Maths Strategy

Blackhorse Primary School Edition 2025

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Contents

Our Maths Pedagogy

Introduction

This Maths Handbook aims to explain our approach to the teaching of mathematics at Blackhorse Primary School, highlighting the rationale behind our decisions and how they align with our pedagogical philosophy thus ensuring that the mathematical development of our children continues throughout their time with us.

Our curriculum design includes carefully planned opportunities to develop secure number recall and automaticity. We recognise the importance of retaining facts and employing precise mathematical vocabulary; these skills form the bedrock of a sound mathematical education. Each lesson is constructed to ensure that children can apply their knowledge in various contexts, empowering them to make connections between different mathematical principles and solve multi-step reasoning questions.

Our lesson design is firmly rooted in evidence-based practices, ensuring that our curriculum is informed by robust research findings. We prioritise consistency across the school, as uniformity in approach not only supports effective teaching but also aids in building confidence among our pupils. By maintaining clear and high expectations, we challenge our students to strive for excellence, creating an environment where achievement is celebrated and recognised.

Familiarity is a cornerstone of our lesson structure. We recognise the cognitive demands placed upon our children, hence our curriculum employs a familiar structure and format, designed to reduce cognitive load. This facilitates a greater ease of understanding, enabling our pupils to concentrate on the mathematical concepts being taught. This approach is intentional; we aim to develop confidence through structured learning experiences that encourage active participation. We believe that all students should engage fully in lessons, contributing their ideas and insights, which reinforces their learning.

A significant facet of our maths curriculum is the emphasis on developing a comprehensive understanding of core concepts, which includes strategies, facts, and principles. We firmly believe in the necessity for children to master the basics before advancing to more complex ideas. This systematic approach ensures that pupils possess a solid grasp of essential mathematical knowledge, enabling them to apply their skills effectively and confidently. We deliberately plan in opportunities to teach vocabulary, revisit number facts and rehearse arithmetic strategies to ensure the children's understanding and application become more automatic.

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Moreover, we advocate for dialogue around mathematical thinking. Allowing children to articulate their reasoning serves not only as a demonstration of their understanding but also acts as a critical tool for consolidating their knowledge. Through this discourse, pupils are encouraged to explore and investigate mathematical problems, enhancing their ability to reason and problem-solve. Our toolkit provides a scaffolded structure by which children can navigate mathematical problems.

Furthermore, our commitment extends to meeting the diverse needs of our children. We incorporate deliberate opportunities within our sequences of lessons for children to engage with their prior learning; build on and revisit known facts or strategies and consolidate learning on new concepts. Some children may follow a bespoke curriculum, outside of their year group, designed with their specific needs at the forefront therefore ensuring that every child, regardless of their starting point, has the chance to thrive. This approach ensures inclusivity, allowing all learners to excel within our maths programme.

Our Maths Handbook is designed to communicate our philosophy and methodologies in teaching mathematics. By adhering to evidence-based practices, maintaining high expectations, and fostering a supportive learning environment, we aim to cultivate a generation of confident mathematicians who possess not only the requisite skills but also a genuine enthusiasm for the subject.

Outcomes to date

We know that our mathematics strategy at Blackhorse Primary School is having a sustained and positive impact on pupil outcomes. Since implementation, our **average scaled score** has increased from **104 to 108.75**, demonstrating clear improvement in pupils' overall attainment. This progress is mirrored across both key components of mathematics: **reasoning scores have risen from 46 to 50.2**, and **arithmetic scores have improved from 33 to 34.7**. These outcomes reflect the success of our consistent, research-informed approach, which emphasises purposeful practice, teacher modelling, and the development of factual fluency before reasoning and problem-solving. Lesson visits, pupil voice, and internal assessments all indicate that pupils are becoming more confident, fluent, and independent mathematicians who can articulate their thinking clearly. Teachers report greater consistency in lesson design, stronger use of precise mathematical language, and improved pupil engagement with challenge. The upward trend in attainment data, combined with qualitative evidence from classroom practice, confirms that our sequenced, systematic approach to mathematics teaching is both effective and sustainable in securing strong progress for all pupils, including disadvantaged learners and those with SEND. Since implementation, the number of children, **with SEND**, achieving the expected standard in Maths has **over doubled from 25% to 57%** (national average 40%) and the number of **pupil premium** children achieving the standard has gone **from 57% to 70%** (national average 61%)**.**

The Intent of Our Math Curriculum

Mathematics is imperative for everyday life. At Blackhorse Primary School, our Mathematics curriculum embodies our mission of creating champion learners by nurturing children to be fluent with key concepts, equipping them for future challenges. Ultimately, we focus on providing children with the foundation and building blocks in order to achieve during their next steps in education.

We embrace **purposeful practice and personal effort** by identifying the essential knowledge students require for success and construct our lessons around this fundamental understanding. Our lesson structure is meticulously designed to activate prior knowledge, followed by **expert tuition** during modelling and explicit teaching of concepts before scaffolding practice and facilitating independent opportunities.

We are committed to pursuing excellence through high expectations for all learners in terms of engagement and attainment. Engagement is fostered through our active participation protocols, while achievement is closely monitored via frequent marking and feedback opportunities. We aim for our children to develop a solid grasp of fundamental arithmetic strategies, number facts, and mathematical vocabulary through a structured approach.

We encourage children to apply their knowledge in diverse contexts and make connections among various mathematical concepts. Our learners are challenged to be resilient and reflective, engaging in high-quality maths talks, which are anchored by appropriate mathematical vocabulary. This process allows them to extend their higher-order thinking skills by reasoning with their acquired knowledge and articulating explanations that support their understanding.

Furthermore, we provide our children with **extensive opportunities** to **purposefully practice** their learning, taking advantage of national competitions, parent helpers, online application and early morning groups.

The Rational Behind Our Approach to Teaching Maths

At Blackhorse Primary, our rationale for the lesson structure within mathematics is rooted in the principles of cognitive science and supported by high-quality research evidence. We recognise that effective learning is not a product of exposure alone, but of carefully designed instruction that supports pupils to move new knowledge into long-term memory.

The Education Endowment Foundation (EEF) highlights the importance of explicit instruction, deliberate practice, and scaffolding as key features of effective teaching. Purposeful practice goes beyond rote repetition; it provides pupils with structured opportunities to apply new knowledge in meaningful contexts. Research into retrieval practice (EEF, 2021) demonstrates that regular revisiting of key ideas strengthens memory, reduces forgetting, and allows pupils to build secure conceptual understanding. At Blackhorse, this underpins our commitment to revisiting prior learning at the start of each lesson and embedding fluency tasks throughout.

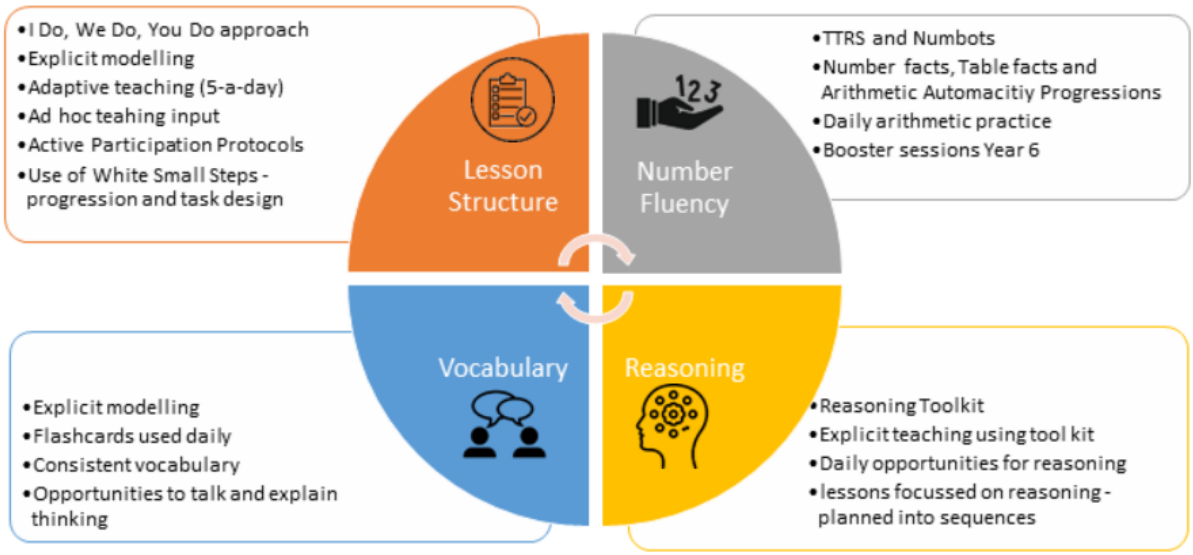
Repetition is used not as passive drill, but as spaced and varied practice. Findings from cognitive load theory (Rosenshine, 2012) show that pupils require repeated, well-sequenced encounters with new material to develop automaticity and free working memory for more complex reasoning. By carefully interleaving and revisiting core knowledge, we ensure that pupils, including disadvantaged learners and those with SEND, secure fluency and can access more demanding reasoning tasks with confidence.

Teacher modelling is central to our approach. The EEF's *Improving Mathematics in Key Stages 2 and 3* guidance stresses the importance of

teachers acting as expert models, making their thinking visible and breaking complex processes into smaller, manageable steps. Through explicit instruction, worked examples, and the use of precise mathematical language, teachers reduce ambiguity and provide clear exemplars of high-quality reasoning. This aligns closely with Rosenshine's *Principles of Instruction*, which emphasise guided practice and gradual release of responsibility as evidence-informed strategies that maximise pupil success.

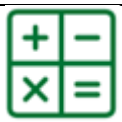
By combining purposeful practice, structured repetition, and expert modelling, Blackhorse ensures that pupils do more than "complete tasks": they develop secure fluency, deep conceptual understanding, and the ability to apply knowledge flexibly in novel situations. This research-informed rationale underpins our lesson design and ensures that mathematics teaching is systematic, ambitious, and inclusive for all pupils.

The Simple View of Maths



Lesson structure and design

The structure of teaching Mathematics at Blackhorse Primary School

	Arithmetic practice and vocabulary practice – completed outside of the maths lesson
	Planning prior to the lesson – depends on step in sequence, based on marking & assessments/ information about the children, manipulatives, misconceptions
	Mathematical fluency – recall of number/multiplication facts Arithmetic practice
	Connecting with prior learning
	Vocabulary – explained, modelled and used
	I Do – explicit teaching and modelling, why am I choosing this representation/ calculation etc. Key learning is taught.
	We Do – scaffolded modelling, Maths talk. Teachers are beginning their assessments – which groups do children need to be in? Active participation strategies.
	You Do – independent practice, initially with partner, then in Maths books, assessment opportunities, why this question and why in this order?

	Adaptive practice may be needed within this session to inform the next stage of lesson.
	Check in and marking, may result in ad-hoc teaching, moving children on. Further groups may be created.
	Reasoning – using the reasoning toolkits
	Assessment and review – information gained through lesson and marking used to inform next step/ lesson groupings.

EYFS

In the Early Years Foundation Stage (EYFS), the structure of mathematics teaching aligns closely with the core principles used from Year 1 to Year 6, while being thoughtfully adapted to meet the developmental needs of our youngest learners.

