objects relating to size Complete inset puzzles Compare sizes using gestures and language: 'bigger/little/small'	**Range 4:** Recognises that two objects have the same shape **Range 5:** Shows awareness of shape similarities and differences between objects. **Range 6:** Uses informal language and analogies, (e.g. heart-shaped and hand-shaped leaves), as well as mathematical terms to describe shapes
	Sort by colour Children sort objects that are 2 or 3 different colours.		
	Sort by shape Children sort objects, like buttons, by creating groups of objects that are the same shape.		
6	**Sorting – What do you notice?** Children talk about what the notice about the objects that have been grouped by an adult.		
	Sorting – Guess My Rule Children are asked to identify how groups of objects have been sorted by identifying the similarities between the objects. They then sort objects based on their own criteria.		

Term 2: Nursery Progression

Week	Objectives	Development Matters	Birth to 5 Matters
1	**Number 1 – Subitising** Children learn to recognise when there is 1 object in a set and how to show 1 on their fingers.	**3 – 4 Year Olds:** Develop fast recognition of up to 3 objects, without having to count them individually ('subitising'). Say one number for each item in order: 1,2,3,4,5. Know that the last number reached when counting a small set of objects tells you how many there are in total Show 'finger numbers' up to 5. **Reception** Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5	**Range 4:** Points or touches (tags) each item, saying one number for each item, using the stable order of 1,2,3,4,5. Begin to recognise numerals 0 to 10 Subitises one, two and three objects (without counting) Counts up to five items, recognising that the last number said represents the total counted so far (cardinal principle) Links numerals with amounts up to 5 and maybe beyond Through play and exploration, beginning to learn that numbers are made up (composed) of smaller numbers
	Number 1 – Counting Children practise counting 1 object by touching them and saying '1'.		
	Number 1 – Numeral Matching Children are introduced to the numeral 1 and match the numeral to amounts that show 1.		
2	**Number 2 – Subitising Dice Patterns** Children will learn to recognise 2 dots, like they see on a dice, without counting them.		
	Number 2 – Subitising Different Patterns Children will continue to recognise 2 objects without counting, this time in different arrangements.		
	Number 2 – Subitising Different Sizes and Patterns Children will learn to recognise when there are 2 dots, even if they are different sizes.		
3	**Number 2 – Counting – Say One Number for Each Item** Children practise counting 2 objects by touching them or pointing to them as they '1…2'.		
	Number 2 – Link Numeral and Amounts Children are introduced to the numeral 2 and link the numeral to amounts that show 2.		
	Number 2 – Link Numeral and Amounts Children look at different fonts and images of number 2 and match them to the correct amount.		
4	**Colour AB Patterns** Children describe AB patterns from 2 different colours and predict what will come next in the pattern.	**3 – 4 Year Olds:** Extend and create ABAB patterns – stick, leaf, stick, leaf. Notice and correct an error in a repeating pattern.	**Range 4:** Creates their own spatial patterns showing some organisation or regularity Explores and adds to simple linear patterns of two or three repeating items, e.g. stick, leaf (AB) or stick, leaf, stone (ABC) Joins in with simple patterns in sounds, objects, games and stories dance and movement, predicting what comes next
	Extend AB Patterns – Outdoor Objects Children explore creating, describing and continuing AB patterns with natural objects.		
	Extend AB Patterns – Movement In this lesson, children will continue AB patterns using movement of their body.		
5	**Fix My Pattern (AB Patterns)** Children describe ABC patterns made from 3 different colours and predict what will come next.		
	Extend ABC Colour Patterns Children sort objects that are 2 or 3 different colours.		
	Outdoor ABC Patterns Children explore creating, describing and continuing ABC patterns with natural objects.		
6	Consolidation – Sorting and Matching		
	Consolidation - Counting		
	Consolidation - Pattern		

Term 3: Nursery Progression

Week	Objectives	Development Matters	Birth to 5 Matters
1	Subitising 3 - Dice Patterns Children will learn to recognise 3 dots, like they see on a die, without counting them.	**3 – 4 Year Olds:** Develop fast recognition of up to 3 objects, without having to count them individually ('subitising') Show 'finger numbers' up to 5	**Range 4:** Subitises one, two and three objects (without counting)
	Subitising 3 –Different Patterns Children will continue to recognise 3 objects without counting them, this time in different arrangements.		
	Subitising 3 Children will learn to recognise when there are 3 dots, even if they are different sizes.		
2	Counting 3 Children focus on counting 3 objects.	**3 – 4 Year Olds:** Say one number for each item in order: 1,2,3,4,5. Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle'). Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5. Experiment with their own symbols and marks as well as numerals. Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'	**Range 4:** Points or touches (tags) each item, saying one number for each item, using the stable order of 1,2,3,4,5. Begin to recognise numerals 0 to 10 Counts up to five items, recognising that the last number said represents the total counted so far (cardinal principle) Links numerals with amounts up to 5 and maybe beyond • Explores using a range of their own marks and signs to which they ascribe mathematical meanings Through play and exploration, beginning to learn that numbers are made up (composed) of smaller numbers Separates a group of three or four objects in different ways, beginning to recognise that the total is still the same Responds to both informal language and common shape names
	Numeral 3 Children are introduced to what the numeral 3 looks like and learn what it represents.		
	Composition of 3 Children are introduced to the idea that numbers are made up of smaller numbers and they will begin to explore what smaller numbers the number 3 is composed of.		
	Recognise triangles Children learn that triangles are 2-D shapes that have 3 sides. They are asked to identify triangles by counting their sides.		
3	Counting 4 Children focus on counting 4 objects.		
	Numeral 4 Children are introduced to what the numeral 4 looks like and match the numeral 4 to the quantity.		
	Recognise squares and rectangles Children learn that squares and rectangles are 2-D shapes that have 4 sides. They are asked to identify them by counting their sides.		
4	Composition of 4 Children will continue to explore how numbers are composed of smaller numbers. In this lesson, they will explore what numbers make up the number 4, by moving frogs between a log and a pond.		
	Composition of 4 Children will continue to explore how numbers are composed of smaller numbers. In this lesson, they will explore what numbers make up the number 4, by moving frogs exploring spots on a ladybird.		
	Composition of 4 Children will continue to explore how numbers are composed of smaller numbers. In this lesson, they will explore what numbers make up the number 4, by throwing 4 beanbags at a hoop.		
5	Counting 5 Children focus on counting 5 objects.		
	Numeral 5 Children are introduced to what the numeral 5 looks like and match the numeral 5 to the quantity.		
	Recognise pentagons Children learn that pentagons are 2-D shapes that have 5 sides. They are asked to identify them by counting their sides.		
6	Composition of 5 Children explore the composition of number 5 using Numicon pieces to make a shell for Sammy the Snail.		
	Composition of 5 Children explore fitting pieces of Numicon inside a number 5 'house' shape.		
	Composition of 5 Children explore the composition of 5 by arranging red and blue spots on a rocket.	www.masterthecurriculum.co.uk	

Term 4: Nursery Progression

Week	Objectives	Development Matters	Birth to 5 Matters
1	Consolidation – Subitising Subitise counters on a 5 frame and objects arranged in dice patterns. Then, show the matching amount on your fingers.	**3 – 4 Year Olds:** Recite numbers past 5. Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle'). Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5.	**Range 4:** May enjoy counting verbally as far as they can go. Points or touches (tags) each item, saying one number for each item, using the stable order of 1,2,3,4,5. Uses some number names and number language within play, and may show fascination with large numbers. Begin to recognise numerals 0 to 10. Counts up to five items, recognising that the last number said represents the total counted so far (cardinal principle). Links numerals with amounts up to 5 and maybe beyond.
	Consolidation – Counting Count the toys in Crocodiles toybox		
	Consolidation – Numerals Children see the numerals in different contexts and identify which number they represent.		
2	Counting 6 Children practise counting 6 objects with 1:1 correspondence.		
	Counting 6 Children continue to practise counting 6 objects with 1:1 correspondence, in the context of pennies.		
	Counting 6 – Ten Frame Children are introduced to a ten frame and learn how 6 objects can be arranged on a ten frame.		
3	Tall and Short Children compare the height of different objects using the word tall or short.	**3 – 4 Year Olds** Make comparisons between objects relating to size, length, weight and capacity.	**Range 4** Explores differences in size, length, weight and capacity. In meaningful contexts, finds the longer or shorter, heavier or lighter and more/less full of two items.
	Long or Short Children compare the length of different objects using the word long or short.		
	Tall / Long or Short Children compare the height or length of different objects using the words long or tall and short.		
4	Mass – Introducing Balance Scales Children are introduced to balance scales. They explore what happens when they put different objects in them. They hear the words heavier and lighter.		
	Mass - Lighter Children use the balance scales to investigate which objects are lighter.		
	Mass – Heavier or Lighter Children use the balance scales again but this time they say which object is heavier and which is lighter.		
5	Capacity – Full or Empty Children explore containers that are full or empty, both practically and pictorially.		
	Capacity – Nearly Full or Nearly Empty Children explore containers that are nearly full or nearly empty.		
	Capacity – Comparing Containers Children compare the capacity of different containers by directly pouring from one to the other.	www.masterthecurriculum.co.uk	
6	Consolidation – Length Children say which objects are longer or taller and shorter.		
	Consolidation – Mass Children say which objects are heavier and which are lighter.		
	Consolidation – Capacity Children compare the capacity of different containers.		

Term 5: Nursery Progression

Week	Objectives	Development Matters	Birth to 5 Matters
1	Sequencing Children sequence pictures from a nursery rhyme.	**3 – 4 Year Olds:** Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then…'	**Range 4:** Recalls a sequence of events in everyday life and stories.
	Sequencing Children sequence pictures from their daily routine.		
	Sequencing Children sequence pictures from a familiar story.		
2	Position – On and Under Children place an object on or under a chair, a table etc.	**3 – 4 Year Olds:** Understand position through words alone – for example, "The bag is under the table," – with no pointing.	**Range 4:** Responds to and uses language of position and direction.
	Position – In and Out Children explore whether an object is in or out of a basket, bag etc.		
	Position – In Front or Behind Children explore whether the gingerbread man is in front of or behind different animals		
3	Comparing Groups – More Than Children look at two sets of objects and say which set has more.	**3 – 4 Year Olds:** Compare quantities using language: 'more than', 'fewer than'.	**Range 4:** Compares two small groups of up to five objects, saying when there are the same number of objects in each group, e.g. You've got two, I've got two. Same!
	Comparing Groups – Fewer Than Children look at two sets of objects and say which set has fewer.		
	Comparing Groups – More Than and Fewer Than Children look at two sets of objects and identify which set has more and which set has fewer.		
4	2-D Shapes - Circles Children learn to identify circles and they begin to learn some properties of a circle.	**3 – 4 Year Olds:** Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: 'sides', 'corners'; 'straight', 'flat', 'round'	**Range 4** Responds to both informal language and common shape names. Shows awareness of shape similarities and differences between objects
	2-D Shapes – Triangles Children learn to recognise triangles and begin to learn some of the properties of a triangle.		
	2-D Shapes - Rectangles Children learn to recognise rectangles. They learn that a square is a special rectangle. They learn some of the properties of a rectangle.		
5	3-D Shapes – Cubes and Cuboids Children identify cubes and cuboids and begin to talk about some of their properties.		
	3-D Shapes - Cylinders Children learn to recognise cylinders and begin to talk about some of their properties.		
	3-D Shapes - Spheres Children learn to recognise spheres and begin to talk about some of their properties.		
6	Consolidation – Sequencing Children put familiar events in the correct order.		
	Consolidation - Position Children recap the vocabulary on, under, in, out, in front of and behind.		
	Consolidation – More or Fewer Children compare two sets of objects and say which has more and which has fewer.		

Term 6: Nursery Progression

Week	Objectives	Development Matters	Birth to 5 Matters
1	Composition of 3 Children explore the different pairs of numbers that make up number 3.	**3 – 4 Year Olds:** Explore the composition of numbers to 10.	**Range 4:** Through play and exploration, beginning to learn that numbers are made up (composed) of smaller numbers Beginning to use understanding of number to solve practical problems in play and meaningful activities Separates a group of three or four objects in different ways, beginning to recognise that the total is still the same
	Composition of 4 Children explore the different pairs of numbers that make up number 4.		
	Number Composition Children recap the different pairs of numbers that make up 3, 4 or 5.		
2	What Comes After? Children explore jumping along the number line to find what comes after.	**3 – 4 Year Olds:** Recite numbers past 5.	**Range 4:** May enjoy counting verbally as far as they can go.
	What Comes After? Children count along the number track and fill in the missing number by identifying the number that comes after the numbers they know.		
	What Comes After? Children sequence numerals to 5 by identifying what comes after each number.		
3	What Comes Before? Children jump back along a number track to find the number that comes before a given number.		
	What Comes Before? Children identify the missing number on a number track by identifying what number comes before a given number.		
	What Comes Before? Children sequence numerals by counting backwards along a number line and identifying what comes before.		
4	Numbers to 5 Children count how many objects there are in a set and identify if there are enough of each object for everyone.	**3 – 4 Year Olds:** Know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle') Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5 Solve real-world mathematical problems with numbers up to 5	**Range 4** Counts up to five items, recognising that the last number said represents the total counted so far (cardinal principle) Links numerals with amounts up to 5 and maybe beyond.
	Numbers to 5 Children work out what number is represented by different counting cards and then sequence them.		
	Numbers to 5 Children complete mazes by working their way through the numerals in the correct order.		
5	Consolidation – Shape Patterns Children describe patterns made up of 2-D and 3-D shapes.		
	Consolidation – More or Fewer Children identify which has more and which has fewer out of two sets of objects.		
6	Consolidation – What Comes Before or After? Children use a number line to help them identify what comes before or after a given number up to 5.		
	Consolidation – Composition Children explore the composition of number 5, through the song '5 Green Bottles'.		

