Maths At

Eyrescroft Primary School

This document sets out the skills progression, assessment overview, AfL strategies and fundamental objectives for the whole of Eyrescroft Primary School and includes examples for reference.

Our school aims for mathematics are to ensure that all pupils:

become fluent in the fundamentals of mathematics, including 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 can 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 persevering in seeking solutions

Aims taken from the National Curriculum

White Rose

As a school, we use the White Rose scheme of learning, which provides comprehensive coverage of the National Curriculum. While this forms the basis of our mathematics teaching, staff use their professional judgement to adapt lessons in response to the needs of their pupils. This may include spending additional time on particular concepts where required or progressing more quickly when pupils demonstrate secure understanding. Where appropriate, teachers may supplement White Rose materials with additional resources, such as Testbase, Twinkl, NRich, or SATs Companion (Years 5 and 6), or develop bespoke resources to ensure pupils' needs are effectively met. White Rose is therefore used as a supportive framework rather than a prescriptive programme.

Times Tables

All teachers teach times tables daily, initially counting in equal groups with resources to support children's understanding. (counting stick, counters, bar model, etc). When children have learnt to recall the times tables, we move on to using a counting stick, flashcards, and individual questions throughout the day to check children's understanding and support recall of times tables questions. Children will also play a range of multiplication games to consolidate learning.

We use TTRockstars as a tool to develop times tables fluency. Teachers use AfL to focus screen time on the times table facts that children are currently learning.

Children in Year 3 will practise the MTC check from Spring 2 onwards and scores will be tracked and monitored to inform future teaching. Children in Year 4 will practise MTC daily from September. Teachers to track scores daily in Year 4 (and 5 for children who need it). Each half term, Y4 teachers will add average MTC scores to Arbor.

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Count to 10 and 20.	**Autumn 1:** recall 2s (initially to 10, then to 20) **Autumn 2:** recall 10s **Spring 1:** recall 5s **Spring 2/ Summer term:** recall 2s, 5s and 10s, start to recall with individual questions.	**Autumn 1:** recall x2 in any order **Autumn 2:** recall x 10 facts in any order **Spring 1:** recall x5 facts in any order **Spring 2/ Summer term:** Recall 2s, 5s and 10s and related division facts. Start to recall 3s.	**Autumn 1:** recall x3 in any order **Autumn 2:** recall x4 in any order **Spring 1:** recall x8 in any order **Spring 2/Summer term:** Recall 3s, 4s and 8s and related division facts. If children have struggled with one times table in particular, focus on that for longer.	**Autumn 1:** recall x6 in any order **Autumn 2:** recall x9 in any order **Spring 1:** recall x7 in any order **Spring 2 and Summer term:** Recall all times tables to 12x12 and related division facts.	Children who have not mastered their times tables to practise daily in interventions.	Children who have not mastered their times tables to practise daily in interventions.

Flashback 4

All children complete Flashback 4 or a fluency activity daily to build up their quick recall and understanding of previously taught skills. As a school, we use White Rose's Flashback 4 documents, which the children have 10 minutes to complete. Teachers monitor the children, identifying misconceptions and supporting as needed. When children have completed, teachers go through the answers and children mark their own work.
If children are struggling with a particular skill, Flashback 4 can be adapted to practise this.
Years 1 to 5 have **Fluency Friday** every week. The children have up to 10 questions using the 4 operations they have learned, answering as quickly as possible. Teachers use this as an opportunity to model and discuss the most efficient method.
Flashback 4 is completed at the start of the maths lesson and recorded in pupils' books (EYFS and Autumn and Spring of Y1 to complete on white boards)

Number Formation

Number formation is essential because it builds the foundation for mathematical literacy, enabling children to write numbers legibly, accurately, and quickly. Mastering this skill frees up cognitive load, allowing students to focus on complex problem-solving rather than struggling with reversals or pencil control. It also enhances fine motor skills and aids in understanding place value and numerical sequence. Clear number formation is essential so children's work can be read easily by anyone and there are no misunderstandings.
4s should be open, 1s should be a straight line, 6s and 0s should be clear. (See example below)

EYFS	**Year 1**	**Year 2**	KS2 children have card prompts as needed:
Practise number formation using a wide range of techniques as regularly as needed including sand trays, writing in the air and tracing a highlighted number,	Number formation prompts 1-10 to be stuck in all maths books to support forming every number correctly. Errors to be identified and children to practise as needed.	Number formation flaps 1-10 and 2-digit numbers on squared flaps to be stuck in all maths books. Errors to be identified and children to practise as needed.	