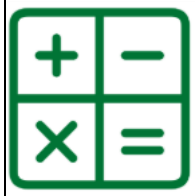
Lessons follow a consistent and predictable routine to promote confidence and security, but activities are designed to be practical, engaging, and language-rich, supporting early conceptual understanding. During a typical maths session, children are introduced to a maths mat focused on a specific mathematical concept. The teacher begins by modelling the learning intention ("I do") and leading a guided discussion ("We do") to explore key ideas and vocabulary together. Throughout this process, the teacher continually checks children's understanding ("We do" and "You do") through questioning, observation, and shared responses. Once pupils demonstrate a secure grasp of the concept, they move into independent learning ("You do"), which may take place immediately or be embedded across the day or week. This flexible structure allows learning to be revisited and reinforced in meaningful contexts.

The mathematical concept of the week, such as patterns, which is explored through the Maths Mat, will then also be found throughout the indoor and

outdoor provision for the children to explore through their play. After the session, as most mathematical concepts are new in EYFS, the Maths Mat is left out within the provision for children to continue to explore.

If a child shows misunderstanding or requires further support, an adult provides targeted, explicit modelling to consolidate understanding before they return to independent practice. This approach ensures that all children develop strong mathematical foundations through modelling, purposeful practice, and responsive teaching, fully aligned with the school's overarching maths principles.

KS1 and KS2

Part of Lesson	Teacher	Children
Arithmetic Warm Up:  Active Participation Protocols Used	In KS2, as the children come into the classroom in the morning, provide children with 4-5 Maths arithmetic questions for them to practice.	• Children to answer question on whiteboard – showing calculation where necessary. • Show answers and ensure they are acknowledged in some way.
Get Ready  Active Participation Protocols used	• **1st** Show question based on previous day's learning (no active teaching). • **3rd** Teacher checks answers and assesses which children have understood previous day. Are the whole class ready to move on? Which children/ groups may need extra support today?	• **2nd** Children complete problem on whiteboards independently (not with partner).

I Do: Modelling **(3 mins)**  Use of whiteboard to model Vocabulary will be duel coded and on maths learning boards.	Teacher models clearly ('thinking aloud') to articulate their thought process) every single step to success. Model how to use specific manipulatives/practical task, explaining the Maths at each stage. Explain why you are doing each part and what the manipulatives are showing. The Teacher will: • Explain any relevant mathematical **vocabulary** using agreed strategies • Read the problem • Establish the **prior knowledge** • Explain **thinking process** (think aloud) – how, what and why • "I can make this like… I know this because.." • Use precise mathematical **vocabulary** • **Model** how to answer the question • Layout the calculation/manipulatives • Complete the calculation/ problem • Check the answer is reasonable and answers the question asked.	Watch and follow **DON'T ASK THE CHILDREN THESE QUESTIONS – MODEL THIS ENTIRELY AS THE EXPERT TEACHER.**

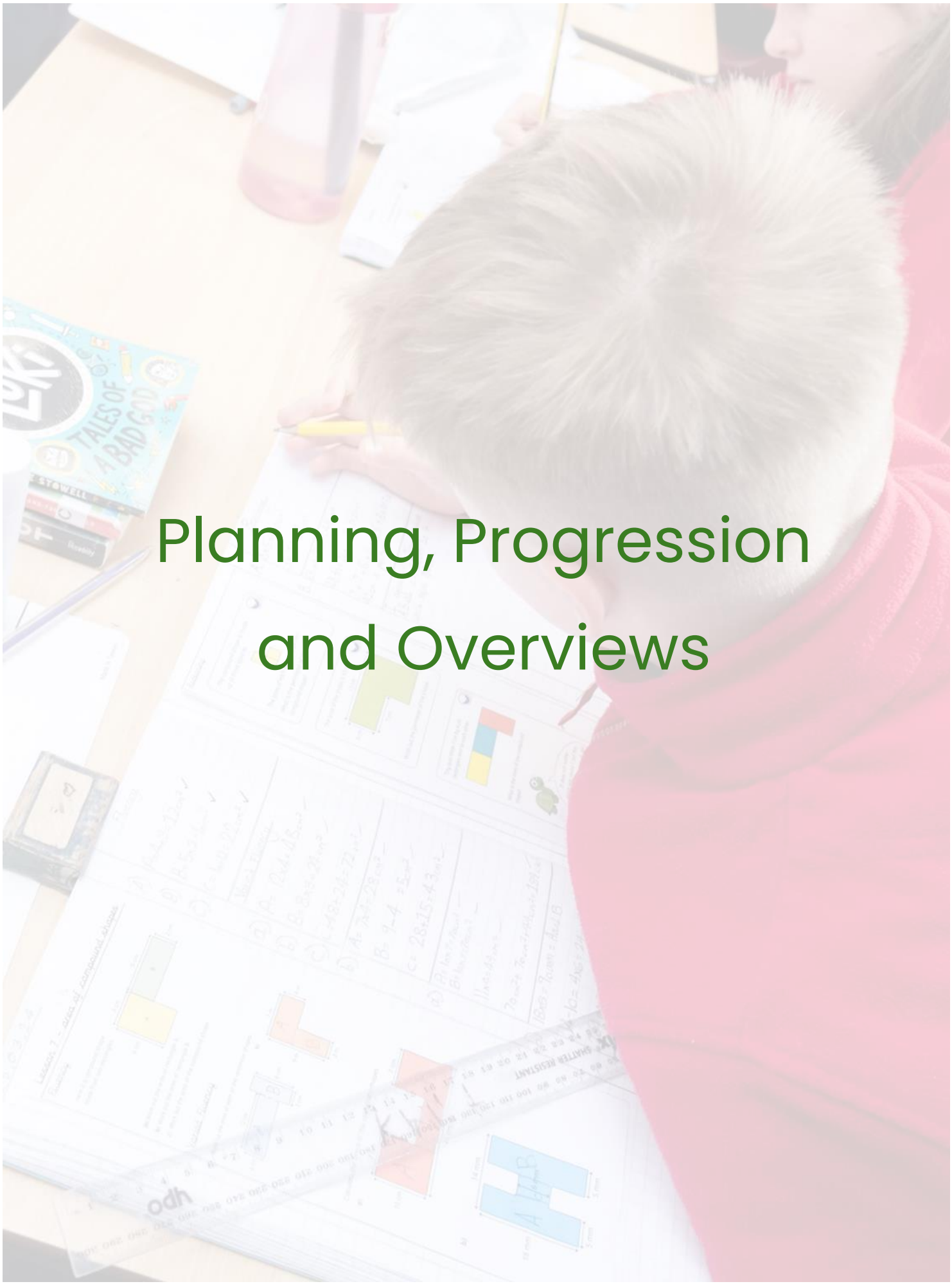
We Do: Scaffolding (5 mins)  Active Participation Protocols Used Identified on flipchart with agreed symbol	1. Teacher sets problem for children and scaffolds the first part 2. 'What is the problem asking me to do? 3. First we are going to…/first we need to…' 4. Circulate to ensure children know what to do.	• Children to work in pairs to solve first part of the problem. Explain the partner what they are going to do first and why using **mathematical vocabulary** • Reveal answer
	1. Teacher to cold call on pairs/children to explain what they did 2. 'How did you get that answer? Why did you do that?'	• Children to explain thinking to class using **mathematical vocabulary** • Rest of children to listen to agree/disagree, identify errors/ways to improve explanation
	1. Teacher scaffolds the second part of the problem (if necessary) 2. 'Now/next we need to..'	• Children to work in pairs to solve first part of the problem. Explain what they are going to do first and why using **mathematical vocabulary**. • Reveal answer

You Do: Show Me (5-8 mins)  Active Participation Protocols Used Identified on flipchart with agreed symbol	Set 3rd different question with same process. **No direct teaching.** Circulates to identify those who need further input Employs AfL techniques ***Teacher identifies which children will need more guided support. These children may need further teaching input from the teacher; need to be retaught earlier step or specific misconception identified and addressed***	Work to solve a problem Engage in Maths talk using precise **mathematical vocabulary** as modelled during I Do.

Independent 	1. Teacher creates group to focus on who could not complete the 'You do' (not always bottom 20%). 2. Repeat 'we do' with this group (question from work book) 3. Leave the children to try next question alone. 4. Circulate and see how rest of class are coping with the new learning. Set work-rate expectation for rest of class 'I want x answers in y minutes'.	Working independently
Stop and Mark Part of Independent session	1. Stop children and show answers to first 3-5 on the board. 2. Remove answer and ask them to correct.	• Children mark completed work. • Children correct in purple pen

Ad-hoc Input (if needed) 	**If a lot of children are making common errors:** Re-teach to all children who need it e.g. 'If you got those questions right, keep working, otherwise look at me' **If 1-2 children are making an error:** Add them to the teacher group. **When pupils are moving on to reasoning questions, stop them and model the strategy.**	Listen to input, ask and answer questions.

Shared Reasoning question – we do 	1. When modelling reasoning, stop all children. 2. Show reasoning question – some parts of the questions may be hidden. 3. Use reasoning toolkit to support and scaffold response to question	• Children explain how they would solve this problem using precise **mathematical vocabulary** in their explanations. • Mid/ Low prior attainers attempt problem in pairs with scaffolding from teacher.
After the lesson	Mark the work Assess whether the children are ready to move on with the next small step or if further consolidation is needed.	



Planning, Progression and Overviews

Structure & Cohesion

At Blackhorse Primary, our mathematics curriculum is structured around the White Rose Maths scheme, a nationally recognised and research-informed framework. This structure provides clear sequencing and progression, ensuring that learning flows coherently from one year group to the next. The White Rose approach allows pupils to revisit key concepts through carefully planned small steps, enabling them to build secure understanding over time. For teachers, it provides confidence that all National Curriculum objectives are thoroughly covered, while still allowing flexibility for adaptive teaching and enrichment where appropriate. By following this consistent, high-quality structure, we ensure that the curriculum is both comprehensive and cohesive, supporting every pupil to make strong progress from their individual starting points.

In the pages that follow, examples from several year groups illustrate the mathematical content taught throughout the autumn term. These overviews serve as a curriculum guide to support consistency and clarity across the teaching team. However, they are not rigid timetables; teachers are encouraged to exercise their professional judgement to adjust the pacing of learning as needed. If a concept requires more or less time for pupils to achieve secure understanding, teachers adapt accordingly, ensuring that depth of learning is prioritised over coverage. This approach reflects our belief that responsive and adaptive teaching is essential to meeting the needs of all learners while maintaining the coherence and ambition of our mathematics curriculum.

After this, there is the whole curriculum split by area and year group to demonstrate how knowledge progresses as children move up through the school.

Autumn Term				
		Just Like Me	**It's me 1,2,3**	**Light and Dark**
		Week 5 – 8	**Week 9 - 11**	**Week 12 - 14**
EYFS		• Sorting objects • Matching objects • Odd ones out • Similarities and differences between objects • Comparing amounts (up to 5) • Compare size, mass and capacity • Compare height and length • Balances scales and weighing • Making simple, repeating patterns	• Representing numbers to 3 • Sorting objects to 3 • Matching and comparing 1-3 • 1 more and 1 less up to 3 • Composition of 1-3 • Naming and sorting 2d shapes (circles and triangles) • Positional language	• Representing numbers 4 and 5 • Sorting objects to 5 • Matching and comparing 1-5 • 1 more and 1 less up to 5 • Composition of 4 and 5 • Naming and sorting 2d shapes (squares and rectangles) • Positional language

	Place Value (within 10)	Addition and Subtraction	Geometry – Shape
	Week 1-5	**Week 6-10**	**Week 11**
Year 1	• Sort objects. • Count objects. • Represent objects. • Count, read and write forwards from any number 0 to 10. • Count, read and writing backwards from any number 0 to 10. • Count one more. • Count one less. • One to one correspondence to start to compare groups. • Compare groups using language such as equal, more/greater, less/fewer. • Introduce = , > and < symbols. • Compare numbers. • Order groups of objects. • Order numbers. • Ordinal numbers (1st, 2nd, 3rd ….). • The number line.	• Part whole model. • Addition symbol.. • Fact families – Addition facts. • Find number bonds for numbers within 10. • Systematic methods for number bonds within 10. • Number bonds to 10. • Compare number bonds. • Addition: Adding together. • Addition: Adding more. • Finding a part. • Subtraction: Taking away, how many left? Crossing out. • Subtraction: Taking away, how many left? Introducing the subtraction symbol. • Subtraction: Finding a part, breaking apart. • Fact families – The 8 facts. • Subtraction: Counting back. • Subtraction: Finding the difference. • Comparing addition and subtraction statements a + b > c. • Comparing addition and subtraction statements a + b > c + d.	• Recognise and name 3D shapes. • Sort 3D shapes. • Recognise and name 2D shapes. • Sort 2D shapes. • Patterns with 3D and 2D shapes.