White Rose Maths Scheme

White Rose Maths is an educational initiative that places deep understanding at the heart of mathematics learning. Its mastery approach focuses on depth over acceleration, ensuring pupils grasp key concepts thoroughly before progressing. Through visual representations, hands-on activities, and structured small steps, it builds strong foundations in number fluency, reasoning, and problem-solving.

This approach is particularly effective in primary schools because it:

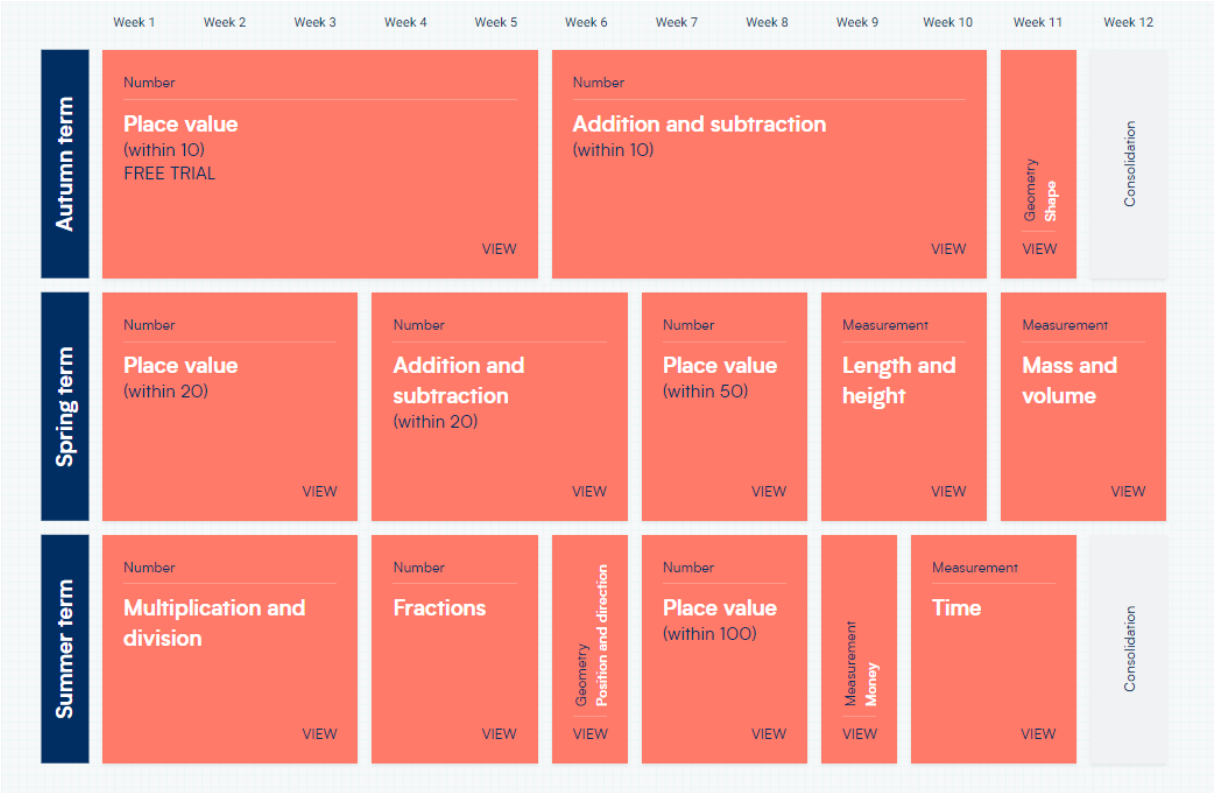
- Promotes conceptual understanding over rote memorisation.
- Aligns with cognitive development principles, using concrete-pictorial-abstract (CPA) methods.
- Encourages mathematical thinking, resilience, and independent learning.
- Provides coherent curriculum sequencing that supports all learners, including mixed-age groups.
- Offers ready-made resources that reduce teacher workload while maintaining high-quality instruction.

A study cited by UCL Institute of Education found that 76% of students showed improvement in problem-solving skills using this approach.

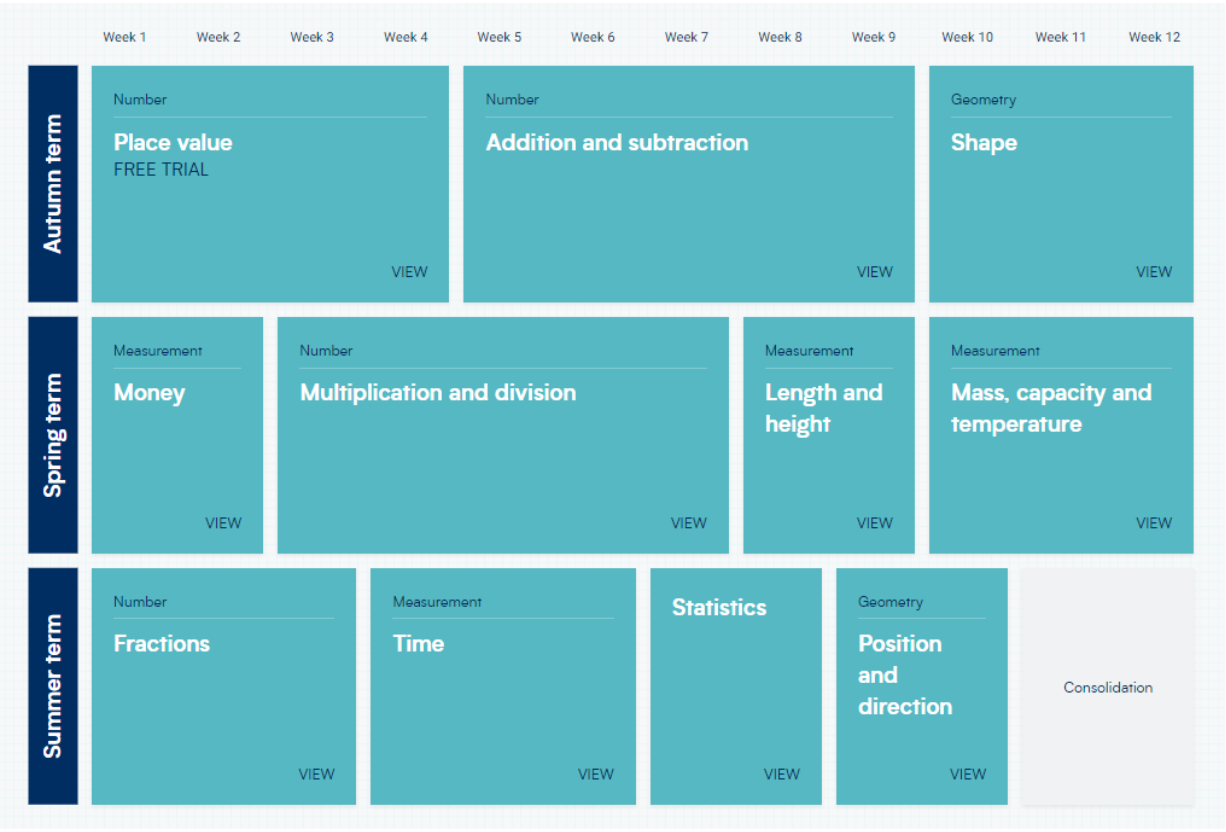
Main, P. (2022, March 3). White Rose Maths: A teacher's guide. Structural Learning. ***https://whiteroseeducation.com/***