Calculation Policy

At Eyrescroft, we understand the importance of the concrete, pictorial and abstract method and each year group uses this when appropriate to support children's understanding. In KS1, the use of manipulatives underpins children's learning of foundational knowledge. As they gain these fundamental skills, children rely less on the use of manipulatives. However, they are still used when appropriate. This is made clear through our calculation policy.

Assessment

When children enter Eyrescroft in reception, they undergo the Reception Baseline Assessment within the first six weeks, which includes mathematics and provides information on children's current knowledge that teachers can use as a basis. This tracks their progress through the rest of their school career.
Teachers and TAs use formative assessment throughout the reception year with daily observations of children's play and interactions with each other, in particular during daily maths lessons and when using the resources in the maths area. Children complete work on a daily maths task, which adults observe and use to inform planning. At the end of the reception, they complete the Early Years Foundation Stage Profile, which judges children as expected or emerging in mathematics.

From Year 1 to Year 5, children complete the NTS assessments in the Autumn and Summer terms. Children in Year 6 complete additional past SATs papers throughout the year. The results of these are put onto a Question Level Analysis Grid, which teachers use to inform planning to close the gaps in children's knowledge. (Check Yr 1 NTS in Autumn)

Teachers and adults in school use Assessment for Learning throughout daily maths lessons and observations of children's discussions and answers to assess their understanding of different mathematical concepts. Adults give children immediate feedback on their understanding and provide additional support as needed. Teachers can adapt their teaching to suit the children's needs and ensure they understand before moving on to a new concept.
Examples of AfL that you may see include using whiteboards to hold up answers as the teachers ask questions, tell your partner, show me on your fingers, vote true or false, prove it (drawing or using manipulatives)

Feedback and Marking

Adults mark children's work using a blue pen and provide feedback as required. Adults provide children with additional challenges or questions during lessons and as next steps, as required to support or extend their understanding.

Feedback and marking in maths lessons should be constructive, timely, and supportive of student learning. Feedback should be aimed at helping students understand their mistakes and build on their strengths. It should guide them toward improving their understanding, not just point out errors. Teachers should guide pupils on how to improve instead of just saying something is wrong.

Feedback can be verbal (engage with students during or after the lesson to discuss their progress, ask guiding questions, or provide instant clarification), written (brief notes that clarify mistakes and reinforce key learning points using ticks or dots) or peer (students to review each other's work, focusing on positive aspects and areas for improvement, helping them learn collaboratively). When written, teachers should aim to mark work before the next lesson so adults understand any misconceptions children have and can address them before moving on with learning.

Children should be encouraged to check their own work and reflect on their understanding. This can be done with guiding questions or a "fix-it time" where students revisit their mistakes.

In short, feedback in maths lessons should guide, encourage, and help students understand why something works or doesn't. Marking should be clear, prompt, and constructive, ultimately supporting continuous learning.