	Place Value	Addition and Subtraction	Multiplication and division
	Week 1-3	**Week 4-8**	**Week 9 - 12**
Year 3	• Hundreds. • Represent numbers to 1,000. • 100s, 10s and 1s (1). • 100s, 10s and 1s (2). • Number line to 1,000. • Find 1, 10, 100 more or less than a given number. • Compare objects to 1,000. Compare numbers to 1,000. • Order numbers. • Count in 50s.	• Add and subtract multiples of 100. • Add and subtract 3-digit numbers and ones – not crossing 10. • Add 3-digit and 1-digit numbers – crossing 10. • Subtract a 1-digit number from a 3-digit number – crossing 10. • Add and subtract 3-digit numbers and tens – not crossing 100. • Add a 3-digit number and tens – crossing 100. • Add and subtract 100s. • Spot the pattern – making it explicit. • Add and subtract a 2-digit and 3-digit number – not crossing 10 or 100. • Add a 2-digit and 3-digit number – crossing 10 or 100. • Subtract 2-digit number from a 3-digit number cross the 10 or 100. • Add two 3-digit numbers – not crossing 10 or 100. • Add two 3-digit numbers – crossing 10 or 100. • Subtract a 3 –digit number from a 3-digit number – no exchange. • Subtract a 3-digit number from a 3-digit number – exchange. • Exchange answers to calculations	• Multiplication – equal groups. • Multiplying by 3. • Dividing by 3. • The 3 times-table. • Multiplying by 4. • Dividing by 4. • The 4 times-table. • Multiplying by 8. • Dividing by 8. • The 8 times-table.

	Place Value	Four operations	Fractions A	Fractions B	Measurement
	Week 1-2	**Week 3-7**	**Week 8– 11**	**Week 10 - 11**	**Week 12**
Year 6	• Numbers to ten million. • Compare an order any number. • Round any numbers. • Negative numbers.	• Add and subtract whole numbers. • Multiply up to 4-digit by 1-digit number. • Short division. • Division using factors. • Long division (1 – 4) • Common factors. • Common multiples. • Primes. • Squares and cubes. • Order of operations. • Mental calculations and estimation. • Reasoning from known facts.	• Simplify fractions. • Fractions on a number line. • Compare & order (denominator). • Compare & order (numerator). • Add & subtract fractions (1 – 2) • Mixed addition and subtraction. • Multiply fractions by integers. • Multiply fractions by fractions. • Divide fractions by integers (1 – 2) • Four rules with fractions. • Fraction of an amount. • Finding the whole.	• Multiply fractions by integers • Multiply fractions by fractions • Divide a fraction by an integer • Mixed questions with fractions • Fraction of an amount • Fraction of an amount – find the whole	• Metric measures • Convert metric measures • Calculate with metric measures • Miles and kilometres • Imperial measures

Highlighted objectives are the key outcome(s) for the unit.

Counting and place value		
Reception	**Year 1**	**Year 2**
• Representing numbers to 10 • Sorting objects to 10 • Matching and comparing 1-10 • 1 more and 1 less up to 10 • Composition of 1-10 • Subitise to 5. • Count to 20 • Recognising number patterns to 20 • Matching quantity and numeral • Recognise numbers to 20 • Order numbers to 20 • Estimation within 20	• Sort objects. • Count objects. • Represent objects. • Count, read and write forwards from any number 0 to 20. • Count, read and writing backwards from any number 0 to 20. • Count one more. • Count one less. • One to one correspondence to start to compare groups. • Compare groups using language such as equal, more/greater, less/fewer. • Introduce = , > and < symbols. • Compare numbers. • Ordinal numbers (1st, 2nd, 3rd ….). • Understand tens and ones. • Numbers to 50. • Represent numbers to 50. • Counting to 100. • Partitioning numbers.	• Count objects to 100 and read and write numbers in numerals and words. • Represent numbers to 100. • Tens and ones with a part whole model. . • Use a place value chart for numbers to 100. • Compare objects to 100. • Compare numbers to 100. • Order objects and numbers to 100.

Counting and place value			
Year 3	**Year 4**	**Year 5**	**Year 6**
• Understanding hundreds. • Represent numbers to 1,000. • 100s, 10s and 1s (1). • Number line to 1,000. • Find 1, 10, 100, more or less than a given number. • Compare objects to 1,000. Compare numbers to 1,000. • Order numbers to 1000. • Count in 50s.	• Roman numerals to 100. • Round to the nearest 10. • Round to the nearest 100. • Count in 1,000s. • 1,000s, 100s, 10s and 1s more and less. • Partitioning 1000's. • Number line to 10,000. • 1,000 more or less. • Compare numbers to 10,000. • Order numbers to 10,000. • Round to the nearest 1,000. • Count in 25s. • Negative numbers.	• Number to 10,000. • Roman numerals to 1,000. • Round to the nearest 10, 100 and 1000. • Number to 100,000. • Compare and order numbers to 100,000. • Round numbers within 100,000. • Numbers to a million. • Counting in 10s, 100s, 1,000s, 10,000s and 100,000s. • Compare and order numbers to a million. • Round numbers to a million. • Negative numbers.	• Numbers to ten million. • Compare an order any number. • Round any numbers. • Negative numbers.

Addition and Subtraction		
Reception	**Year 1**	**Year 2**
• 1 more and 1 less up to 10 • Adding (how many altogether) • How many are hiding? (subtraction) • Adding to 10 and combining two groups • Subtraction within 20 • Adding within 20	• Number bonds to 10. • Compare number bonds. • Part whole model. • Addition and subtraction symbol. • Fact families – Addition facts. • Addition: Adding together. • Addition: Adding more. • Finding a part. • Subtraction: Taking away, how many left? Crossing out. • Subtraction: Counting back. • Subtraction: Finding the difference. • Comparing addition and subtraction • statements a + b > c. • Comparing addition and subtraction statements a + b > c + d. • Add by counting on. • Subtraction – Not crossing 10. • Subtraction – Crossing 10	• Fact families – Addition and subtraction bonds to 20. • Bonds to 100 (tens) • Check calculations. • Compare number sentences. • Related facts. • Add and subtract 1s. • 10 more and 10 less. • Add and subtract 10s. • Add a 2-digit and 1-digit number – crossing ten. • Subtract a 1-digit number from a 2-digit number – crossing 10. • Add two 2-digit numbers – not crossing ten – add ones and add tens. • Add two 2-digit numbers – crossing ten – add ones and add tens. • Subtract a 2-digit number from a 2-digit number – not crossing ten. • Subtract a 2-digit number from a 2-digit number – crossing ten – subtract ones and tens. • Bonds to 100 (tens and ones). • Add three 1-digit numbers.

Addition and Subtraction			
Year 3	**Year 4**	**Year 5**	**Year 6**
• Formal method of addition and subtraction • Add and subtract multiples of 100. • Add and subtract 3-digit numbers and ones – not crossing 10. • Add 3-digit and 1-digit numbers – crossing 10. • Subtract a 1-digit number from a 3-digit number – crossing 10. • Add and subtract 3-digit numbers and tens – not crossing 100. • Add a 3-digit number and tens – crossing 100. • Add and subtract a 2-digit and 3-digit number – not crossing 10 or 100. • Add a 2-digit and 3-digit number – crossing 10 or 100. • Subtract 2-digit number from a 3-digit number cross the 10 or 100. • Add two 3-digit numbers – not crossing 10 or 100. • Add two 3-digit numbers – crossing 10 or 100. • Subtract a 3 –digit number from a 3-digit number – no exchange. • Subtract a 3-digit number from a 3-digit number – exchange. • Exchange answers to calculations	• Add and subtract 1s, 10s, 100s and 1000s. • Add two 4-digit numbers – no exchange. • Add two 4-digit numbers – one exchange. • Add two 4-digit numbers – more than one exchange. • Subtract two 4-digit numbers – no exchange. • Subtract two 4-digit numbers – one exchange. • Subtract two 4-digit numbers – more than one exchange. • Efficient subtraction. • Estimate answers. • Checking strategies.	• Add whole numbers with more than 4- digits (column method). • Subtract whole numbers with more than 4-digits (column method). • Round to estimate and approximate. • Inverse operations (addition and subtraction). Multi-step addition and subtraction problems	• Add and subtract whole numbers. • Add and subtract decimal numbers to 2dp. • BODMAS

Multiplication and division		
Reception	**Year 1**	**Year 2**
• Doubling • Sharing fairly • Equal and unequal groups	• Count in 10s • Count in 2s. • Count in 5s. • Make equal groups. • Add equal groups. • Make arrays. • Make doubles to 10. • Make equal groups – grouping. • Make equal groups – sharing.	• Make equal groups – sharing. • Make equal groups – grouping. • Multiply/Divide by 2. • Multiply/Divide by 5. • Multiply/Divide by 10. • Understand odd and even numbers. • Count in 2s, 5s and 10s. • Recognise equal groups. • Make equal groups. • Add equal groups. • Multiplication sentences using the x symbol. • Multiplication sentences from pictures. • Use arrays.

Multiplication and division			
Year 3	**Year 4**	**Year 5**	**Year 6**
• Multiplication – equal groups. • Multiplying by 3. • Multiplying by 4. • Multiplying by 8. • Dividing by 3. • Dividing by 4. • Dividing by 8. • Related calculations of 3,4 and 8. • Multiply 2-digits by 1-digit. • Divide 2-digits by 1-digit. • Scaling.	• Multiply by 10. • Multiply by 100. • Divide by 10. • Divide by 100. • Multiply by 1 and 0. • Divide by 1. • Multiply and divide by 6. • Multiply and divide by 9. • Multiply and divide by 7.	• Multiplying decimals by 10, 100 and 1000. • Dividing decimals by 10, 100 and 1,000. • Multiples. • Factors. • Common factors. • Prime numbers. • Square numbers. • Cube numbers • Multiply 4-digits by 1-digit. • Multiply 2-digits by 2-digits. • Multiply 3-digits by 2-digits. • Multiply 4-digits by 2-digits. • Divide 4-digits by 1-digit. • Divide with remainders.	• Multiply up to 4-digit by 2-digit number. • Short division. • Division using factors. • Long division (1 – 4) • Common factors. • Common multiples. • Primes. • Squares and cubes. • Order of operations. • Mental calculations and estimation. Reasoning from known facts.

Fraction s		
Reception	**Year 1**	**Year 2**
	• Halving shapes or objects. • Halving a quantity. • Find a quarter of a shape or object. • Find a quarter of a quantity.	• Make equal parts. • Recognise half. • Recognise quarter. • Recognise a third. • Unit fractions • Non-unit fractions. • Equivalence of ½ and $^{2}/_{4}$. • Find three quarters. • Count in fractions.