Programme of study for Reception

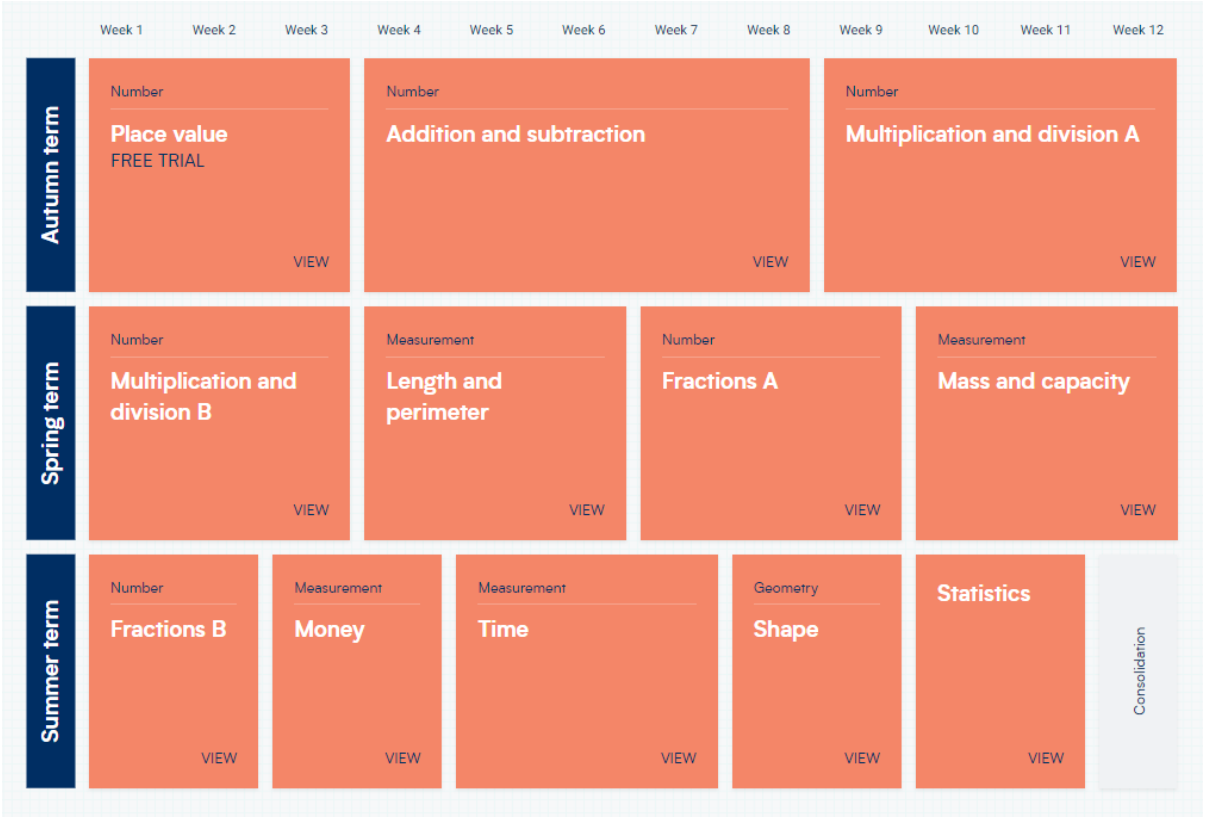
Programme of study for Year 1



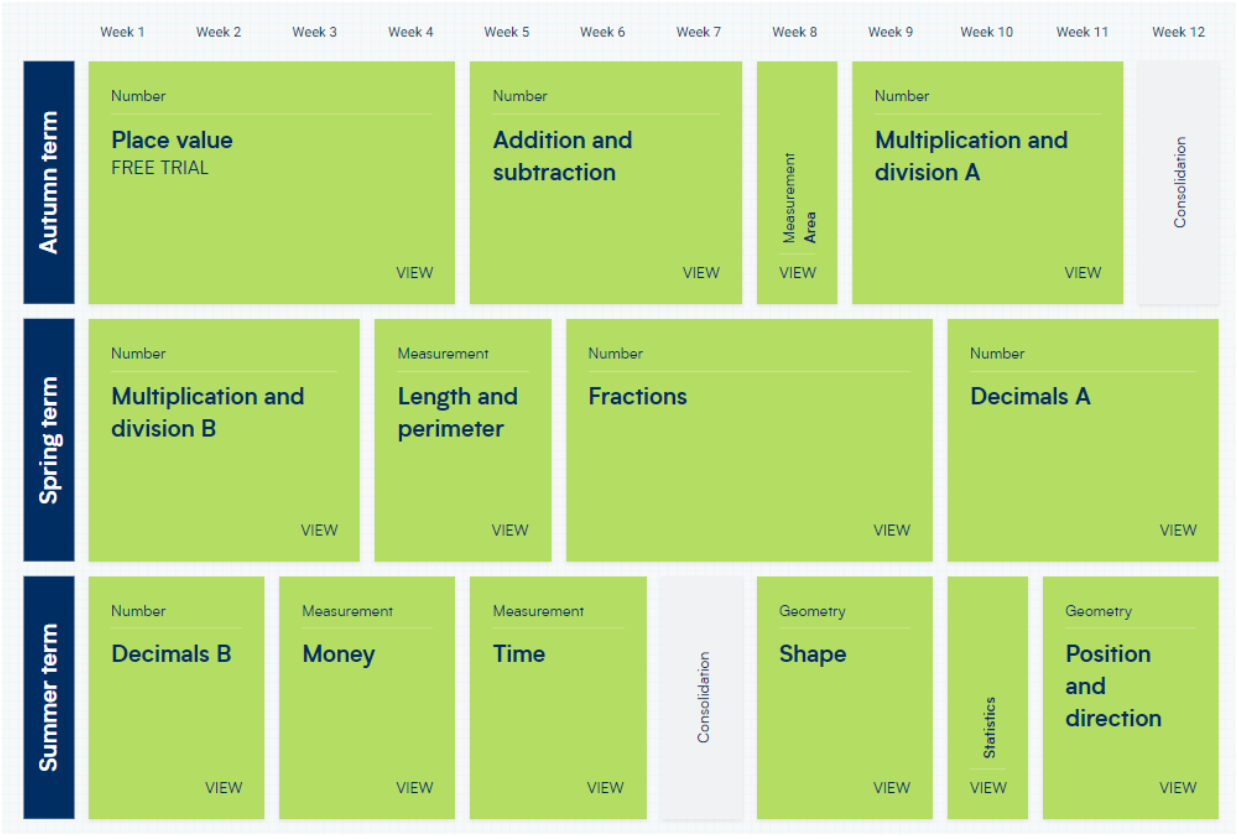
Programme of study for year 2



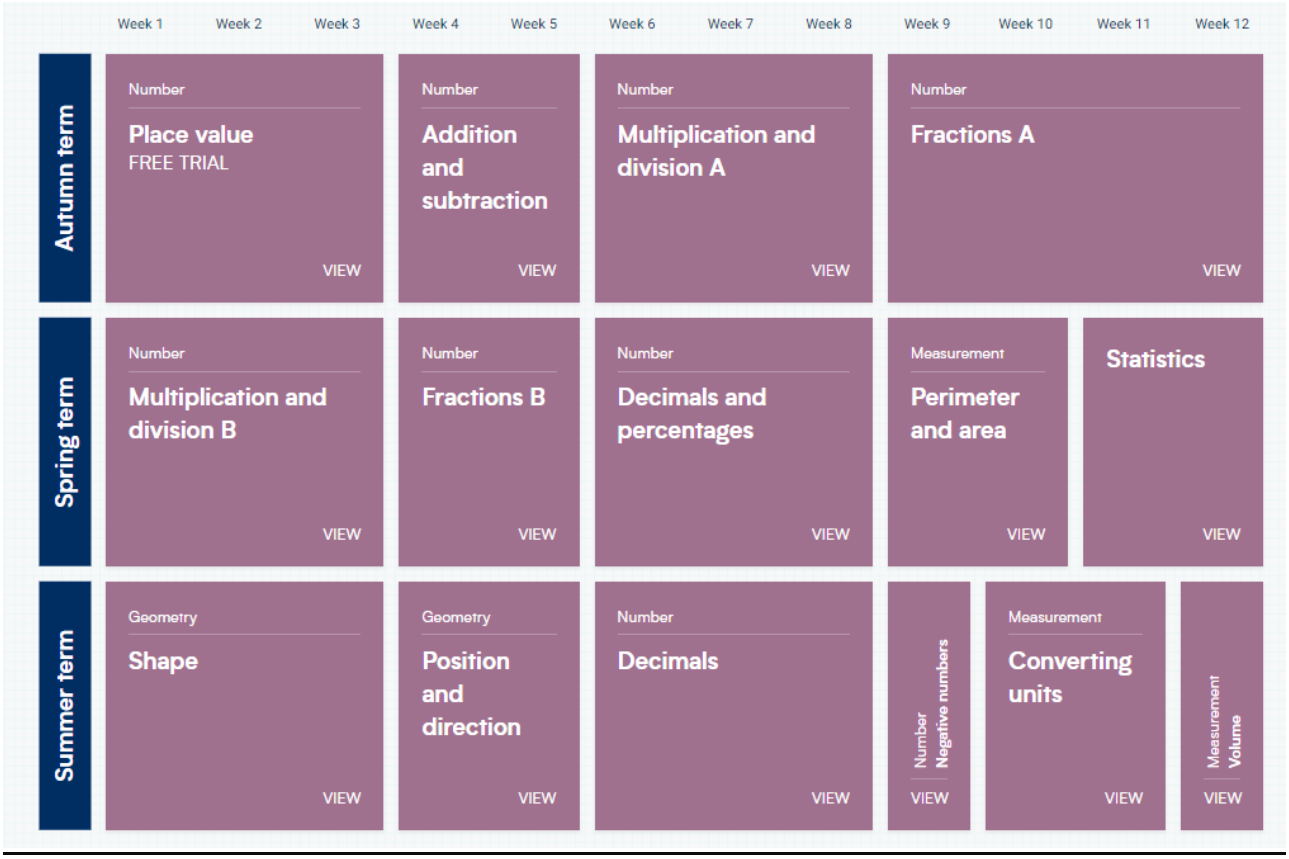
Programme of study for Year 3



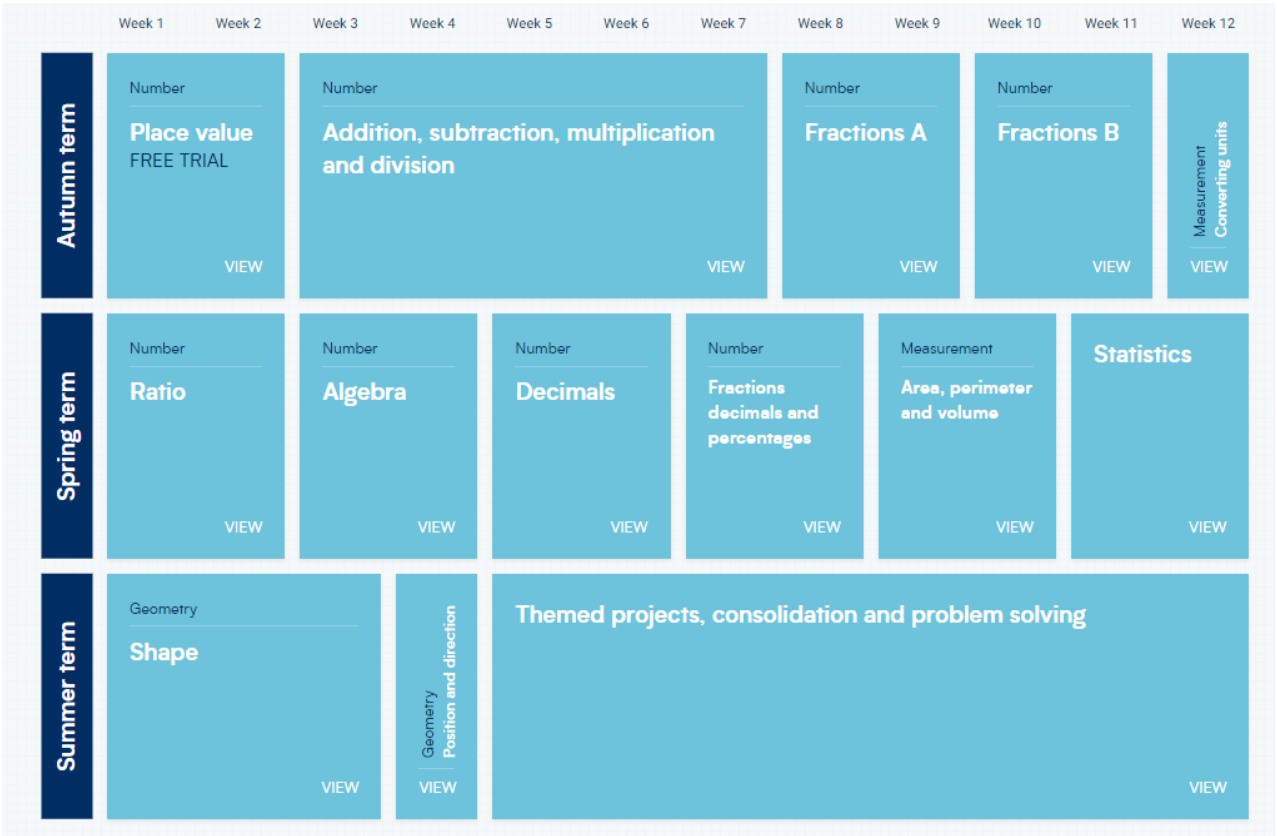
Programme of study for Year 4



Programme of study for Year 5



Programme of study for Year 6



Tailored Curriculum Design in Year 6

White Rose Maths is widely recognised for its structured, mastery-based approach that supports deep understanding through small-step progression, visual representations and regular revisiting of key concepts. It is particularly effective in primary schools because it promotes fluency, reasoning, and problem-solving while allowing all pupils to progress at their own pace.

During the Autumn Term, the full Year 6 Programme of Study is followed. From Spring onwards, the curriculum is adapted based on cohort needs, using QLA data to reorganise units and allocate more time to weaker areas. This ensures pupils are not only prepared for SATs but also develop deeper mathematical fluency.

Adaptive teaching in Year 6 plays a crucial role in preparing pupils for the transition to secondary school and the challenges of real-world problem solving. By this stage, teaching is intentionally tailored to address foundational knowledge deficits identified throughout earlier years. This ensures that every child receives the support they need to access the curriculum fully and confidently. Through targeted interventions, differentiated instruction and responsive planning, pupils are equipped not only with the academic skills required for Key Stage 3, but also with the resilience and independence necessary for lifelong learning and success beyond the classroom.

This approach aligns with the NCETM's Curriculum Prioritisation Framework, which advocates for coherent sequencing, readiness-to-progress criteria, and flexible planning to meet pupil needs.

National Centre for Excellence in the Teaching of Mathematics. (n.d.). Curriculum Prioritisation Framework. NCETM. Retrieved from https://www.ncetm.org.uk/classroom-resources/curriculum-prioritisation.

Medium Term Planning

At Hurst Hill, we use the White Rose Maths Scheme of Learning as the *spine* of our mathematics planning. The termly overviews guide the sequencing of lessons, ensuring coherent progression across the year. Each lesson is built around a specific small step, which is used to generate a clear and focused "Can I" learning objective. These objectives are structured progressively throughout the lesson, providing pupils with precise steps to follow and achieve success.
Staff use the White Rose scheme as the foundation of their planning but also adapt and supplement it to meet the needs of all learners. This may include:

- Challenging deeper thinking through enrichment tasks.
- Scaffolding learning for pupils who need additional support.
- Drawing on high-quality resources from NCETM, I See Reasoning, Test Base and Ready to Progress materials, to supplement the White Rose learning.

This flexible approach ensures that all pupils are supported and challenged appropriately, while maintaining a consistent and mastery-focused curriculum structure.

When dealing with a misconception, rather than a simple gap in learning, it is essential to identify what the child has misunderstood. This is achieved through discussion with the pupil and observing them complete a question, which helps pinpoint the source of confusion. Once identified, the misconception should be addressed through live modelling techniques, providing a clear scaffold and ensuring

the correct procedure is embedded through repeated, structured practice. To support this process, we use the Ready to Progress criteria, published by the Department for Education, to analyse pupils' understanding and identify foundational knowledge deficits. These criteria help teachers focus on the most critical concepts for progression and are used to inform planning, intervention, and assessment. Misconceptions and gaps are addressed through a tiered intervention model:

- Wave 1: Addressed *in the moment* during whole-class teaching.
- Wave 2: Tackled in *afternoon small-group sessions* for targeted support.
- Wave 3: Resolved through *precise 1:1 intervention* for pupils with significant or persistent misconceptions.

This structured approach ensures that all pupils receive the support they need to develop secure mathematical understanding, and that misconceptions are not only corrected but replaced with accurate, embedded knowledge.

The challenges in the medium-term planning have been chosen to provide additional opportunities for children to deepen their understanding. The White Rose challenges pose additional reasoning and problem-solving opportunities, allowing the children to explain their thinking. In addition to the White Rose true or false and reasoning and problem-solving questions, challenges have also been selected from Test Base, I See Reasoning and previous SATs papers. These provide variation for children, by offering them the opportunity to see different representations.

Higher attainers

When planning we ensure that higher attaining pupils receive appropriate challenge while maintaining full coverage of the curriculum. To deepen understanding and promote mastery, daily challenges are prepared that allow pupils to explore concepts at a greater depth. To challenge higher attainers effectively, we vary the types of questions using a range of high-quality resources, including White Rose Maths, NCETM, I See Reasoning and Test Base. These resources provide rich opportunities for reasoning and problem solving, which are essential for developing mathematical fluency and resilience. Teachers select tailored, high-quality questioning to probe pupils' thinking and encourage deeper exploration of mathematical ideas. These challenges are readily available and embedded into daily lessons, ensuring that pupils are consistently supported and stretched. This approach helps pupils move beyond procedural fluency and into conceptual understanding, preparing them for future learning and high-level mathematical thinking.

Lower attainers

We recognise that in order for pupils to access the current year group's teaching, they must have a secure understanding of the mathematical concepts that precede it. To address foundational knowledge deficits, teaching staff use the **Ready to Progress criteria, published by the Department for Education**, to identify key areas of prior learning that need to be retaught or reinforced. This ensures that all children have the opportunity to access and succeed in the current curriculum. Foundational concepts are planned for and integrated into lessons through starter activities revisiting prior learning, pre-teaching sessions where necessary and tailored adaptations within the White Rose Maths resources. Some pupils may work through Ready to Progress objectives from previous year groups during maths lessons to build the necessary understanding required to access the current year group content. This

teaching is always high-quality, engaging and manipulative-rich, ensuring that pupils are actively involved in their learning and supported in developing secure mathematical foundations.
Children who require additional support receive it through additional modelling during lessons, scaffolding techniques to break down complex ideas and revisiting previous steps in learning to reinforce understanding. This approach ensures that misconceptions and gaps are addressed effectively, enabling all pupils to progress confidently through the mathematics curriculum.