Fluency Fundamentals

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Addition & Subtraction:					
1 more Largest number first. Add 10. Number bonds to 10 Ten plus ones. Doubles up to 10 Use number bonds of 10 to derive bonds of 11 1 less Fact families/number bonds Subtract 10. Teens subtract 10. Difference between	Number bonds to 10 & within 10 Add 1 digit to a 2-digit number with and without bridging. Partition numbers, add tens then ones Doubles up to 20 and multiples of 5 Add multiples of 10. Partition and recombine Number bonds, subtraction (to 10 & within 10) Subtract 1 digit from 2 digits by bridging Partition numbers and subtract count back in 10s then 1s Subtract 10 and multiples of 10; Difference between	Add multiples of 100 Add single-digit bridging through boundaries Partition the second number to add Pairs of 100 Use near doubles to add Add near multiples of 10 and 100 by rounding and adjusting Partition and recombine Subtract multiples of 100 Subtract a single digit by bridging through boundaries Partition the second number to subtract Difference between Subtract near multiples of 10 and 100 by rounding and adjusting	Add multiples of 1000s Fluency of 2, 3 and 4 digit numbers Partition the second number to add Decimal pairs of 10 and 1 Use near doubles to add Adjust both numbers before adding Add near multiples Partition and recombine Subtract multiples of 1000s Fluency of 2, 3 and 4 digit subtractions Partition the second number to subtract Decimal subtraction from 10 or 1 Difference between Subtract near multiples by rounding and adjusting	Add multiples of 1000s (tenths) confidently and accurately Fluency of 4 and 5 digit numbers including decimals Partition the second number to add Use number facts, bridging and place value Adjust numbers to add Partition and recombine Subtract multiples of 1000s, (tenths) Fluency of 4 and 5 digit numbers including, decimals Partition the second number to subtract Difference between Adjust numbers to subtract	Add multiples of 1000s (tenths & hundredths) confidently and accurately Fluency of 5+ digit numbers including with decimals Partition the second number to add Use number facts, bridging and place value Adjust numbers to add Partition and recombine Subtract multiples of 1000s, (tenths, hundredths) Fluency of 5+ digit numbers including with decimals Partition the second number to subtract Use number facts, bridging and place value Adjust numbers to subtract Difference between
Multiplication & Division					
Doubles up to 10 Double multiples of 10 Count in 2s, 5s and 10s Count back in 2s, 5s and 10s Halves up to 10 Halve multiples of 10	Doubles up to 20 and multiples of 5 & 10 Count in 3s 2 x, 5 x and 10 x tables Division facts (2, 5 and 10 x table) Halves up to 20 Count back in 3s	Review 2x, 5x and 10x 4x table Double two-digit numbers 8 x table 3 x table 6 x table or review others Review division facts (2x, 5x, 10x table) Division facts (4, 8 and 3 x table) Halve two-digit numbers	Review 4x, 8x tables 10 times bigger 3x, 6x and 12x tables Double larger numbers and decimals 3x, 9x tables 11x, 7 x tables 6x, 12 x tables Division facts (4, 8, 3, 6, 12, 9, 11, 7 x tables) 10 times smaller Halve larger numbers and decimals	100, 1000 times bigger 10, 100, 1000 times smaller Double larger numbers and decimals Partition to multiply mentally Multiplication facts up to 12 x 12 100, 1000 times smaller Division facts up to 12 x 12 Halve larger numbers and decimals Partition decimals to divide mentally	Multiplication facts up to 12 x 12 (fluently and confidently) Partition to multiply mentally Double larger numbers and decimals Division facts up to 12 x 12 (fluently and confidently) Partition to divide mentally Halve larger numbers and decimals

Ready to Progress (Teaching Overview)

Place Value

EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
ELG: Number Children at the expected level of development will: Have a deep understanding of numbers to 10, including the composition of each number. Subitise (recognise quantities without counting) up to 5. ELG: Numerical Patterns Children at the expected level of development will: Verbally count beyond 20, recognising the pattern of the counting system. Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.	count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number count numbers to 100 in numerals; count in multiples of twos, fives and tens identify and represent numbers using objects and pictorial representations read and write numbers to 100 in numerals read and write numbers from 1 to 20 in numerals and words given a number, identify one more/ less	count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward read and write numbers to at least 100 in numerals and in words identify, represent and estimate numbers using different representations, including the number line recognise the place value of each digit in a two-digit number (tens, ones) compare and order numbers from 0 up to 100; use <, > and = use place value and number facts to solve problems	count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number identify, represent and estimate numbers using different representations read and write numbers up to 1000 in numerals and in words recognise the place value of each digit in a 3-digit number (hundreds/tens/ones) compare and order numbers up to 1000 solve number problems and practical problems involving these ideas	count in multiples of 6, 7, 9, 25 and 1000 count backwards through 0 to include negative numbers identify, represent and estimate numbers using different representations read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of 0 and place value find 1000 more or less than a given number recognise the place value of each digit in a 4-digit number (thousands, hundreds, tens, and ones) order and compare numbers beyond 1000 round any number to the nearest 10, 100 or 1000 solve number and practical problems that involve all of the above, and with increasingly large positive numbers	count forwards or backwards in steps of powers of 10 for any given number up to 1000 000 count forwards and backwards with positive and negative whole numbers, including through zero read, write, (order and compare) numbers to at least 1000 000 and determine the value of each digit read Roman numerals to 1000 (M) and recognise years written in Roman numerals read, write) order and compare numbers to at least 1 000 000 and determine the value of each digit interpret negative numbers in context round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 solve number problems and practical problems that involve all of the above	read, write, (order and compare) numbers up to 10 000 000 and determine the value of each digit (read, write), order and compare numbers up to 10 000 000 and determine the value of each digit round any whole number to a required degree of accuracy use negative numbers in context and calculate intervals across zero solve number and practical problems that involve all of the above