Fractions			
Year 3	**Year 4**	**Year 5**	**Year 6**
• Unit and non-unit fractions. • Making the whole. • Tenths. • Tenths as decimals. • Fractions of a number line. • Fractions of a set of objects.	• Equivalent fractions • Fractions greater than 1 • Count in fractions. • Add 2 or more fractions. • Subtract 2 fractions. • Subtract from whole amounts. • Calculate fractions of a quantity. • Compare fractions. • Order fractions. • Fraction of an amount.	• Equivalent fractions. • Improper fractions to mixed numbers. • Mixed numbers to improper fractions. • Number sequences. • Compare and order fractions less than 1. • Compare and order fractions greater than 1. • Add and subtract fractions. • Add 3 or more fractions. • Add mixed numbers. • Subtract mixed numbers. • Subtract – breaking the whole. • Subtract 2 mixed numbers. • Fraction of an amount. • Multiply unit fractions by an integer. • Multiply non-unit fractions by an integer. • Multiply mixed numbers by integers. • Using fractions as operators.	• Simplify fractions. • Fractions on a number line. • Compare & order (denominator) • Mixed addition and subtraction. • Multiply fractions by integers. • Multiply fractions by fractions. • Divide fractions by integers (1 – 2) • Four rules with fractions. • Finding the whole. • Fractions to percentages. • Equivalent FDP.

Decimal and percentages			
Year 3	**Year 4**	**Year 5**	**Year 6**
	• Recognise tenths and hundredths. • Tenths as decimals. • Tenths on a place value grid. • Tenths on a number line. • Hundredths. • Hundredths as decimals. • Hundredths on a place value grid. • Make a whole. • Compare decimals. • Order decimals. • Round decimals.	• Decimals up to 2 d.p. • Decimals as fractions (1). • Understand thousandths. • Thousandths as decimals. • Rounding decimals. • Understand percentages. • Percentages as fractions and decimals. • Equivalent F.D.P. • Adding decimals within 1. • Subtracting decimals within 1. . • Adding decimals – crossing the whole. • Adding decimals with the same number of decimal places. • Subtracting decimals with the same number of decimal places. • Adding decimals with a different number of decimal places. • Subtracting decimals with a different number of decimal places . • Adding and subtracting whole and decimals. • Decimal sequences.	• Three decimal places. • Multiply by 10, 100 and 1,000. • Divide by 10, 100 and 1,000. • Multiply decimals by integers. • Divide decimals by integers. • Division to solve problems. • Decimals as fractions. • Percentage of an amount (1). • Percentage of an amount (2). • Percentages – missing values. • Percentage increase and decrease. • Order FDP.

Shape						
Reception	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
• Naming and sorting 2d shapes (circles and triangles) • Positional language • Naming and sorting 2d shapes (squares and rectangles) • Know some common 3D shapes • Patterns	• Recognise and name 3D shapes. • Sort 3D shapes. • Recognise and name 2D shapes. • Sort 2D shapes. • Patterns with 3D and 2D shapes.	• Recognise 2D and 3D shapes. • Count sides on 2D shapes. • Count vertices on 2D shapes. • Draw 2D shapes. • Lines of symmetry. • Sort 2D shapes. • Make patterns with 2D shapes. • Count faces on 3D shapes. • Count edges on 3D shapes. • Count vertices on 3D shapes. • Sort 3D shapes. • Make patterns with 3D shapes	• Turns and angles. • Right angles in shapes. • Compare angles. • Draw accurately. • Horizontal and vertical. • Parallel and perpendicular. • Recognise and describe 2D shapes. • Recognise and describe 3D shapes. • Make 3D shapes	• Identify angles. • Compare and order angles. • Triangles. • Quadrilaterals. • Lines of symmetry. • Complete a symmetric figure	Measuring angles in degrees. • Measuring with a protractor. • Drawing lines and angles accurately. • Calculating angles on a straight line. • Calculating angles around a point. • Calculating lengths and angles in shapes. • Regular and irregular polygons.	• Measure with a protractor. • Calculate angles. • Vertically opposite angles. • Angles in a triangle. • Angles in a triangle – special cases. • Angles in a triangle – missing angles. • Angles in special quadrilaterals. • Angles in regular polygons. • Draw shapes accurately. • Nets of 3D shapes.

Money						
Reception	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
•	• Recognising coins. • Recognising notes. • Counting in coins.	• Count money – pence. • Count money – pounds (notes and coins). • Count money – notes and coins. • Select money. • Make the same amount. • Compare money. • Find the total. • Find the difference. • Find change. Two-step problems.	Pounds and pence. • Converting pounds and pence. • Adding money. • Subtracting money. • Giving change.	Pounds and pence. • Ordering amounts of money. • Using rounding to estimate money. • Four operations		

Measurement		
Reception	**Year 1**	**Year 2**
• Heavier and lighter • Measuring capacity • Comparing height and length • Days of the week • Measures of time • Capacity	• Compare lengths and heights. • Measure length • Introduce weight and mass. • Measure mass. • Compare mass. • Introduce capacity. • Measure capacity. • Compare capacity. • Before and after. • Dates. • Time to the hour. • Time to the half hour.	• Measure length (cm). • Measure length (m). • Compare lengths. • Order lengths. • Four operations with lengths. • Compare mass. • Measure mass in grams. • Measure mass in kilograms. • Compare capacity (ML and L). • Temperature. • Quarter past and quarter to. • Telling time to 5 minutes. • Minutes in an hour, hours in a day. • Find durations of time. • Compare durations of time.

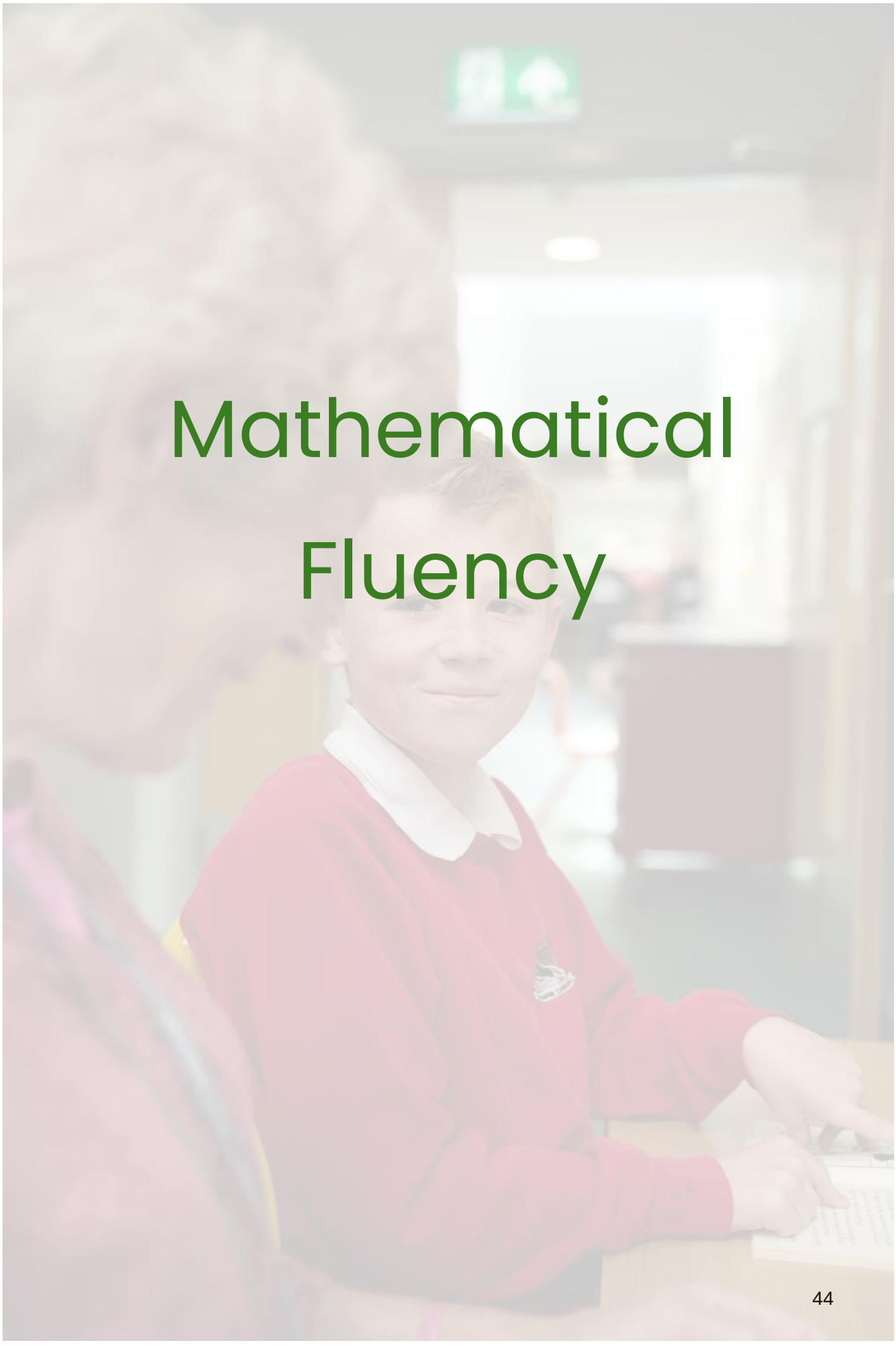
Measurement			
Year 3	**Year 4**	**Year 5**	**Year 6**
• Measure length. • Equivalent lengths – m & Cm. • Equivalent lengths – mm & cm. • Add lengths. • Subtraction lengths. • Measure perimeter. • Counting squares to find the area. • Comparing area. • know the months. • Hours in a day. • Telling the time to the minute. • AM and PM. • 24 hour clock. • Finding the duration. • Comparing the duration. • Measuring time in seconds. • Measure mass in g and KG. • Compare mass. • Add and subtract mass. • Measure capacity. • Compare capacity. • Add and subtract capacity.	• Kilometres. • Perimeter on a grid. Perimeter of a rectangle. • Perimeter of rectilinear shapes. • Hours, minutes and seconds. • Analogue to digital – 12 hour. • Analogue to digital – 24 hour.	• Measure perimeter. • Calculate perimeter • Area of rectangles. • Area of compound shapes. • Area of irregular shapes. • What is volume? • Compare volume. • Estimate volume. • Estimate capacity • Imperial units. • Converting units of time. • Timetables. • Kilograms and kilometres. • Milligrams and millilitres.	• Circles • Metric measures. • Convert metric measures. • Calculate with metric measures. • Miles and kilometres. • Imperial measures. • Shapes – same area. • Area of a triangle. • Area of a parallelogram. • Volume – counting cubes. • Volume of a cuboid.

Statistics						
Reception	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
		• Make tally charts. • Draw pictograms (1-1). • Interpret pictograms (1-1). • Draw pictograms (2, 5 and 10). • Interpret pictograms (2, 5 and 10). • Block diagrams.	• Pictograms where pictures are worth more than 1. • Bar charts • Tables	• Interpret charts. • Comparison, sum and difference. • Introducing line graphs. • Line graphs.	• Read and interpret line graphs. • Draw line graphs. • Use line graphs to solve problems. • Read and interpret tables. • Two way tables. Timetables.	• Read and interpret line graphs. • Draw line graphs. • Use line graphs to solve problems. • • Read and interpret pie charts. • Pie charts with percentages. • Draw pie charts. • The mean.