Planning

When planning, staff begin with the **White Rose Maths scheme of Learning and the National Curriculum**. The yearly and termly overviews guide the sequence of topics and lessons, ensuring full curriculum coverage. Teaching staff ensure that each lesson aligns with the National Curriculum by identifying the relevant domain and using it to create a focused "Can I" learning objective. Following the "Can I", staff construct progressive and challenging steps to success, typically in three stages. These steps help pupils identify their learning journey and provide teachers with clear opportunities to assess understanding throughout the lesson.
Once the domain and steps are established, staff adapt the White Rose PowerPoints to meet the requirements of the cohort. This may include adding slides to pre-teach concepts or address anticipated misconceptions, including a starter slide which explains the real-life relevance of the mathematical learning.
Staff ensure that they embed Fluent in Five activities at the start of the lesson. Fluent in Five is a vital component of our maths teaching. It supports pupils in developing fluency, accuracy, and flexibility in their mathematical thinking. As NCETM explains: *"Fluency demands more of students than memorisation of a single procedure or collection of facts. It encompasses a mixture of efficiency, accuracy and flexibility."* This daily practice helps reduce cognitive load, allowing pupils to focus more readily on new concepts and problem-solving.
During the planning stage, staff determine the most appropriate format for pupil work—whether in books or on printed sheets—based on the nature of the task and the need for pictorial representations.
To challenge and deepen thinking for all learners, staff **adapt and adopt** tasks from a range of high-quality resources, including I See Reasoning, Test Base, NCETM, ETC.
Lessons are designed to follow the principles of adaptive teaching within a mastery framework, ensuring access for all learners. This includes providing appropriate scaffolds, using manipulatives (e.g., counters, Base 10, measuring jugs) and selecting tasks that suit the needs of the cohort.
Staff also consider what to include on working walls to support learning and reinforce key concepts visually.
It is an expectation that staff watch the White Rose topic videos before teaching to understand delivery, anticipate misconceptions and prepare effective support strategies.
After each lesson, work is marked before the next maths session, allowing teachers to identify misconceptions and plan afternoon interventions.

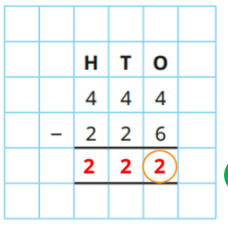
Adaptive teaching

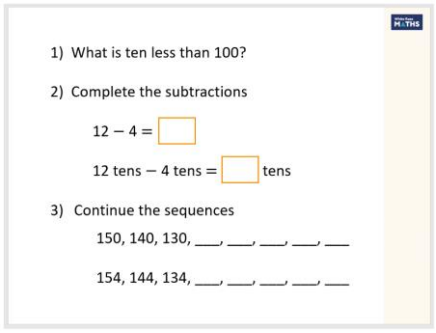
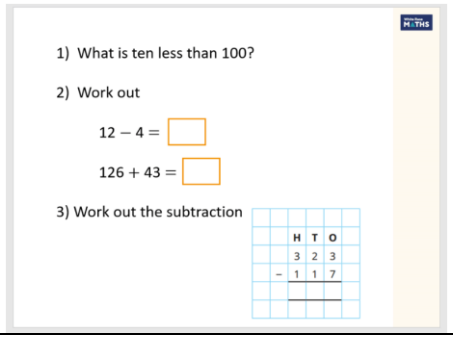
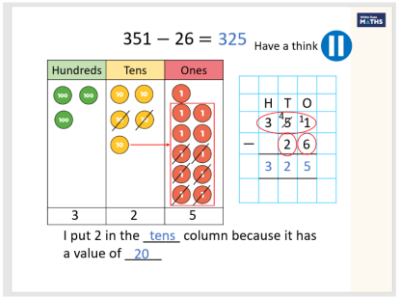
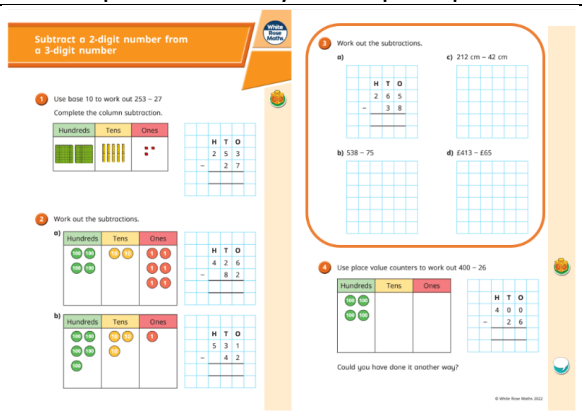
Adaptive teaching is a student-centred approach involving tailored instruction to meet the diverse needs of learners. In the context of primary mathematics mastery, it means adjusting the pace, support, and resources within a lesson to ensure that all pupils can access and engage with the learning, regardless of their starting point. Rather than creating separate tasks for different ability groups,

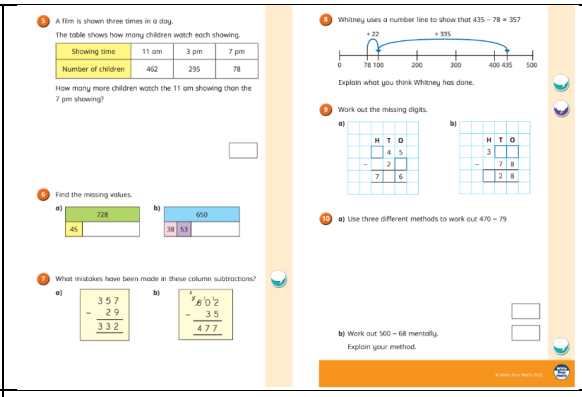
adaptive teaching within mastery focuses on keeping the class together while providing scaffolds, manipulatives, and targeted questioning to support those who need it, and rich challenges to deepen understanding for higher attainers. As the NCETM explains: *"Adaptive teaching is not about planning different lessons for different groups of pupils. It is about being responsive to pupils' needs and adapting teaching during and between lessons to support all pupils to achieve the learning goal."*

How does this relate to White Rose?

When adapting a scheme and a workbook, careful thought needs to be given to the attainment of the children in your group when considering their starting point and next steps in learning.

Worked example based on Year 3.	
Before teaching the next small step.	
Where am I in the teaching sequence? (What is my next lesson?)	Year 3, step 18: Subtract a two-digit number from a three-digit number
Before I carry on…	Did the children understand the key learning from the previous small step?
What was the previous small step? (today's lesson)	Adding two-digit and three-digit numbers together (small step 17)
How did they get on with this step? Were there any issues that need to be addressed?	Most children grasped the concept to align the ones column first when setting up the calculation. However, there were a few who still needed this as a reminder, but not a significant number. This can be picked up in an afternoon session with feedback as actions or addressed as a starter in the next days learning.
What happened yesterday?	Children were working on subtracting crossing 10 and 100. There were more children making a common error with this step. They were making the error of swapping the digits if the number was smaller than the bottom, giving them an incorrect difference. Although this has been revisited with an afternoon intervention, it is still something we need to be mindful of when preparing for our next lesson.  top
Do children need any prior knowledge for the next step?	Yes – we need to identify those struggling to align the numbers on a place value grid and those consistently struggling to find the difference.
How to adapt the lesson resources	
Step 1	Download the teaching slides for the lesson you need to teach next. Adapt the Get Ready section to incorporate the two crucial elements of prior knowledge.

<table>
<tr><td></td><td colspan="2">See example below.</td></tr>
<tr><td></td><td>Before adapting
 
</td><td>After adapting
 
</td></tr>
<tr><td>Step 2</td><td colspan="2">Review the White Rose slides.
What will you model? How will you check for understanding?</td></tr>
<tr><td></td><td> 
</td><td>In this case, you can demonstrate the use of the place value chart on the board alongside the formal calculation. This gives you the opportunity to highlight the errors made last time and give feedback as actions to move the learning forwards.
The children could also complete another example themselves using counters and place value charts, while completing the formal method on a whiteboard alongside.
If further modelling is needed, you could use the White Rose interactive resources to allow you to create an example using the place value chart and counters.</td></tr>
<tr><td>Step 3</td><td colspan="2">What should the work look like for this lesson?
Should the children do all the questions?
Which questions will you adapt to deepen their understanding?
Which questions will you adapt to provide additional support?</td></tr>
<tr><td></td><td> 
</td><td>In this case, we need to ensure that all children complete question 3 accurately to know that the pervious misconception has been rectified.
To support those children still in need of an additional scaffold, some will start at question 2 as this supports with the setting out of the manipulatives and the layout of the formal calculation.
To extend those who are confident on question 3, you can explore the ‘same difference’ question 4 in other ways (EG 399-25)</td></tr>
</table>

Step 4	 5 A film is shown three times in a day. The table shows how many children watch each showing. Showing time: 11 am, 3 pm, 7 pm Number of children: 462, 295, 78 How many more children watch the 11 am showing than the 7 pm showing? 6 Find the missing values. a) 728, 45 b) 650, 38, 53 7 What mistakes have been made in these column subtractions? a) 357 − 29 = 332 b) 802 − 35 = 477 8 Whitney uses a number line to show that 435 − 78 = 357 + 22, + 335 0, 78, 100, 200, 300, 400, 435, 500 Explain what you think Whitney has done. 9 Work out the missing digits. a) H T O: 4 5, − 2 ?, 7 6 b) H T O: 3 ? ?, − 7 8, 2 8 10 a) Use three different methods to work out 470 − 79 b) Work out 500 − 68 mentally. Explain your method.	Select an appropriate question to assess the learning so far. Question 7 is good to determine if children understand that we don't just fine the difference between the digits. Additionally, 7b highlights another common misconception, exchanging over a 0.
Step 5	Do any of the children need additional fluency practice before moving on to reasoning questions? This should be prepared before the lesson so that is readily available. Not **<u>all</u>** the questions have to be used in each lesson.	

Lesson structure

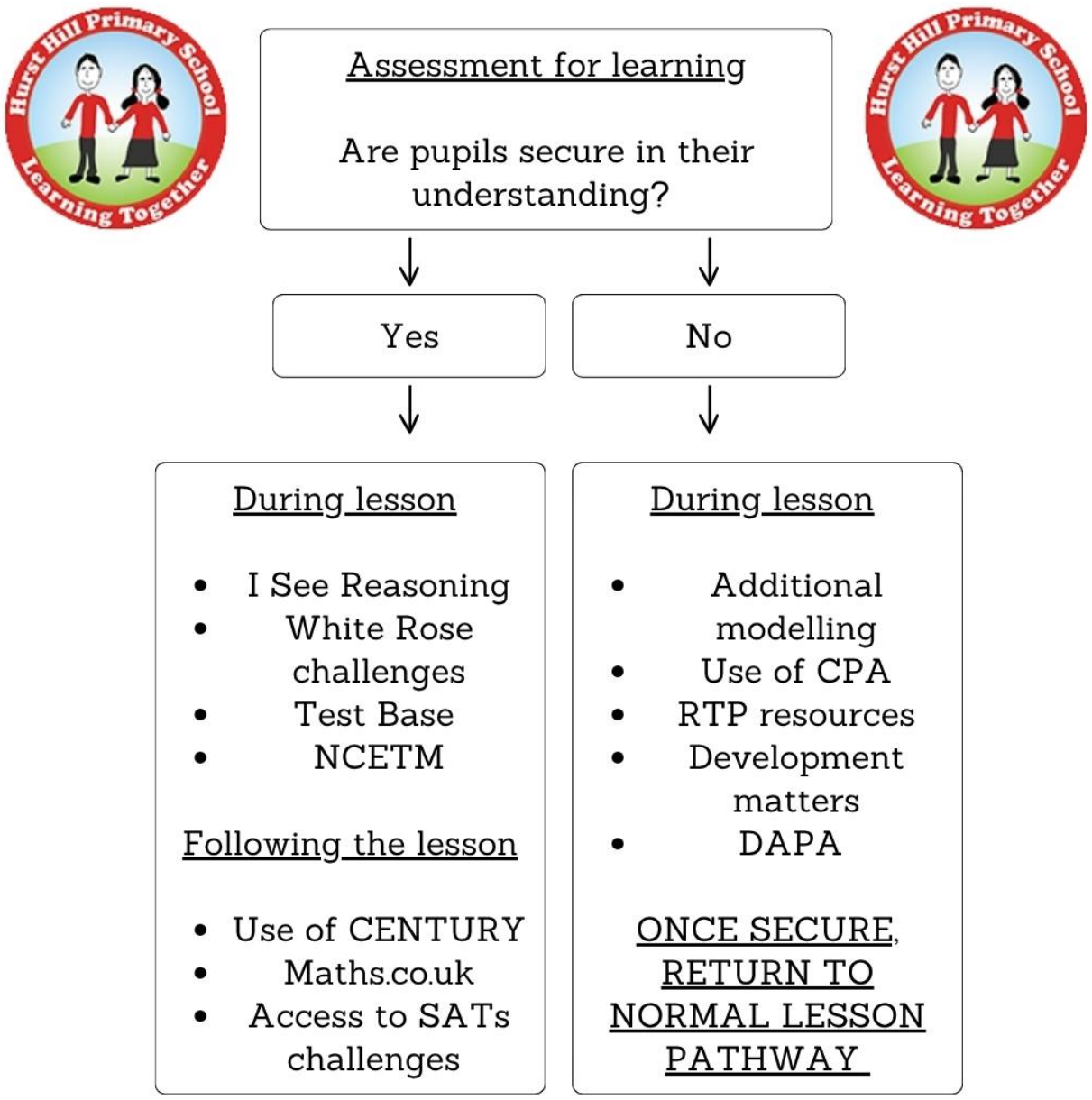
- **Fluent in Five –** A daily maths starter activity designed to develop pupils' fluency and confidence in a wide range of mathematical concepts. Each session consists of five carefully chosen questions that revisit prior learning, address common misconceptions and introduce elements of upcoming topics. The questions are varied to ensure broad curriculum coverage. This approach not only reinforces key skills but also helps identify gaps in understanding, making it an effective tool for both

consolidation and pre-teaching. By embedding this routine into daily practice, learners build mathematical resilience and deepen their conceptual understanding over time.