Addition and Subtraction						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.	add and subtract one-digit and two digit numbers to 20, including zero solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = – 9	add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones a two-digit number and tens two two-digit numbers adding three onedigit numbers solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures applying their increasing knowledge of mental and written methods	add and subtract numbers mentally, including: a three-digit number and ones a three-digit number and tens a three-digit number and hundreds add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate solve addition and subtraction twostep problems in contexts, deciding which operations and methods to use and why	add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) add and subtract numbers mentally with increasingly large numbers solve addition and subtraction multistep problems in contexts, deciding which operations and methods to use and why solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	perform mental calculations, including with mixed operations and large numbers use their knowledge of the order of operations to carry out calculations involving the four operations solve addition and subtraction multistep problems in contexts, deciding which operations and methods to use and why

Multiplication and Division						
EYFS	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.	Count in equal steps of 2s, 5s and 10s from 0 solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher	recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts	recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects	recall multiplication and division facts for multiplication tables up to 12 × 12 use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers recognise and use factor pairs and commutativity in mental calculations multiply two-digit and three-digit numbers by a one-digit number using formal written layout solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects	identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers establish whether a number up to 100 is prime and recall prime numbers up to 19 recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers multiply and divide numbers mentally drawing upon known facts divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign	identify common factors, common multiples and prime numbers use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context perform mental calculations, including with mixed operations and large numbers solve problems involving addition, subtraction, multiplication and division use their knowledge of the order of operations to carry out calculations involving the four operations

Fractions & Decimals

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
recognise, find and name a half as one of two equal parts of an object, shape or quantity recognise, find and name a quarter as one of four equal parts of an object, shape or quantity	recognise, find, name and write fractions ½, ¼, 2/4, & ¾ of a length, shape, set of objects or quantity recognise the equivalence of one half = two quarters write simple fractions for example, ½ of 6 = 3	count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing 1-digit numbers or quantities by 10 recognise, find and write fractions of a discrete set of objects: unit fractions and nonunit fractions with small denominators recognise and use fractions as numbers: unit fractions and nonunit fractions with small denominators recognise and show, using diagrams, equivalent fractions with small denominators compare and order unit fractions, and fractions with the same denominators add and subtract fractions with the same denominator within one whole (for example 1/7 + 5/7= 6/7) solve problems that involve all of the above	count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten recognise and show, using diagrams, families of common equivalent fractions add and subtract fractions with the same denominator add and subtract fractions with the same denominator and denominators that are multiples of the same number multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number recognise and write decimal equivalents of any number of tenths or hundredths recognise and write decimal equivalents to $\frac{1}{4}, \dot{\frac{1}{2}}, \frac{3}{4}$ round decimals with one decimal place to the nearest whole number compare numbers with the same number of decimal places up to two decimal places solve simple measure and money problems involving fractions and decimals to two decimal places	identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (for example, ⅖ + ⅘ =⅚ = 1 ⅕) compare and order fractions whose denominators are all multiples of the same number read and write decimal numbers as fractions (for example, 0.71 = 71/100) recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents round decimals with two decimal places to the nearest whole number and to one decimal place read, write, order and compare numbers with up to three decimal places recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal solve problems which require knowing the percentage and decimal equivalents of $\frac{1}{2}, \dot{\frac{1}{4}}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25	use common factors to simplify fractions; use common multiples to express fractions in the same denomination compare and order fractions, including fractions > 1 add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions multiply simple pairs of proper fractions, writing the answer in its simplest form $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$ divide proper fractions by whole numbers $\frac{1}{3} \div 2 = \frac{1}{6}$ identify the value of each digit in numbers given to three decimal places associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8] recall and use equivalences between simple fractions, decimals and percentages, including in different contexts