Geometry – positions and direction						
Reception	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
	• Describe turns. • Describe Position	• Describing movement. • Describing turns. • Describing movement and turns. • Making patterns with shapes.		• Describe position. • Draw on a grid. • Move on a grid. • Describe a movement on a grid.	• Position in the first quadrant. • Reflection. • Reflection with coordinates. • Translation. • Translation with coordinates.	• Coordinates in the first quadrant. • Coordinate in four quadrants. • Translations. Reflections.

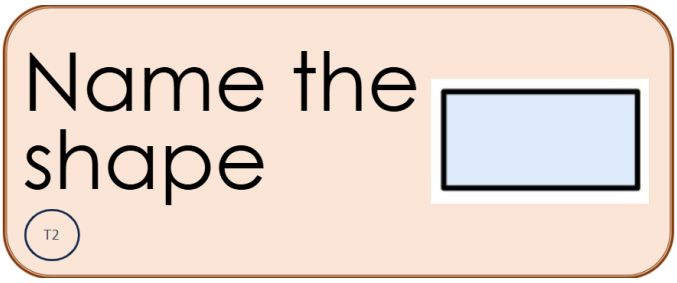
Algebra						
Reception	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
						• Find a rule – one step. • Find a rule – two step. • Use an algebraic rule. • Substitution. • Formulae. • Word problems. • Solve simple one step equations. • Solve two step equations. • Find pairs of values.

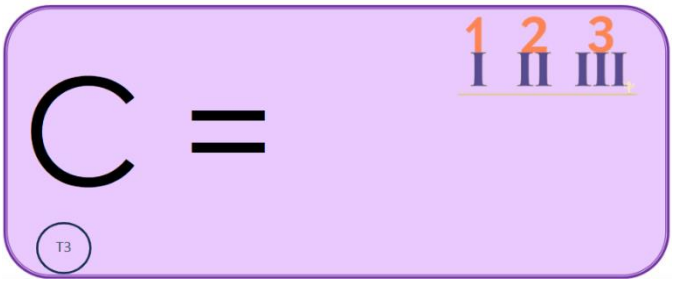
Ratio						
Reception	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
						• Use ratio language. • Ratio and fractions. • Introducing the ratio symbol. • Calculating ratio. • Using scale factors. • Calculating scale factors. • Ratio and proportion problems



Mathematical Fluency

Flash Cards





At Blackhorse Primary, the use of mathematical flashcards plays a central role in helping pupils retain key knowledge and overcome the "forgetting curve", as described by Rosenshine (2012) and developed further by Tom Sherrington in his work on *Principles of Instruction*. Cognitive science research shows that pupils naturally forget newly acquired information unless it is revisited and retrieved over time. To counter this, we have implemented a systematic flashcard approach designed to strengthen long-term memory and ensure key mathematical knowledge remains secure.

These flashcards are carefully broken down by year group and term, ensuring that all non-calculation-based knowledge—such as properties of shapes, units of measure, and key mathematical definitions—is revisited regularly and purposefully. Teachers use these flashcards throughout the week as part of weekly retrieval practice, drawing on Rosenshine's principle of "reviewing material frequently" to reinforce previous learning and make connections between topics. This approach ensures that pupils encounter key facts multiple times across the year, embedding them deeply and reducing cognitive load when tackling new or more complex concepts. By systematically revisiting essential knowledge in manageable chunks, we support pupils in transferring learning to long-term memory and developing the automatic recall needed to reason and problem-solve with confidence. This structured use of flashcards has become a consistent feature of mathematics teaching across the school, aligning with our broader commitment to evidence-informed practice, curriculum coherence, and ensuring that no pupil is left behind through forgetfulness or gaps in foundational knowledge.

The Teaching of Number Fluency

Central to Blackhorse's Mathematics curriculum is the development and mastery of fluency and automaticity of number facts. Both of these are critical foundations for mathematical proficiency and higher-order investigations. Fluency refers to the ability to recall basic arithmetic facts quickly and accurately, while automaticity emphasizes doing so effortlessly, without conscious calculation. When students achieve automaticity with addition, subtraction, multiplication, and division facts, they free up cognitive resources for tackling more complex mathematical reasoning. For example, a student who instantly recalls that 7 × 8 = 56 can devote working memory to solving multi-step word problems rather than being slowed by basic computations.

Research demonstrates that fluency in number facts is closely tied to success in advanced mathematics. Often students who lack automaticity often experience math anxiety and fall behind because problem solving becomes cognitively overwhelming. Without this foundation in fluency, students struggle to engage in higher-level operations such as factoring, simplifying fractions, or manipulating algebraic expressions.

Automaticity also promotes confidence and persistence. When students do not have to rely on inefficient counting strategies, they approach mathematics with greater ease and are more likely to see themselves as competent learners. This confidence supports motivation, which in turn strengthens achievement.

In sum, fluency and automaticity of number facts are not merely about speed; they are about building efficiency, reducing cognitive load, and fostering long-term mathematical understanding.

Across the school, we prioritise fluency and automaticity in providing a strong foundation for future success and the children engage in daily rehearsal of core facts as part of their maths lesson.

In EYFS and KS1, the focus is on number bonds while in LKS2 multiplication tables is the main concept. In UKS2 the sessions switch to the automaticity of calculation facts and strategies. The practice of review, retrieval and rehearsing are woven into each session.

Mastering Multiplication Facts

Year 2			**Y3**		
T3	**T4**	**T5-6**	**T1-2**	**T3-4**	**T5-6**
X2	X10	X5	X3 (x2,x5,x10)	X4 (x2,x3,x5,x10)	X8 (x2,x3,x4,x5, x10)
Y4					
T1	**T2**	**T3**	**T4**	**T5**	**T6**
X6 (x2,x3,x4,x5,x8, x10)	X7 (x2,x3,x4,x5,x6, x8,x10)	X9 (x2,x3,x4,x5,x7,x8,x10)	X12 (x2,x3,x4,x5,x7, x8,x9, x10)	X11 (x2,x3,x4,x5,x7, x8,x9, x10, x12)	Revise all (focusing on TTRS heat map)
Y5/6					
All Multiplication Facts and Arithmetic strategies					

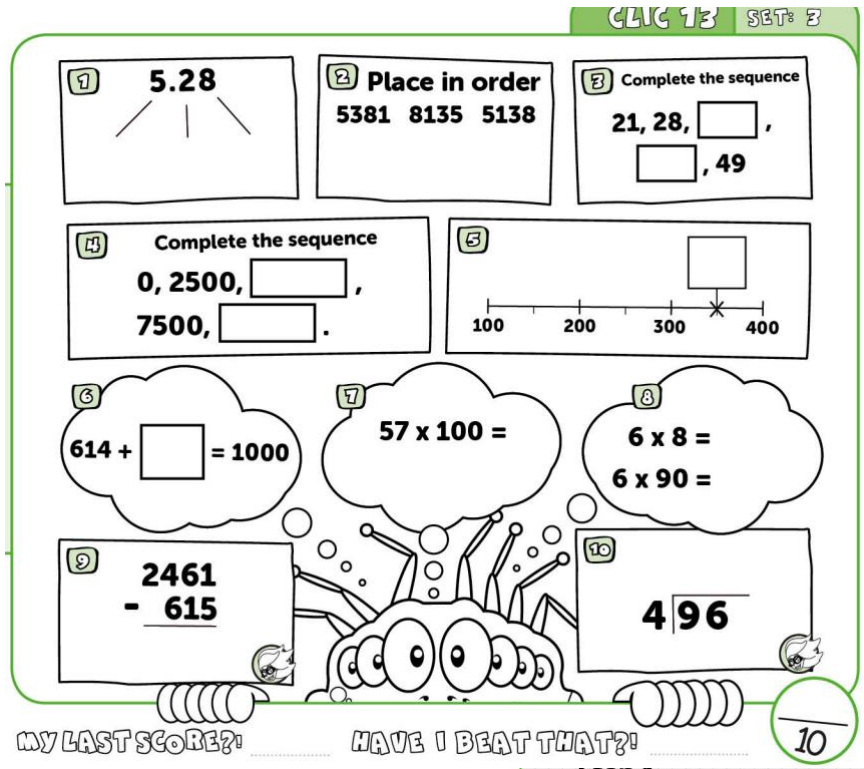
Monday - Thursday			
	New Learning	**Recap from current term**	**Revise from previous term**
Wk1	1x__, 2x__		5 questions: Complete previous table.
Wk2	5x__, 10x__	1x__, 2x__	5 questions: Recap one other previous table
Wk3	4x__, 8x___	1x__, 2x__ 5x__, 10x__	3 questions: Recap 2 other previous tables
Wk4	3x___, 6x___	1x__, 2x__ 5x__, 10x__ 4x__, 8x___	3 questions: Recap 3 other previous tables
Wk5	7x___, 9x___	1x__, 2x__ 5x__, 10x__ 4x__, 8x___ 3x___, 6x___	2 questions: Recap all other previous tables
Wk6	11x___, 12x___	1x__, 2x__ 5x__, 10x__ 4x__, 8x___ 3x___, 6x___ 7x___, 9x___	2 questions: Recap all other previous tables
Friday: Test all previous tables (incl. inverse) mixed (25 questions) – 3 minutes (timed).			

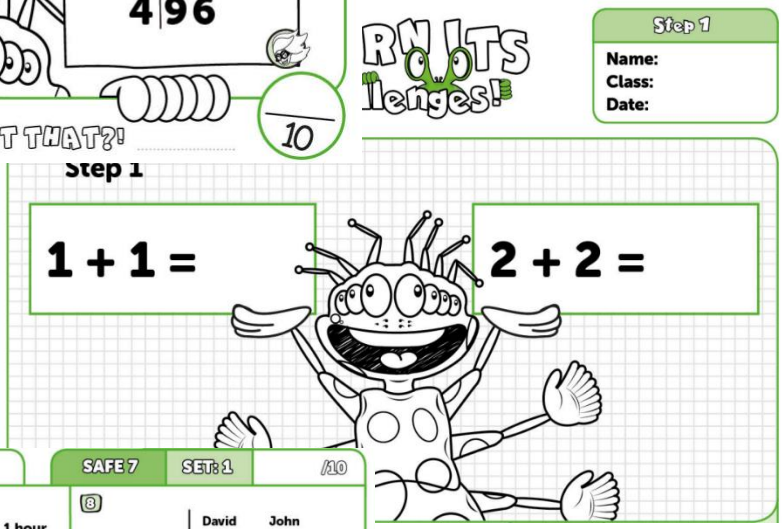
Big Maths and Mastering Fluency

At Blackhorse Primary, we use a programme called Big Maths to support and strengthen our pupils' mathematical fluency. This approach breaks down the National Curriculum into three clear strands, allowing teachers to target fluency systematically and progressively. The first strand, Learn Its, focuses on essential number facts that pupils should commit to memory, such as number bonds and multiplication facts, forming the foundation of automatic recall. The second strand, CLICs (Counting, Learn Its, It's Nothing New, and Calculation), addresses core number knowledge and calculation skills, while the third strand, SAFE (Shape, Amounts, Fractions, and Explore), covers the wider areas of mathematics beyond number.

Each week, pupils complete one short assessment in each of these strands, providing teachers with timely and precise diagnostic information. The programme then highlights individual and class-level gaps in understanding. In the following week, teachers plan four targeted fluency sessions, each lasting approximately 15 minutes, designed to address these gaps directly. This responsive model ensures that teaching is driven by assessment, allowing learning to be carefully tailored to the needs of each class and pupil.