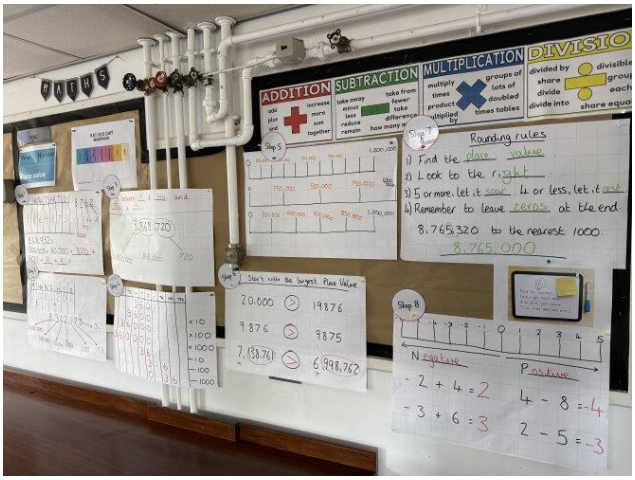
- **Get Ready and Common Errors -** To ensure continuity and progression in learning, each lesson begins by revisiting the previous day's content through a short, focused activity. This is designed to assess pupils' understanding of what has gone before and to identify any gaps or misconceptions that may need addressing before moving forward. By completing these tasks on whiteboards, teachers can quickly gauge existing knowledge and provide immediate feedback. This formative approach allows for targeted support or additional modelling where necessary, ensuring that all pupils are ready to access the new learning. The content is carefully chosen to build on prior knowledge and lay the foundations for the day's objectives, creating a coherent and responsive learning journey. Whilst referring to the working wall and previous learning helps to set the foundations for a new day's learning.
- **Context -** Applying mathematical concepts to real-life situations helps children make meaningful connections between what they learn in the classroom and the world around them. By embedding learning in familiar, everyday contexts—such as shopping, cooking, travel, or sports—pupils are more likely to understand the relevance and purpose of mathematical skills. Real-life worked examples not only reinforce the importance of topics like measurement, percentages, or problem-solving, but also support deeper understanding by showing how maths is used to make decisions, solve problems and interpret information. This contextual approach enhances engagement, builds confidence and encourages pupils to see themselves as capable mathematicians beyond the classroom.
- **Let's Learn –** This is the main modelling section of the lesson, where new learning is explicitly introduced and carefully structured to support pupil understanding. During this phase, manipulatives are used alongside visual representations on the slides to provide concrete support and deepen conceptual understanding. To ensure clarity and consistency, the slides are reviewed and adapted before the lesson to meet the specific needs of the class; the manipulatives used in the classroom should match those shown on the slides to avoid confusion or the development of misconceptions. Teaching follows an I–We–You approach: the teacher first models the concept (I), then works through examples with the class (We), before pupils apply the learning independently (You). Ongoing assessment at each stage allows for immediate identification of misconceptions and enables timely intervention to support all learners effectively.
- **Apply –**

  Following the modelling section of the lesson, children move on to complete their independent work in their maths books. It is expected that pupils will begin this phase at different paces, depending on their confidence and understanding of the new learning. Some children may require additional modelling or scaffolding to help them revisit key steps before accessing age-appropriate tasks. It is essential that teachers closely monitor this stage, identifying any misconceptions or gaps in understanding early on. Prompt intervention at this point ensures that learning is secure and meaningful, rather than superficial, and allows all pupils to make sustained progress towards the lesson's objectives.
- **Review –** This section of the lesson is essential for reinforcing and consolidating the day's learning. It provides pupils with the opportunity to apply their new knowledge independently, demonstrate their understanding and deepen their thinking. Through carefully planned plenaries, children are encouraged to reflect on what they have learned and make connections to previous concepts. This phase also allows teachers to assess the effectiveness of the lesson and identify any remaining misconceptions or gaps in understanding. By ensuring that this part of the lesson is purposeful and well-structured, pupils are more likely to retain and apply their learning with confidence.

Following on from the lesson, staff will use the flowchart below ready for the next lesson.



Working walls



Working walls are a vital classroom tool designed to support pupils as they transition from scaffolded to independent learning in mathematics. They serve as a dynamic, evolving reference point that reflects the current learning journey, helping children build connections and deepen their understanding.

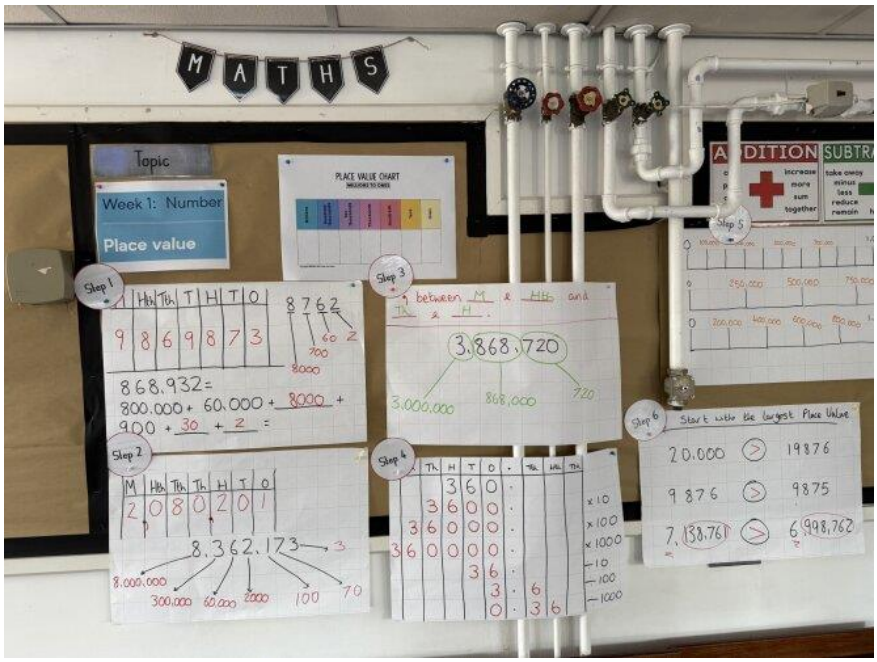
According to the Education Endowment Foundation (EEF), "worked examples and visual representations can reduce cognitive load and support pupils in developing procedural fluency and conceptual understanding".

To maximise their effectiveness, working walls should include clearly modelled examples which mirror the manipulatives and representations used during the lesson's I–We–You structure. These examples are not only a reference for independent work, but also a teaching aid during guided group sessions.

As recommended by White Rose Maths, key slides should be identified and printed during planning, annotated in the moment during teaching to reinforce the modelled method. Each day's learning is labelled with the corresponding small step from the White Rose scheme, ensuring clarity and progression. The wall should remain focused on the current topic, displaying prior steps to help children form a schema and tackle new challenges with confidence.

Consistency across classrooms is key; headings and layout should align with school-wide expectations to support familiarity and independence. As the NCETM highlights, "lesson design should expose the structure of mathematical concepts and emphasise connections," and working walls are a powerful way to achieve this. Teachers should actively direct pupils to use the wall as a self-checking and support strategy, encouraging autonomy and reinforcing accurate methods.

Early Learning HQ – The Advantages of Classroom Displays. NCETM – Developing your use of manipulatives in maths teaching. BERA – Manipulatives: Using pedagogy to drive practice



What Maths books should look like

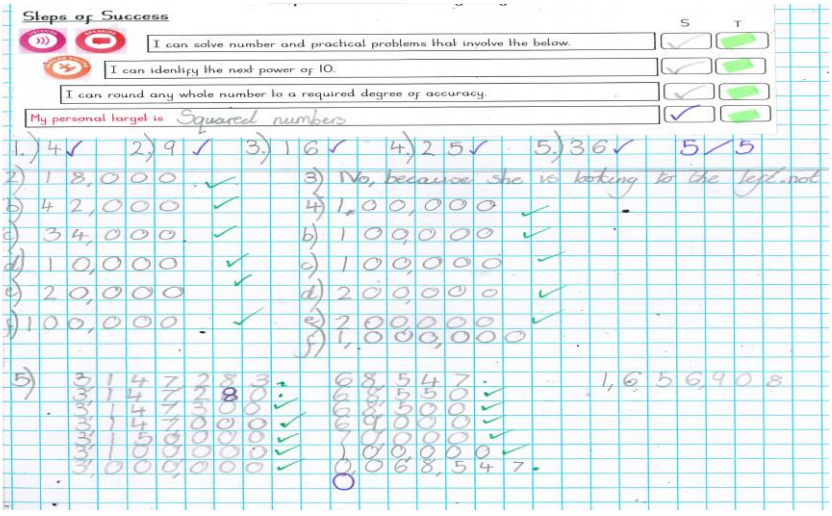
Our maths books reflect a culture of high expectations, deep thinking and consistent challenge for every pupil. Each book showcases engaging, rich and carefully sequenced work, which supports progression through the curriculum. Every child is challenged through deliberately chosen questions aligned with the National Curriculum.

At the top of each page, pupils begin with Steps to Success, which are planned to guide them through the lesson and support self-reflection. This is followed by Fluent in Five, a daily arithmetic starter consisting of five varied questions designed to revisit prior learning and pre-teach upcoming content. These questions span different mathematical domains, ensuring broad coverage and reinforcing fluency.

The main body of the work is precisely chosen by the teacher and linked to the day's learning objective, framed as a 'Can I…' question. While White Rose Maths is the core planning resource, teachers adapt and supplement it with additional materials to meet the needs of learners. Pupils may use printed sheets for pictorial representations, but most work is completed directly in their books, with a strong emphasis on number formation and spatial accuracy using squared paper.

Presentation is a key focus. Teachers model high-quality layout and expectations, supported by a presentation guide inserted at the front of each pupil's book. This guide outlines non-negotiables for how work should be presented. At the front is a Key Performance Indicator (KPI) sheet, which maps out the National Curriculum objectives and allows pupils to track progress and identify next steps.

Books are marked daily to inform sequential teaching. Teachers use green pen to tick correct answers and dot where errors occur. Pupils respond using purple pen, correcting mistakes and reflecting on feedback. Teachers highlight the Steps to Success to show which criteria have been achieved. Where verbal feedback is given, a stamp is used to indicate this and where manipulatives are used to support learning, a concrete stamp is added with a brief description of the resource used.



If pupils require further support, they may be asked to revisit specific questions during Wave 2 or Wave 3 interventions, which are clearly labelled to show feedback in action. Marking is used not just to correct, but to inform teaching, identify misconceptions and guide pupils toward deeper understanding.

Meeting the Needs of All Learners

Meeting the needs of all learners in mathematics requires thoughtful planning, inclusive teaching strategies and targeted support—particularly for pupils with additional Special Educational Needs and Disabilities (SEND). Scaffolding is one of the most effective approaches for enabling SEND pupils to

access learning and develop independence. It involves providing temporary, structured support which helps pupils access learning they cannot yet manage independently, with the aim of gradually removing support as confidence and competence grow (SEND Vision, 2023). In maths, this might include breaking learning into smaller steps, using visual models and manipulatives and offering additional rehearsal opportunities (HFL Education, 2023). Strategies such as chunking instructions, modelling tasks aloud, providing worked examples and using sentence starters or word banks can help pupils overcome barriers to understanding and language (EEF, 2022). Tools like graphic organisers and guided practise using the "I do, we do, you do" model further support progression. Technology, peer support and collaborative planning between teachers and teaching assistants also play a vital role in embedding scaffolding into everyday practice. Crucially, scaffolding must be carefully monitored to avoid over-reliance; the goal is to foster independence, resilience, and problem-solving skills. As Daniel Sobel and Sara Alston note in *The Inclusive Classroom*, "at the heart of the inclusive classroom is simply good teaching" (Sobel & Alston, 2021), and scaffolding is a key part of that. This approach aligns with the Education Endowment Foundation's (EEF) guidance, which identifies scaffolding as one of the "five-a-day" evidence-informed strategies for supporting pupils with SEND in mainstream classrooms (EEF, 2022).

Afternoon Maths sessions

Every class benefits from an additional afternoon maths session, designed to reinforce, pre-teach or address misconceptions. Sessions are highly responsive and tailored to the needs of each class, allowing teachers to slow the pace, revisit key concepts and provide pupils with valuable time to reflect and practise. Sessions may take the form of Wave 1, 2 or 3 interventions, depending on the level of support required. While the content may align with the White Rose scheme, teachers have the flexibility to use a wide range of resources to deliver high-quality, targeted instruction. Approaches vary—from CPA-based activities using manipulatives, to whiteboard work for rapid AFL (assessment for learning) or focused tasks in intervention books or maths books. There is no fixed format; the structure is determined by what will best support pupil progress.

In Year 6, this time may be used intensively to address knowledge deficits identified through QLA analysis; Years 3 and 4 use it to build fluency through Number Sense Times Tables and Years 1 and 2 focus on Number Sense Number Bonds. This flexible model ensures that all pupils receive the support they need to make rapid and sustained progress in maths.

Interventions

At Hurst Hill, we implement a structured intervention model consisting of Wave 1, Wave 2, and Wave 3 interventions, which are highly adaptive and responsive to the needs of individual learners.

- Wave 1 refers to high-quality, inclusive teaching that meets the needs of all pupils within the classroom. This includes effective modelling, questioning, scaffolding, and differentiation during whole-class teaching.
- Wave 2 involves targeted support for pupils who may need additional input to grasp specific concepts. This could be delivered in small groups or one-to-one sessions and is often short-term and focused.
- Wave 3 is intensive, individualised support for pupils who have significant gaps in understanding or who are working well below age-related expectations. These interventions are bespoke and may involve specialist resources or approaches.

These interventions are essential for ensuring that no child is left behind. By identifying misconceptions early and providing timely support, teachers can prevent small gaps from becoming long-term barriers

to learning. Interventions also allow for personalised learning pathways, helping pupils to build confidence and fluency in key mathematical concepts.

Interventions at Hurst Hill are embedded into the daily routine and can take place at various times:

- **Early Morning Work:** Pupils may complete targeted tasks as they arrive, allowing teachers to revisit previous learning or pre-teach upcoming content.
- **Assembly Time:** Used for short, focused interventions.
- **Afternoon Maths Sessions:** Every class has a dedicated afternoon slot for maths, used to consolidate morning learning, address misconceptions, or pre-teach new content.
- **In-the-Moment Support:** Teaching Assistants (TAs) provide responsive support throughout the day, working with individuals or small groups as needed.

Maths interventions are tailored and flexible, designed to meet the specific needs of each pupil. These interventions are a cornerstone of our approach to rapid progress. By embedding them into the school day—whether during early morning work, assembly time, afternoon maths, or through in-the-moment support with teaching assistants—we ensure that learning is reinforced, misconceptions are addressed and pupils are continually moving forward. As the Education Endowment Foundation (EEF) highlights, "targeted small group tuition is effective and can accelerate progress by up to four months when delivered well," making these sessions a vital part of our strategy to close gaps and raise attainment.

Mastering Number

The Mastering Number programme, developed by the National Centre for Excellence in the Teaching of Mathematics (NCETM), is a national initiative aimed at securing firm foundations in number sense for children in Reception, Year 1, and Year 2. The core purpose is to ensure that pupils develop fluency in calculation and a confident, flexible understanding of number. The programme consists of daily teacher-led sessions, typically 10–15 minutes long, which focus on additive relationships and key mathematical structures. These sessions are designed to complement the main maths lesson and are supported by high-quality teaching materials and professional development for staff. Over time, the goal is for children to leave Key Stage 1 with a deep understanding of number that supports future success in mathematics.

Power of Two

Power of Two is a highly structured, one-to-one intervention programme, a Power of Two-style approach involves breaking down mathematical concepts into small, manageable steps and delivering them through consistent, focused sessions. These sessions are typically led by teaching assistants or support staff and are tailored to the individual needs of the learner. The method is especially effective for pupils who require intensive support, such as those with specific learning difficulties or persistent misconceptions. The emphasis is on repetition, mastery, and confidence-building, with progress tracked closely over time.

Number Sense Times Tables

The Number Sense Times Tables Fluency Programme is a fully resourced, mastery-based scheme of work designed to help children achieve fluency in multiplication and division facts. Developed by Number Sense Maths, the programme provides a structured and coherent curriculum focused on 36 essential multiplication facts, which form the foundation for all written and mental multiplication and division. It begins in Year 3, once pupils are fluent in addition and subtraction facts, and is delivered through daily 10-minute fluency sessions alongside 14 conceptual lessons spread across Years 3 and 4.

These lessons use visual and auditory methods—including chanting and pattern recognition—to embed understanding and recall. The programme also prepares pupils for the Year 4 Multiplication Tables Check (MTC) by teaching the 10, 11, and 12 times tables in a lighter-touch format. With a proven impact on pupil outcomes, the scheme supports every child in developing both factual recall and conceptual understanding, making it a powerful tool for building long-term mathematical fluency.

Number Sense Number Bonds

The Number Sense Number Bonds Programme, developed by Number Sense Maths, is a structured and research-informed scheme designed to build fluency in addition and subtraction facts through a deep understanding of number relationships. Aimed primarily at Key Stage 1 and beyond, the programme supports pupils in developing confidence, flexibility, and automaticity with number facts. It is built on the principle that factual fluency is foundational to mathematical success and is achieved through systematic teaching, visual models, and derived fact strategies.

The programme is delivered through short, daily sessions and is designed to complement whole-class teaching or be used as an intervention. It draws on the structure and pedagogy of phonics programmes, ensuring that children move beyond counting in ones and instead develop efficient strategies for solving number problems. By focusing on part-whole relationships and visual representations, the programme helps pupils internalise number facts and apply them confidently in a range of contexts.

First Class at Number

First Class@Number is a structured, small-group maths intervention developed by the Every Child Counts team at Edge Hill University. It is designed to support pupils in Key Stage 1 and lower Key Stage 2 who are struggling with core number concepts. Delivered by trained teaching assistants, the programme consists of up to 30 half-hour sessions over 10–15 weeks, supplementing regular classroom maths lessons. The sessions focus on key areas such as place value, addition, subtraction, and early multiplication and division, using engaging activities, games, and visual models to build confidence and understanding. Each topic begins with a simple assessment to tailor the sessions to address foundational knowledge. The programme encourages mathematical talk, reasoning, and reflection, helping children to develop a deeper understanding of number and calculation.

Ready to Progress

Ready to Progress in mathematics, as outlined in the National Curriculum guidance, refers to a set of key learning criteria that identify the most essential mathematical concepts and skills pupils should master by the end of each year from Year 1 to Year 6. These criteria support coherent progression through the curriculum and help teachers focus on foundational knowledge that underpins future learning. By highlighting core areas such as number sense, calculation strategies and spatial reasoning, the framework enables targeted interventions, allowing educators to quickly identify gaps and accelerate pupil progress through focused teaching and assessment. This approach is especially valuable for supporting rapid catch-up and ensuring all learners are equipped for the next stage of their mathematical development.

CENTURY

CENTURY is an intelligent teaching and learning platform that uses artificial intelligence, neuroscience, and learning science to personalise education for each pupil. In primary mathematics, CENTURY delivers adaptive micro-lessons—called *nuggets*—that respond to each child's strengths and gaps in understanding. The platform provides instant feedback, tracks progress in real time and offers diagnostic assessments to identify misconceptions early. By automating tasks like marking and

analysis, CENTURY frees up teacher time and enables targeted interventions. This data-driven approach helps accelerate pupil progress by ensuring that every learner receives the right support at the right time, making it a powerful tool for boosting attainment and closing learning gaps in primary maths.

Maths.co.uk

Maths.co.uk is a powerful online platform that supports maths education through targeted assessment and intervention. It provides diagnostic tools that help teachers quickly identify individual or class-based support by analysing topic-specific data and drilling into National Curriculum domains. Using this data, educators can pinpoint areas requiring intervention and tailor their teaching accordingly. Teaching Assistants (TAs) also benefit from structured intervention folders, which include pre-assessments from the website to gauge existing skills and guide their sessions. These are followed by end-of-intervention assessments on the website to measure progress and inform next steps. This cycle of assessment and targeted support ensures pupils receive high quality interventions.

Times Tables

Number Sense Times Tables Programme

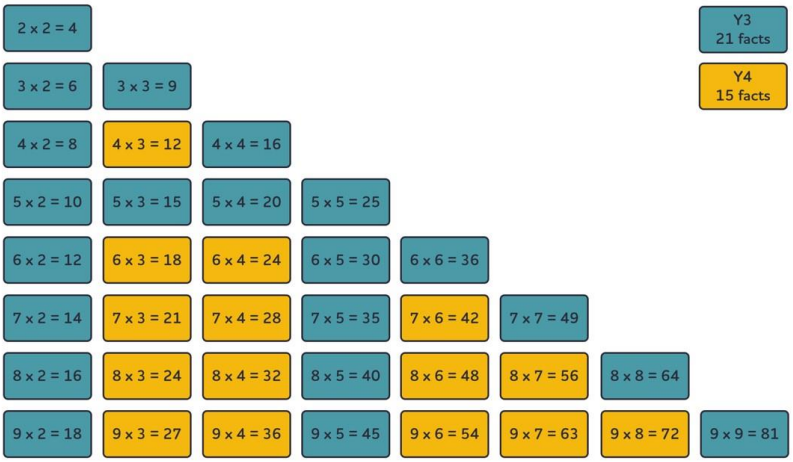
A fully resourced scheme of work focused entirely on times tables. The highly visual, research informed programme provides the structure and depth to times tables teaching that children need to achieve fluency in essential multiplication and division facts and concepts. A true Mastery programme, designed to achieve fluency for every child without exception.

Research informed

The programme is informed by research into the mathematical development of young children, particularly how children achieve automaticity in multiplication facts.

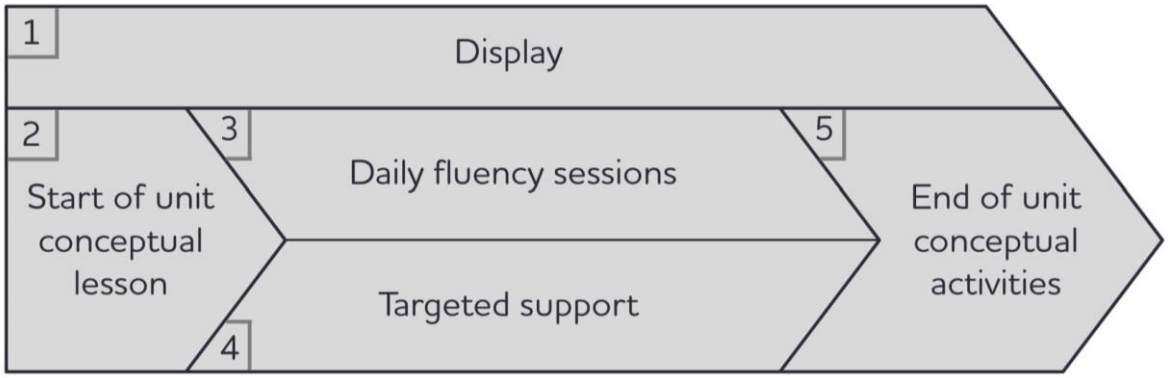
36 essential facts

The programme develops recall of 36 core multiplication facts. Fluency in these facts provides the foundation for all written and mental multiplication and division. New facts are introduced and taught visually through the conceptual lessons, and aurally through the chanting of verbal sound patterns. Facts are learned to fluency through daily practice sessions with scores tracked daily and targeted support provided where needed.



5 step approach

Each unit of the programme has 5 steps, which collectively support every child in your class to become fluent in both factual recall and understanding of concepts. Each step is critical if all children are to achieve fluency. Training videos on each of the steps are provided.



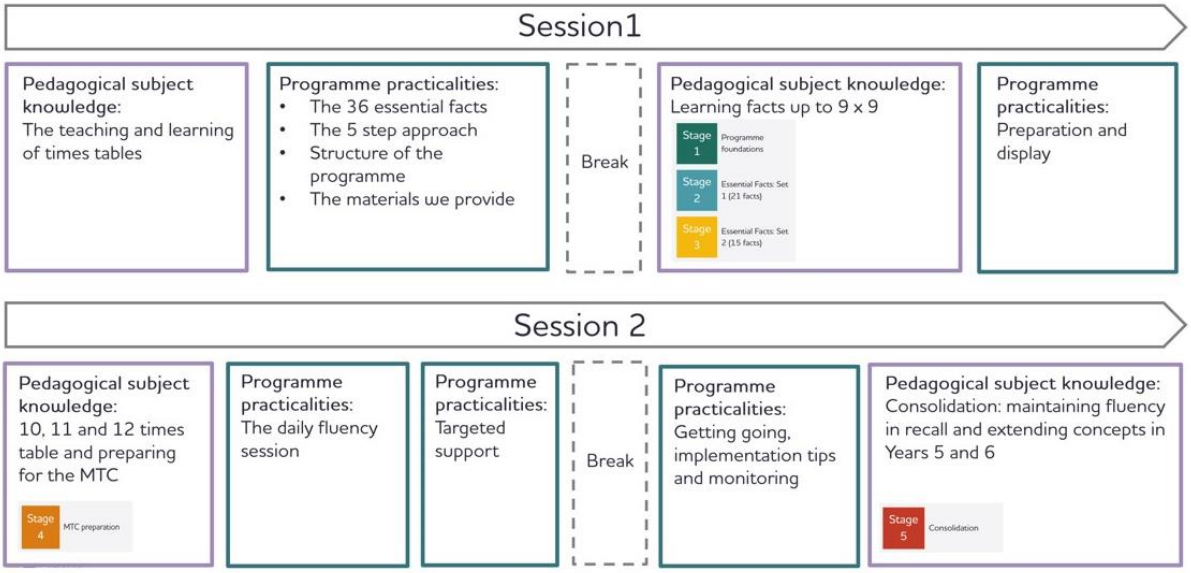
MTC preparation

In addition to the 36 essential facts, the programme teaches the 10, 11 and 12 times tables in preparation for the Y4 Multiplication Tables Check (MTC). These facts are taught in a lighter touch way, with the 10 and 11 times tables taught through patterns and the 12 times table taught well enough for MTC success.