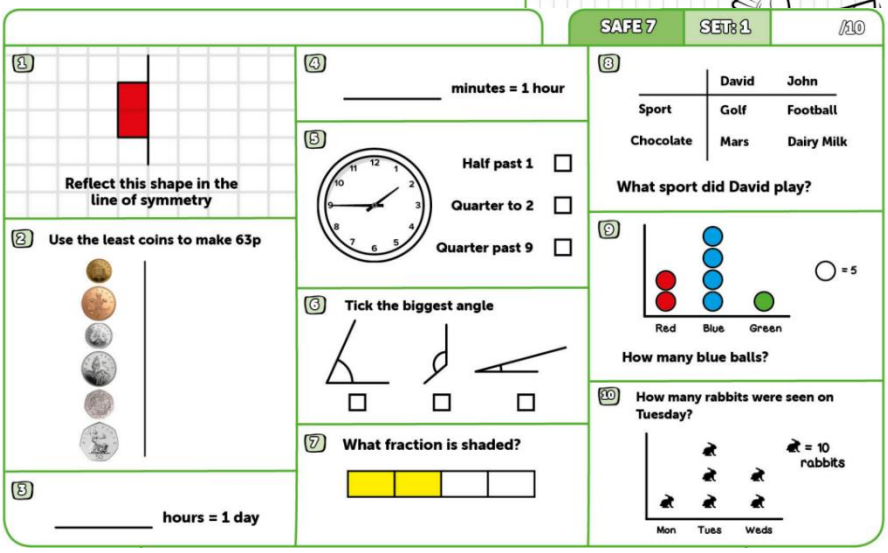
Through regular repetition and focused intervention, pupils revisit and practise key skills week after week, securing their understanding and building automaticity. This consistent approach not only underpins success in reasoning and problem-solving but also ensures that pupils — including disadvantaged learners and those with SEND — have the secure fluency needed to access the full breadth of the mathematics curriculum with confidence.



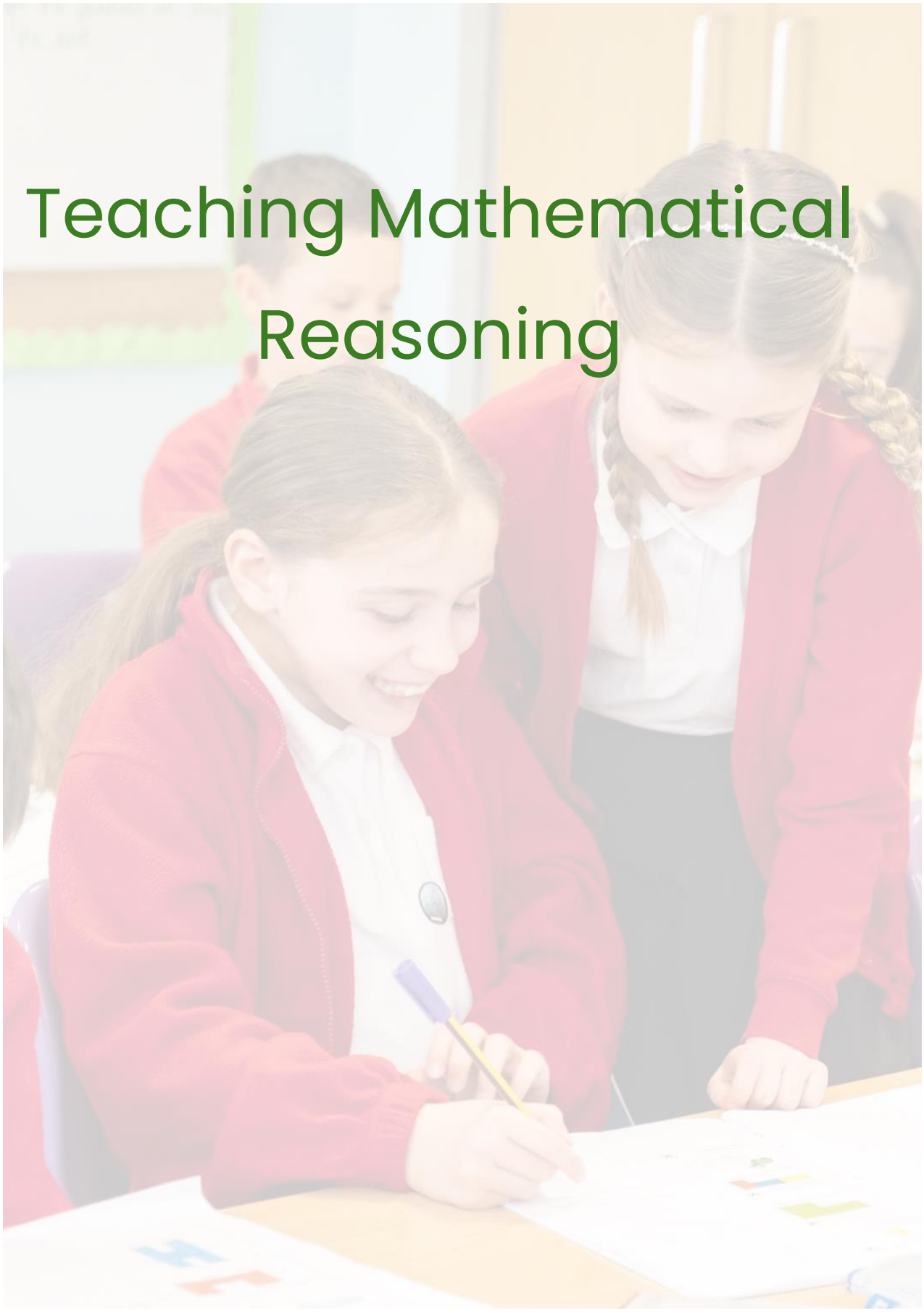


Step 1

Name:
Class:
Date:



Teaching Mathematical Reasoning



Background and Research

At Blackhorse Primary, the teaching of reasoning builds securely from our strong foundations in fluency and mathematical vocabulary; without these elements, reasoning cannot be meaningfully developed. Our approach is grounded in research evidence and informed by the work of Third Space Learning alongside analysis of the KS2 SATs frameworks. Recognising that reasoning is a skill that must be explicitly taught rather than passively acquired, we identified the importance of modelling, exposure, and purposeful practice in helping pupils master different forms of reasoning. To achieve this, we conducted an in-depth analysis of past SATs reasoning papers, categorising every question into seven distinct question types. This taxonomy provided clarity for teachers and consistency across the school, ensuring pupils are systematically exposed to the full range of reasoning challenges they will encounter during their primary education. Staff were provided with this research, supported by professional development, so that explicit reasoning instruction became a coherent part of our sequenced curriculum. Teachers now plan to model a wide variety of reasoning examples once pupils have a solid fluency foundation in the underlying mathematical concept. This ensures that reasoning is taught purposefully, at the right stage in the learning journey, and with clear links to the mathematical content being studied.

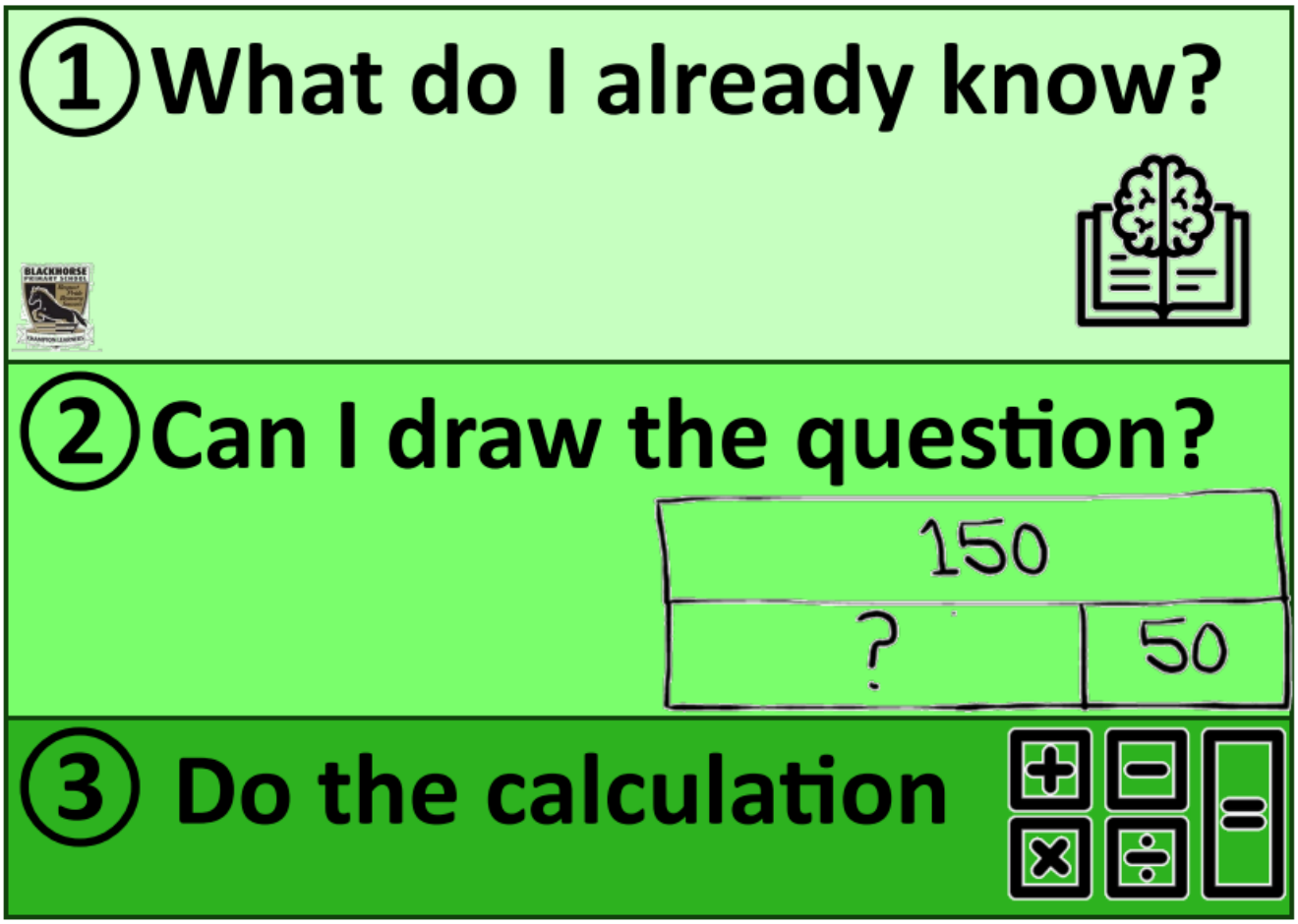
The Reasoning Toolkit

Building on this foundation, we developed a bespoke Reasoning Toolkit to scaffold and support pupils' mathematical thinking. This toolkit provides a structured framework that teachers use every time they model reasoning, guiding pupils through clear, logical steps. There are two versions: one designed for KS1, introducing early reasoning language and thought processes, and a more advanced version for KS2, which deepens pupils' explanations and encourages greater independence. From Year 3 onwards, every pupil has access to their own copy of the toolkit on their table, and it is also prominently displayed on classroom learning walls to promote consistent reference and use.

Reasoning in Key Stage 1

In KS1, reasoning is often modelled and practised orally as a whole class, enabling pupils to focus on the mathematical thinking without being hindered by the demands of reading or writing. This oral reasoning approach ensures accessibility for all pupils and helps them develop the confidence to verbalise their ideas using accurate mathematical language.

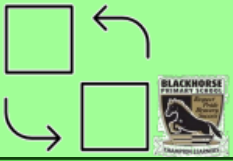
Together, these strategies have embedded a consistent, progressive approach to teaching reasoning across the school, ensuring all pupils—regardless of ability—can explain, justify, and apply their mathematical understanding with increasing depth and independence.