Coherently sequenced times table curriculum

The programme starts from January of Year 3, once children are fluent in addition and subtraction facts.

Stage 1: Programme Foundations	Unit 1 Doubles					
Stage 2: Essential Facts Set 1 (21 facts)	Unit 1 2 Times Table	Unit 2 Square Times Table	Unit 3 5 Times Table	Unit 4 Consolidation		
Stage 3: Essential Facts Set 2 (15 facts)	Unit 1 Recap	Unit 2 3 Times Table	Unit 3 4 Times Table	Unit 4 6 Times Table	Unit 5 7 Times Table	Unit 6 8 Times Table	Unit 7 9 Times Table
Stage 4: MTC preparation	Unit 1 More squares	Unit 2 10 & 11 Times Tables	Unit 3 12 Times Table	Unit4 MTC Preparation		
Stage 5: Consolidation	Unit 1 Consolidation to 9 x 9	Unit 2 Consolidation to 12 x 12				



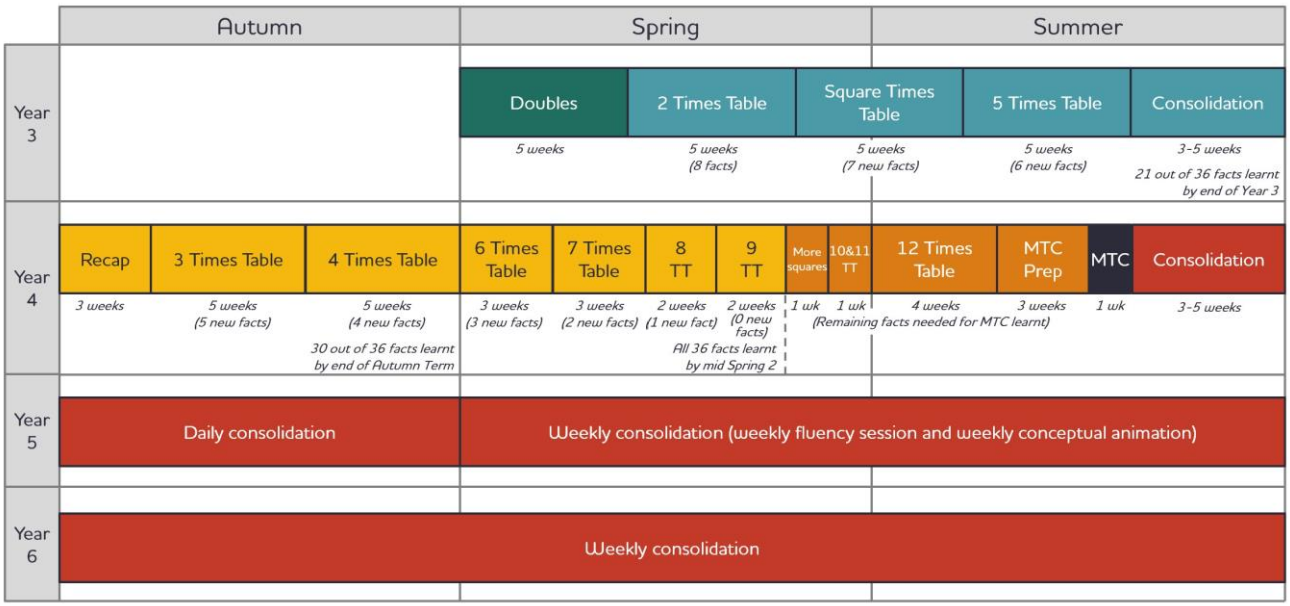
Fully resourced scheme of work

The fluency programme is taught through five stages. Each stage is broken down into smaller teachings units, with resources provided for each unit. The resources for each teaching unit include

- Guidance on lesson planning, pupil tracking and classroom displays
- Conceptual lesson animations and exercises which draw out the key patterns and structures for multiples of the number being studied
- Practice booklets for daily, 10 minute fluency sessions
- End of unit activities focusing on applying times table facts

Professional development

The structured nature of the programme, combined with the detailed guidance for each teaching unit, and training videos for each step in the approach, provides in built support for teachers and TAs to develop their pedagogical subject knowledge and classroom teaching skills.



Times Tables Rock Stars (TTRS)

Times Tables Rock Stars (TTRS) is embedded across Key Stage 2 to develop rapid recall of multiplication facts up to 12 × 12. The platform is used both in school and at home, with dedicated time allocated during early morning work and homework tasks. Engagement is incentivised through phase assemblies, certificates and competitive year group or Hales Valley Trust (HVT) battles. A particular emphasis is placed on Year 4 pupils, where TTRS plays a central role in preparing for the statutory Multiplication Tables Check (MTC).

For assessment, TTRS Sound Check provides teachers with a score out of 25 for each pupil, based on their ability to answer multiplication questions within a six-second time limit. This data enables teachers to pinpoint strengths and gaps in pupils' times tables knowledge, plan targeted interventions and monitor progress over time. It also supports meaningful conversations with parents and contributes to overall maths attainment tracking.

School leaders use Sound Check data to gain a strategic overview of multiplication fluency across classes and cohorts. This insight informs decisions around resource allocation, staff CPD and curriculum planning, ensuring consistent and effective teaching of times tables.

Multiplication Tables Check (MTC)

The Multiplication Tables Check (MTC) is a statutory online assessment taken by all Year 4 pupils in England, designed to evaluate their fluency in recalling multiplication facts up to 12 × 12. Each pupil answers 25 questions with a six-second time limit per question, providing a snapshot of their automaticity and readiness for more complex mathematical concepts.

At our school, preparation for the MTC is embedded throughout the year using a tiered approach. Wave 1 teaching includes daily whole-class instruction focused on multiplication and recall strategies, supported by the Number Sense Multiplication Programme. Wave 2 interventions involve targeted use of digital platforms such as Times Tables Rock Stars (TTRS), CENTURY Tech, and small group Number Sense sessions. For pupils requiring additional support, Wave 3 interventions offer high-quality 1:1 teaching informed by TTRS heatmaps and diagnostic data. Practice is built into daily routines through early morning work, maths lessons, and afternoon interventions.

Parental engagement is a key part of our strategy, with regular parents' evenings, INSPIRE sessions, and a dedicated MTC workshop to help families understand and support their child's learning. In the spring term, we launch our MTC Club, where Year 4 pupils can attend school from 8:15am for an extra 30 minutes of tailored Wave 2 and Wave 3 support. To ensure pupils are familiar with the test format, we use the Officially Unofficial MTC (OUMTC) via TTRS each term and provide regular access to the DfE's official MTC practice site. The Multiplication Tables Check takes place in May, and schools receive detailed guidance from the Department for Education on administering the test securely and effectively. The results help inform teaching, intervention planning and whole-school maths development.

Maths Policy

The teaching of calculation

A consistent and well-structured calculation policy is essential for securing in-depth mathematical understanding across all year groups. It ensures that the methods taught are progressive, coherent, and aligned with the curriculum, allowing pupils to build on prior knowledge without confusion. By following a shared approach, children are able to develop confidence and fluency in their calculations, as they encounter familiar strategies year after year. Our calculation policy is closely aligned with the White Rose scheme of learning, supporting both classroom teaching and arithmetic sessions. This consistency not only supports pupils' learning but also provides clarity for teachers, support staff and parents.

Marking and feedback

Feedback is a crucial part of ensuring progress for every child in mathematics. It involves the teacher reviewing pupils' written work to identify errors, misconceptions, and levels of conceptual and procedural fluency. Effective feedback allows teachers to respond in a timely and targeted way—whether through written comments, verbal guidance, or direct intervention.
In maths, feedback is most impactful when it is given 'in the moment' during the lesson, allowing misconceptions to be addressed immediately and learning to be redirected or reinforced as needed. Post-lesson feedback also plays a key role in informing future planning and support. As highlighted by the Education Endowment Foundation, "done well, feedback supports pupil progress, builds learning, addresses misunderstandings, and thereby closes the gap between where a pupil is and where the teacher wants them to be". By embedding regular, responsive feedback into daily practice, teachers can ensure that all pupils are supported in making meaningful and sustained progress.

✓	Correct answer in maths – green pen, but not highlighter.
.	Incorrect answer in maths
.✓	A corrected answer in maths that was initially incorrect – answer to be completed in purple pen

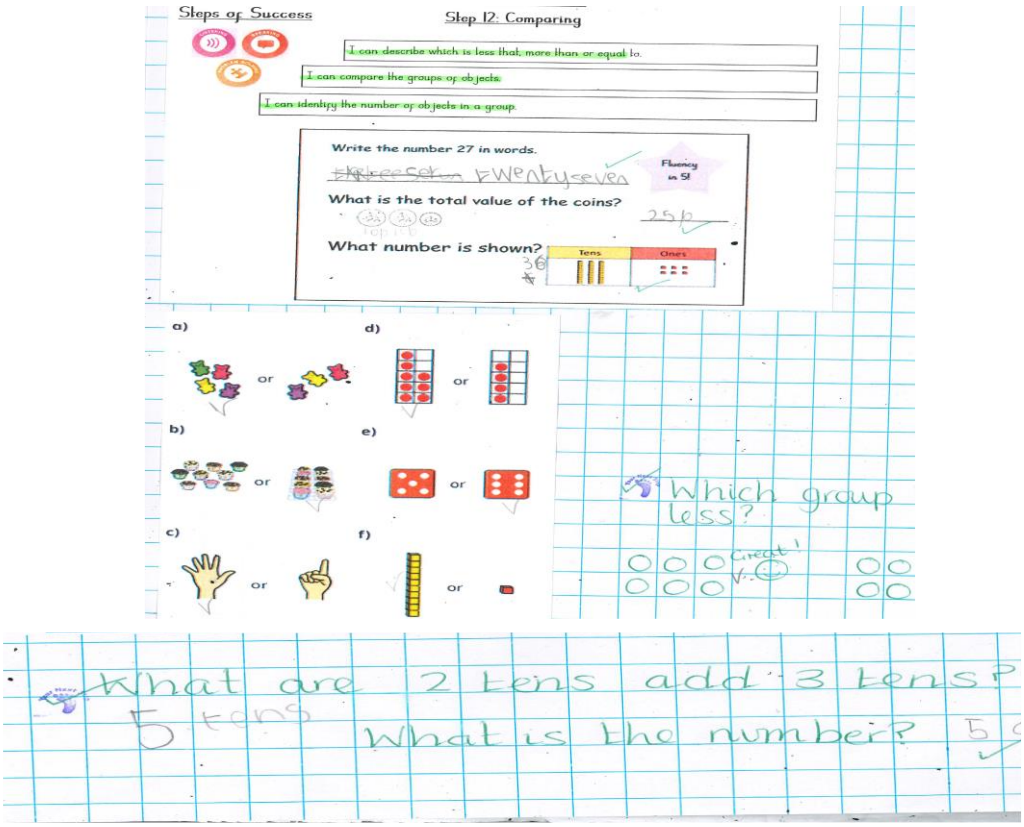
- For a slip or error, the mistakes are dotted in green pen or highlighted in pink. There is an expectation that the pupil makes a correction next to the error in purple pen. When a teacher responds to this corrected answer they will write a ✓ to indicate this answer has been corrected.
- For misconceptions the teacher may decide to take alternative courses of action. For instance, with a small number of pupils, the teacher may arrange in lesson intervention or provide support during an assembly or afternoon maths. For a larger number of pupils, the errors will be addressed as a whole class in the following lesson.
- Teachers may set a gap task linked to an error or misconception if it is purposeful to do so. Written modelling or scaffolding may be required to support the pupil to answer. This may be seen in the pupil's maths book.

In the moment feedback

As far as possible, feedback should be given during the lesson to allow for errors and misconceptions to be addressed quickly and before they become embedded. When an error has been identified, the child should self-correct if they are able, using their purple pen, to demonstrate that it was an error. Where a misconception has occurred, additional modelling and manipulatives will be needed to correct it.

Addressing common Errors

Common errors need to be addressed quickly and, where possible, in the moment. When books are reviewed at the end of each lesson, questions that have been a common error across the class need to be addressed. This will be done by preparing the Get Ready and Common Errors part of the following days lesson, to be re-modelled and then provide the children with an opportunity to attempt another question at the beginning of the days learning. Furthermore, this may be addressed as a class in an afternoon maths session. These misconceptions are addressed by the child either editing their work in purple pun or completing a 'next step' aligned to their misconception.



Homework

Homework should be set weekly and serve as a meaningful extension of classroom learning. It plays a vital role in both pre-teaching upcoming content and consolidating previously taught concepts, helping to reinforce understanding and build confidence. Carefully planned homework tasks allow children to revisit key skills, practise fluency, and prepare for new learning, ensuring a smoother transition between lessons. Regular homework also encourages independence, responsibility, and parental engagement in the learning process. To be most effective, homework should align with the methods and strategies used in class, supporting consistency and reducing confusion.