1 What do I already know?
2 Can I draw the question?
150
?
50
3 Do the calculation

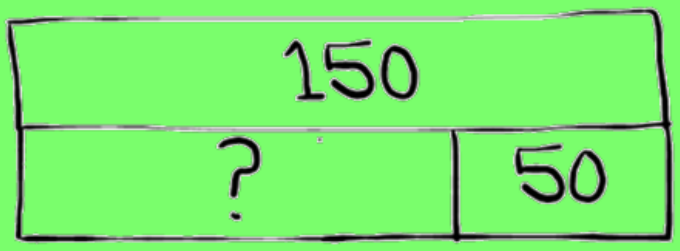
① What type of Question is

② What do I already know?

③ Do I need to convert the units?



④ Do I need to visualise this problem?

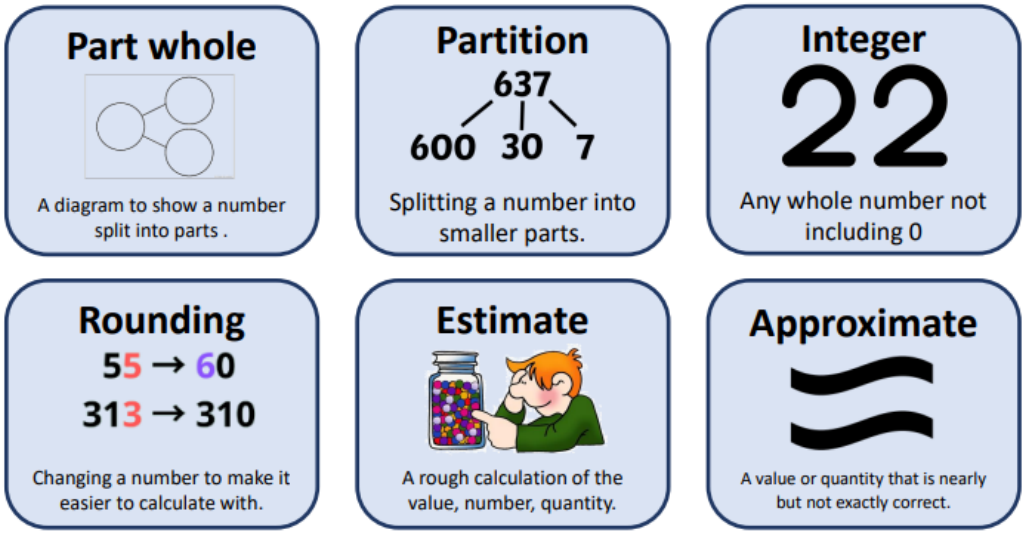


⑤ Complete the calculation

⑥ Write the answers in the

Vocabulary

At Blackhorse Primary, we recognise that mathematical vocabulary is fundamental to pupils' conceptual understanding and reasoning. Without secure understanding of key terms, pupils can struggle to interpret questions, explain their thinking, or make meaningful connections between concepts. To address this, we have established shared definitions for all key mathematical vocabulary across the school, ensuring consistency and precision in the language used by teachers and pupils alike. As part of our commitment to adaptive teaching, all key vocabulary is dual coded—combining words with clear visual representations—to support understanding for all learners, including disadvantaged pupils and those with SEND. This vocabulary is explicitly introduced and displayed at the start of each lesson, allowing teachers to check understanding and ensuring that all pupils have equitable access to the language of mathematics before new learning is introduced. This consistent focus on vocabulary not only removes linguistic barriers but also enables pupils to confidently use precise mathematical language in their reasoning and explanations, strengthening both their fluency and depth of understanding.



Adaptive Teaching

Adaptive teaching promotes the idea that all pupils can access the same lesson and curriculum, regardless of their individual starting points. It supports teaching the same core content to all students, while providing scaffolds and targeted support to those who need additional help. This ensures that every child has the opportunity to meet the same high expectations. It is a responsive and inclusive approach that relies on continuous assessment, observation, and professional judgment. By actively monitoring pupils' understanding and progress, teachers can adjust their instruction, resources, and level of support in real time.

Importantly adaptive teaching strategies should not be used in a fixed way for specific children. Instead, they should be used flexibly to support any child showing a particular area of need and removed when that need is no longer present.

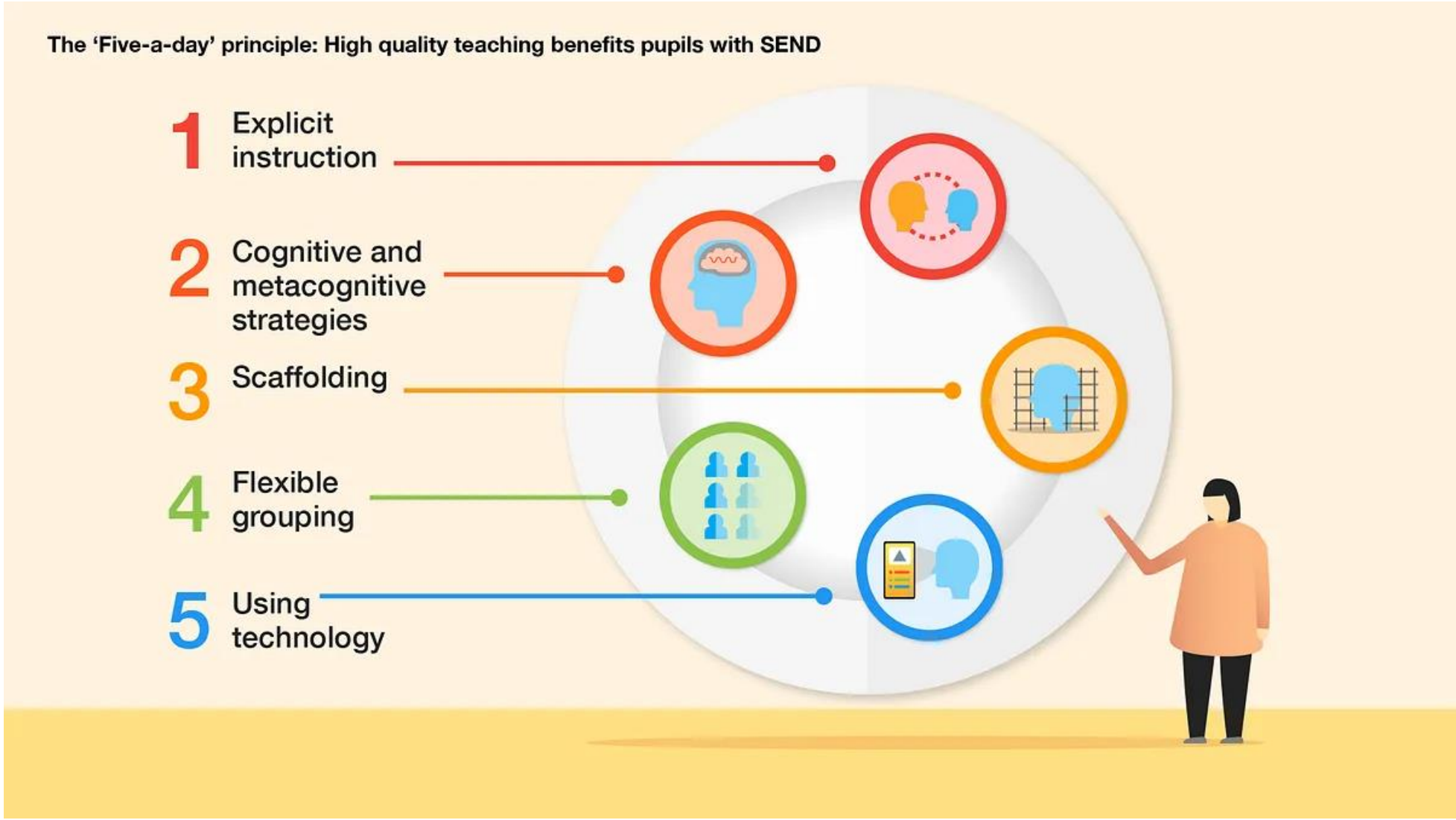
The most effective adaptive teaching occurs when adults anticipate potential barriers and plan appropriate strategies in advance. However, in-the-moment can also be a valuable tool when unforeseen challenges arise.

In the context of Mathematics, it is important to consider the need for the following:

- Careful selection of visual representation when modelling
- Breaking down tasks and instructions
- Pre-teaching vocabulary, or key concepts
- Using visual or physical aids, depending on what each learner requires
- Explicitly making links with prior learning
- Flexible groupings to

Ultimately, adaptive teaching helps to close gaps in learning, while maintaining ambition for all learners.

We have based our adaptive teaching approach for mathematics on the EEF's 'Five a Day Principle'.


The 'Five-a-day' principle: High quality teaching benefits pupils with SEND
1 Explicit instruction
2 Cognitive and metacognitive strategies
3 Scaffolding
4 Flexible grouping
5 Using technology

Adaptive practice in Mathematics at Blackhorse Primary School

Explicit Instruction 	**Cognitive and Metacognitive Strategies** 	**Scaffolding** 
• **I Do part of the lesson** Modelling facing learners • Thinking out loud • Keep language clear and concise • Use precise vocabulary • Ensure fair access to modelled input (e.g. visual aids, concrete resources) • Carefully selected visual representations and questions • Pre-empt and address misconceptions • Direct engagement, using learners' names • Allocate adults to re-word and re-frame	• **Vocabulary, We Do, Self-Assessment Parts of Lesson** • Connections with prior learning • Active participation • Choral response • Cold calling • Talk together • Peer explanations to whole class and partners • Chunking the task • Display useful information in a more permanent form • Self-reflection and self-marking	• **We Do and You Do part of lesson** • Ad Hoc teaching • Intervening in the moment – targeted support • Building in additional practice or revisiting earlier steps in the progression • Task selection choices – do all children have to complete every question? • Using a person (peer, teacher, TA)

Flexible Groupings and Seating	Using Technology	
• **You Do and marking part of lesson, follow-up sessions** • Changed in response to assessment • Consideration of where vulnerable learners are sat • Collaborative learning • Tracking back or pre-teaching	• **I Do, Reasoning and Ad Hoc teaching input** • Visualiser to model worked examples • Mirror the teacher's screen • Speech-generating apps • Games to support learning – TTRS and Numbots • White Rose Digital Tools	• Using resources: ○ Physical manipulatives (see resources cupboard) ○ Worked examples ○ Reasoning Toolkit ○ Flash Cards ○ Sentence Stems

Adaptive practice for those with SEND

Explicit Instruction:

- Re-phrasing, re-wording or re-framing of questions and instructions
- Explicit modelling of activity before child
- Use of clear language
- Consideration of number of instructions, explanations and steps – reduce where necessary
- Carefully selected and relevant resource or representation

Cognitive and Metacognitive Strategies

- Connections with prior learning
- Chunking the task
- Active participation

Scaffolding:

- Inteventions
- Prompting and sentence scaffolds/stems
- Duel coding of vocabulary and prompt sheets
- Resources
- White Rose TA Hub
- White Rose Lesson Videos
- Physical resources
- Enlarged resources, including worksheets
- Resources on different coloured paper
- Pre-teaching concepts
- Overlearning concepts
- Extending timings for lessons, activities or steps of learning
- Time to process information

Flexible Seating and Grouping:

- Consideration of position in classroom – adult and child
- Ad hoc grouping within lesson

Use of Technology:

- Mirroring teacher's screen
- Use of iPads, laptops, communication devices
- TTRS/Numbots
- Use of rymes and songs
- White Rose Digital Tools

Assessment

At Blackhorse Primary, summative assessment plays a vital role in our approach to teaching and learning in mathematics. While ongoing formative assessment informs daily teaching and supports immediate next steps, summative assessments provide a broader, more reliable measure of pupils' understanding and progress over time. They enable us to evaluate how securely pupils have retained and can apply the mathematical knowledge and skills taught across a unit, term, or academic year.

Summative assessments also allow us to identify patterns and trends at cohort, class, and individual level, highlighting strengths and areas for development that may not be visible through day-to-day teaching alone. Following the completion of the assessment, the school's assessment lead will analyse the data, in conjunction with the rest of the senior leadership team. This information is then used diagnostically — to adapt curriculum planning, target intervention, and ensure that disadvantaged pupils and those with SEND receive the support they need to achieve well. Furthermore, summative data provides valuable evidence of progress towards national expectations, informs conversations with parents and carers, and supports accurate teacher judgements when reporting attainment. By combining summative assessment with ongoing formative strategies, we ensure that our mathematics curriculum remains responsive, ambitious, and carefully sequenced to meet the needs of all pupils.

Summative assessment schedule

Every full term

Year Group	Assessment
R	Baseline Assessment
1	LEAF Assessment Tasks
2	LEAF Assessment Tasks - Test base arithmetic and reasoning paper
3	
4	Unofficial times tables check LEAF Assessment Tasks - Test base arithmetic and reasoning paper
5	LEAF Assessment Tasks - Test base arithmetic and reasoning paper
6	KS2 SATS papers completed in October, December, February and Easter as a minimum.

Presentation and Number Formation

Remember to…

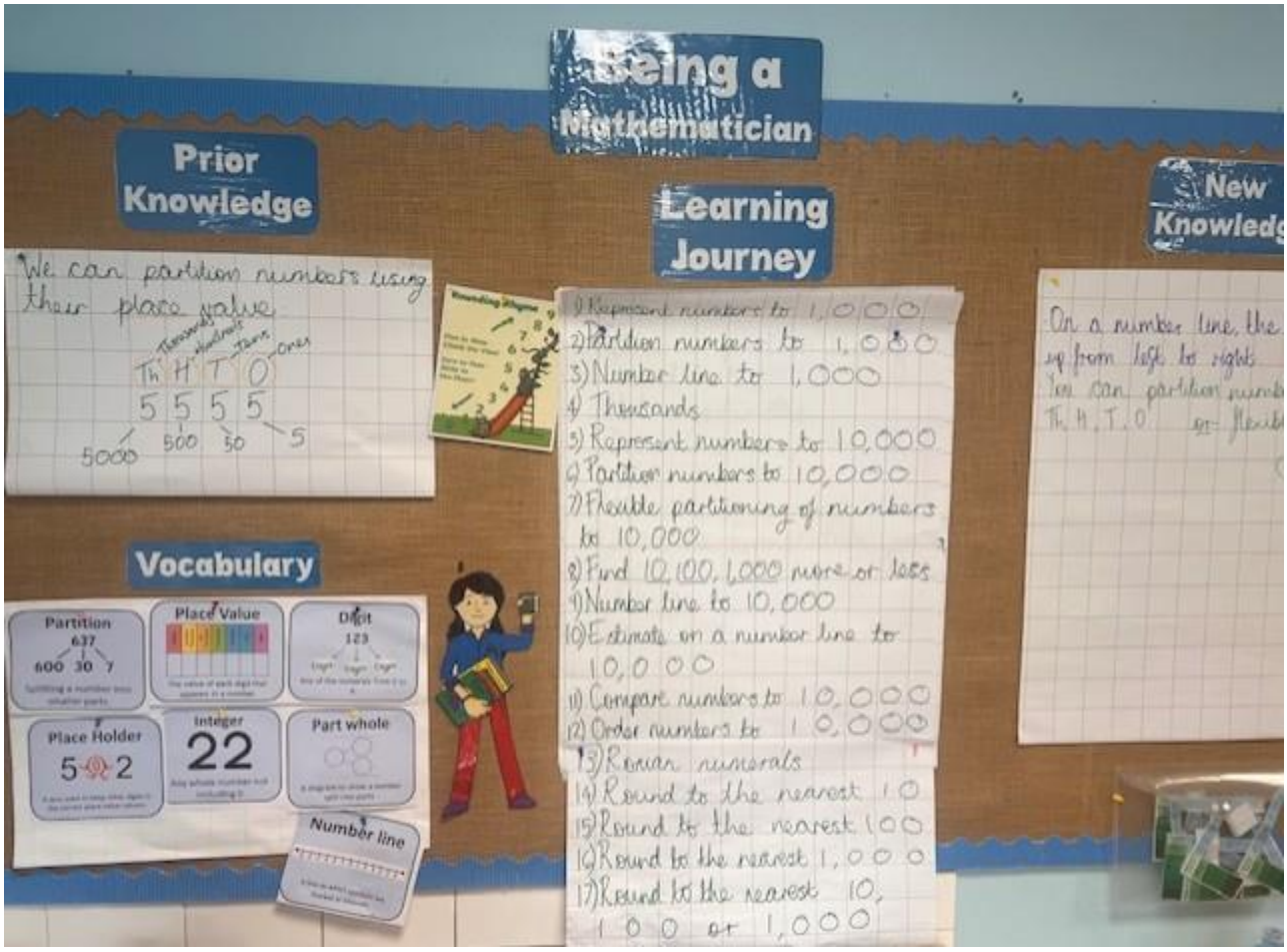
1. **Be Kind – tell your partner <u>what they did well</u>.**
2. **Be Specific – tell your partner <u>what they can improve</u>.**
3. **Be Helpful – tell your partner <u>how they can improve</u>.**

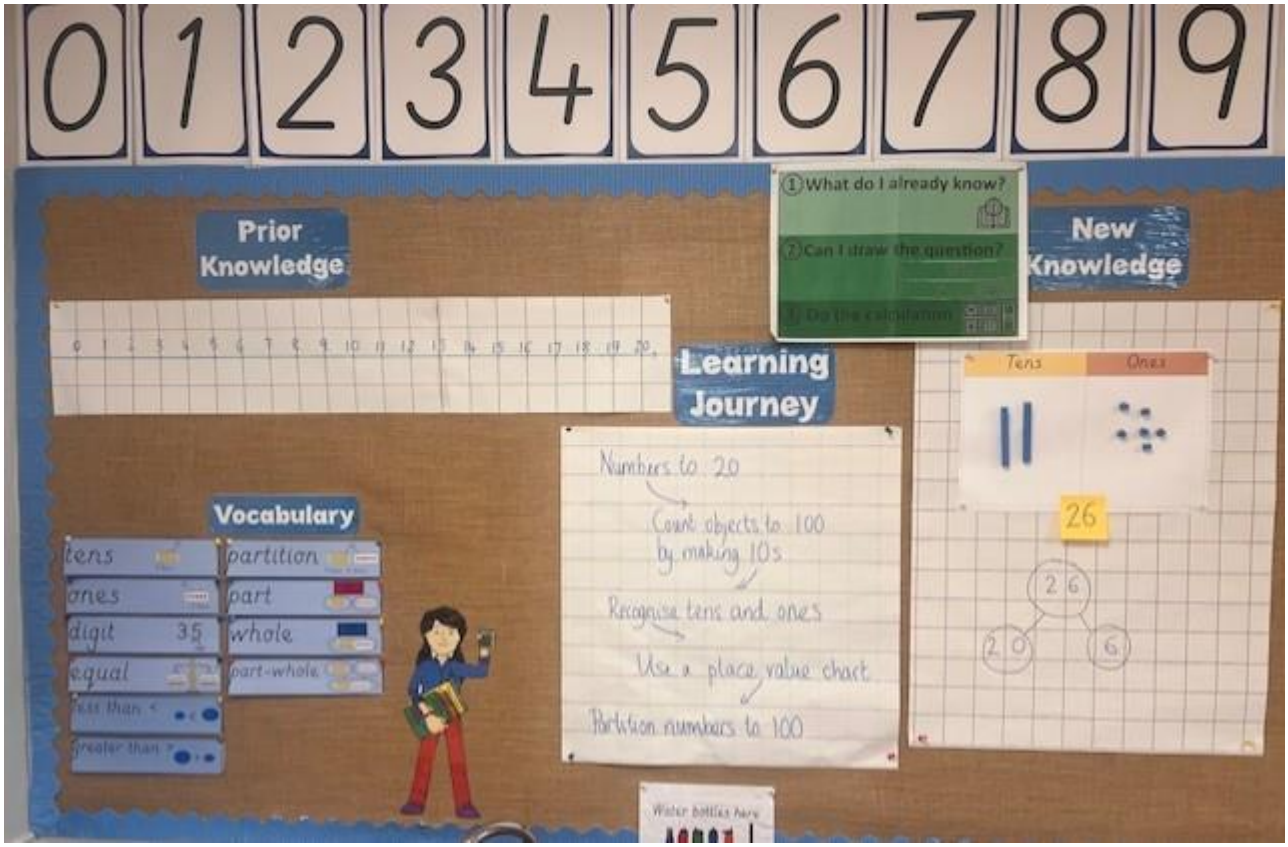
<u>Checklist:</u>

	WALT & date written.
<u>WALT</u> 	WALT & date underlined.
 123	Numbers are correctly formed.
	Best handwriting.
	Sheets stuck in straight.
	Drawings/ diagrams in pencil.
	Use a ruler to draw straight lines

Working Walls

Our mathematics working walls follow a consistent structure across the school, providing pupils with a clear and supportive visual reference throughout each unit of learning. They display key vocabulary, an overview of the current unit, and any new knowledge or representations that pupils will need to access and apply during lessons. These working walls act as a dynamic learning tool, regularly updated to reflect the progression of teaching and learning within the classroom. They help pupils to make connections, recall prior knowledge, and use mathematical language with accuracy and confidence. By ensuring a consistent structure in every classroom, pupils know exactly where to find support and reference points for their learning, promoting independence, metacognition, and retention of key concepts.




0 1 2 3 4 5 6 7 8 9
Prior Knowledge
1 What do I already know?
2 Can I draw the question?
3 Do the calculation
New Knowledge
Learning Journey
Numbers to 20
Count objects to 100 by making 10s
Recognise tens and ones
Use a place value chart
Partition numbers to 100
Vocabulary
tens
ones
digit
equal
partition
part
whole
part-whole
Tens
Ones
11
26
Water bottles here


Being a Mathematician
Prior Knowledge
Hundred Board
1 2 3 4 5 6 7 8 9 10
11 12 13 14 15 16 17 18 19 20
21 22 23 24 25 26 27 28 29 30
31 32 33 34 35 36 37 38 39 40
41 42 43 44 45 46 47 48 49 50
51 52 53 54 55 56 57 58 59 60
61 62 63 64 65 66 67 68 69 70
71 72 73 74 75 76 77 78 79 80
81 82 83 84 85 86 87 88 89 90
91 92 93 94 95 96 97 98 99 100
1 more
1 less
zero 0
one 1
two 2
three 3
four 4
five 5
six 6
seven 7
eight 8
nine 9
ten 10
New Knowledge
Vocabulary
Part whole
1 What do I already know?
2 Can I draw the question?
3 Do the calculation
Mathematicians use Toolkits
number

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TTRS/ Numbots

Times Tables Rock Stars & Numbots is used to practice Number Fluency.

Big Maths

Big Maths is used to support retrieval practice & fluency teachin .

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