Across school, the following homework should be set.

Year group	Homework
1	Number bonds, counting, subitising – linked to Mastering number focus
2	Number bonds, counting, subitising – linked to Number Sense NUMBOTS
3	TTRS CENTURY nuggets Number Sense – a sheet generated from the website to focus on specific gaps
4	TTRS CENTURY nuggets

	Maths.co.uk quizzes
5	TTRS CENTURY nuggets Maths.co.uk quizzes
6	TTRS CENTURY nuggets Maths.co.uk quizzes SATs style questions

Assessment in Mathematics

Assessment is fundamental to the process of teaching and learning and plays a vital role in the academic development of pupils and the professional practice of teachers. It provides the evidence needed to make informed decisions about pupil progress, curriculum planning and instructional strategies. The way assessment is embedded within the classroom significantly influences the learning culture, shaping attitudes, behaviours and expectations. Effective assessment enables teachers to create the conditions in which all pupils can thrive.

Types of Assessment

Assessment can be broadly categorised into three interrelated forms:

- Assessment for Learning (AfL) – formative assessment
- Assessment as Learning – reflective and self-regulatory assessment
- Assessment of Learning – summative assessment

These approaches are not mutually exclusive and can be used in combination, both formally and informally, to gather evidence of pupil understanding and inform teaching decisions. Each type serves a distinct purpose but collectively contributes to a holistic view of pupil achievement.

Assessment for Learning (AfL)

Assessment for Learning, or formative assessment, is an ongoing process that takes place during teaching. It is used to identify what pupils understand, where misconceptions lie, and how teaching can be adapted to meet their needs. Dylan Wiliam, refers to this as *"responsive teaching"*—a pedagogy that is flexible and contingent on pupil responses. Teachers use strategies such as effective questioning, success criteria and immediate feedback to guide learning in real time. AfL is not just about teacher input; it also involves pupils in the assessment process through self- and peer-assessment. This empowers learners to take ownership of their progress and fosters a growth mindset. The goal is not simply to improve marks, but to improve learning itself.

Formative Assessment in Practice

Teachers integrate formative assessment through:

- Clear learning objectives and success criteria
- Targeted questioning and discussion
- Live marking and verbal feedback
- Use of mini-plenaries to check understanding
- Scaffolding and modelling based on pupil responses

This approach ensures that teaching is adaptive and inclusive, supporting all learners to make progress from their individual starting points.

Summative Assessment

Summative assessment provides a snapshot of pupil attainment at a specific point in time. It is used to evaluate learning at the end of a unit, term, or academic year. In EYFS, children are assessed against the Early Learning Goals through observations and teacher judgements, recorded on platforms such as

Tapestry. These assessments are used to inform planning and support transitions. Across the school, pupils complete termly assessments using White Rose Maths end-of-term and topic tests, Maths.co.uk assessments and other evidence such as times tables progress. In Year 6, pupils are assessed using past SATs papers, with scaled scores converted into point scores for tracking on BROMCOM.

Making Judgements and Tracking Progress

Assessment data is collated and analysed to inform teaching, identify gaps, and plan interventions. Teachers use a range of evidence—including formal assessments, classwork, observations and KPI sheets—to make accurate judgements about pupil attainment. These are recorded on the school's tracking system to monitor progress over time and ensure that all pupils are on track to meet their potential.

The Role of Feedback

Feedback is a critical component of both formative and summative assessment. It should be timely, specific and actionable, helping pupils understand what they have done well and what they need to improve. "Feedback should feed forward"—enabling pupils to perform better in future tasks. Effective feedback is not just about correcting errors, but about guiding thinking and encouraging reflection.

Assessment is not a standalone event, but an integral part of effective teaching and learning. When used well, it informs instruction, supports pupil progress and fosters a culture of high expectations and continuous improvement. By combining formative and summative approaches and embedding feedback into daily practice, teachers can ensure that assessment truly serves learning.

Assessment

At Hurst Hill we use maths assessment systems that align with the schemes they follow, ensuring that pupil progress is effectively tracked during lessons, across units, and throughout each term.

Programmes such as White Rose Maths embed continuous formative assessment through in-class questioning, discussions and varied tasks to identify misconceptions early, while end-of-unit summative assessments and diagnostic tools help evaluate pupil understanding and guide targeted support (White Rose Education, 2025). Alongside this, schools use Maths.co.uk to deliver termly standardised tests, which provide age-related outcomes, diagnostic feedback and standardised scores based on national data from over 800,000 pupils (Maths.co.uk, 2025). Teachers prepare pupils by familiarising them with test formats, ensuring technical readiness and creating a calm testing environment. Pupils use devices, login credentials and working-out materials to complete tests confidently. The outcomes support teacher judgements, pupil progress meetings, moderation and curriculum planning. Data is used to identify gaps, plan interventions and inform parents through reports and consultations. Schools also complete statutory mock tests in Years 2 and 6 to prepare pupils and analyse readiness for SATs, using past papers and national curriculum-aligned materials (Standards and Testing Agency, 2025).

For multiplication fluency, Times Tables Rock Stars (TTRS) is used across Key Stage 2, with Sound Checks scheduled regularly to assess recall of facts up to 12 × 12. Teachers use Sound Check data to identify confident and struggling learners, plan interventions, and track progress, while leaders use cohort-level data to monitor trends, evaluate teaching impact and inform strategic decisions (Thomson & Wright, 2024). For younger pupils, particularly in Year 2, Garage or Jamming modes are recommended to build fluency without time pressure until they are developmentally ready (Reddy, 2023). The Year 4 Multiplication Tables Check (MTC) is supported through daily practice, wave-based interventions, and parental engagement via workshops and INSPIRE sessions. The MTC Club, launched in spring, offers additional morning support, and pupils regularly access the DfE's official MTC practice site to familiarise

themselves with the test format (DfE, 2025). The MTC takes place in May and schools follow DfE guidance to administer the test securely and effectively, using the results to inform teaching and whole-school maths development.

WalkThrus

WalkThrus are a key element of our teaching practice, providing clear, step-by-step strategies that promote consistency and high-quality instruction across the school. Developed by Tom Sherrington and Oliver Caviglioli, WalkThrus distil over 150 evidence-informed teaching techniques into five-step visual guides, making complex pedagogical concepts accessible and actionable for all staff (Sherrington & Caviglioli, 2020). In maths lessons, they are used to support modelling, questioning, and scaffolding, ensuring that all staff apply effective techniques in a consistent way. This aligns with Rosenshine's Principles of Instruction, which underpin many WalkThru strategies such as presenting new material in small steps, checking for understanding, and providing models. By embedding WalkThrus into daily practice, we create a shared approach that enhances pupil understanding and supports professional development through focused, evidence-based routines.

Education Endowment Foundation

IMPROVING MATHEMATICS IN KEY STAGES 2 AND 3

Summary of recommendations

1 Use assessment to build upon pupils' existing knowledge and understanding

- Assessment should be used not only to track pupils' learning but also to provide teachers with information about what pupils do and do not know.
- This should inform the planning of future lessons and the focus of targeted support.
- Effective feedback will be an important element of teachers' response to assessment.
- Feedback should be specific and clear, encourage and support further effort, and be given sparingly.
- Teachers not only have to address misconceptions but also understand why pupils may persist with errors.
- Knowledge of common misconceptions can be invaluable in planning lessons to address errors before they arise.

2 Use manipulatives and representations

- Manipulatives (physical objects used to teach maths) and representations (such as number lines and graphs) can help pupils engage with mathematical ideas.
- However, manipulatives and representations are just tools: how they are used is essential.
- They need to be used purposefully and appropriately to have an impact.
- There must be a clear rationale for using a particular manipulative or representation to teach a specific mathematical concept.
- Manipulatives should be temporary; they should act as a 'scaffold' that can be removed once independence is achieved.

3 Teach strategies for solving problems

- If pupils lack a well-rehearsed and readily available method to solve a problem they need to draw on problem solving strategies to make sense of the unfamiliar situation.
- Select problem solving tasks for which pupils do not have ready-made solutions.
- Teach them to use and compare different approaches.
- Show them how to interrogate and use their existing knowledge to solve problems.
- Use worked examples to enable them to analyse the use of different strategies.
- Require pupils to monitor, reflect on, and communicate their problem solving.

4 Enable pupils to develop a rich network of mathematical knowledge

- Emphasise the many connections between mathematical facts, procedures, and concepts.
- Ensure that pupils develop fluent recall of facts.
- Teach pupils to understand procedures.
- Teach pupils to consciously choose between mathematical strategies.
- Build on pupils' informal understanding of sharing and proportionality to introduce procedures.
- Teach pupils that fractions and decimals extend the number system beyond whole numbers.
- Teach pupils to recognise and use mathematical structure.

5 Develop pupils' independence and motivation

- Encourage pupils to take responsibility for, and play an active role in, their own learning
- This requires pupils to develop metacognition—the ability to independently plan, monitor and evaluate their thinking and learning
- Initially, teachers may have to model metacognition by describing their own thinking.
- Provide regular opportunities for pupils to develop metacognition by encouraging them to explain their thinking to themselves and others.
- Avoid doing too much too early.
- Positive attitudes are important, but there is scant evidence on the most effective ways to foster them.
- School leaders should ensure that all staff, including non-teaching staff, encourage enjoyment in maths for all children.

6 Use tasks and resources to challenge and support pupils' mathematics

- Tasks and resources are just tools—they will not be effective if they are used inappropriately by the teacher.
- Use assessment of pupils' strengths and weaknesses to inform your choice of task.
- Use tasks to address pupil misconceptions.
- Provide examples and non-examples of concepts.
- Use stories and problems to help pupils understand mathematics.
- Use tasks to build conceptual knowledge in tandem with procedural knowledge.
- Technology is not a silver bullet—it has to be used judiciously and less costly resources may be just as effective.

7 Use structured interventions to provide additional support

- Selection should be guided by pupil assessment.
- Interventions should start early, be evidence-based and be carefully planned.
- Interventions should include explicit and systematic instruction.
- Even the best designed intervention will not work if implementation is poor.
- Support pupils to understand how interventions are connected to whole-class instruction.
- Interventions should motivate pupils—not bore them or cause them to be anxious.
- If interventions cause pupils to miss activities they enjoy, or content they need to learn, teachers should ask if the interventions are really necessary.
- Avoid 'intervention fatigue'. Interventions do not always need to be time-consuming or intensive to be effective.

8 Support pupils to make a successful transition between primary and secondary school

- There is a large dip in mathematical attainment and attitudes towards maths as children move from primary to secondary school.
- Primary and secondary schools should develop shared understandings of curriculum, teaching and learning.
- When pupils arrive in Year 7, quickly attain a good understanding of their strengths and weaknesses.
- Structured intervention support may be required for Year 7 pupils who are struggling to make progress.
- Carefully consider how pupils are allocated to maths classes.
- Setting is likely to lead to a widening of the attainment gap between disadvantaged pupils and their peers, because the former are more likely to be assigned to lower group.

Education Endowment Foundation

IMPROVING MATHEMATICS IN THE EARLY YEARS AND KEY STAGE 1

Summary of recommendations

1 Develop practitioners' understanding of how children learn mathematics

- Professional development should be used to raise the quality of practitioner' knowledge of mathematics, of children's mathematical development and of effective mathematical pedagogy.
- Developmental progressions show us how children typically learn mathematical concepts and can inform teaching.
- Practitioners should be aware that developing a secure grasp of early mathematical ideas takes time, and specific skills may emerge in different orders.
- The development of self-regulation and metacognitive skills are linked to successful learning in early mathematics.

2 Dedicate time for children to learn mathematics and integrate mathematics throughout the day

- Dedicate time to focus on mathematics each day.
- Explore mathematics through different contexts, including storybooks, puzzles, songs, rhymes, puppet play, and games.
- Make the most of moments throughout the day to highlight and use mathematics, for example, in daily routines, play activities, and other curriculum areas.
- Seize chances to reinforce mathematical vocabulary.
- Create opportunities for extended discussion of mathematical ideas with children.

3 Use manipulatives and representations to develop understanding

- Manipulatives and representations can be powerful tools for supporting young children to engage with mathematical ideas.
- Ensure that children understand the links between the manipulatives and the mathematical ideas they represent.
- Ensure that there is a clear rationale for using a particular manipulative or representation to teach a specific mathematical concept.
- Encourage children to represent problems in their own way, for example with drawings and marks.
- Use manipulatives and representations to encourage discussion about mathematics.
- Encourage children to use their fingers—an important manipulative for children.

4 Ensure that teaching builds on what children already know

- It is important to assess what children do, and do not, know in order to extend learning for all children.
- A variety of methods should be used to assess children's mathematical understanding, and practitioners should check what children know in a variety of contexts
- Carefully listen to children's responses and consider the right questions to ask to reveal understanding.
- Information collected should be used to inform next steps for teaching. Developmental progressions can be useful in informing decisions around what a child should learn next.

5 Use high quality targeted support to help all children learn mathematics

- High quality targeted support can provide effective extra support for children.
- Small-group support is more likely to be effective when:
- children with the greatest needs are supported by the most experienced staff;
- training, support and resources are provided for staff using targeted activities;
- sessions are brief and regular; and
- explicit connections are made between targeted support and everyday activities or teaching.
- Using an approach or programme that is evidence-based and has been independently evaluated is a good starting point.