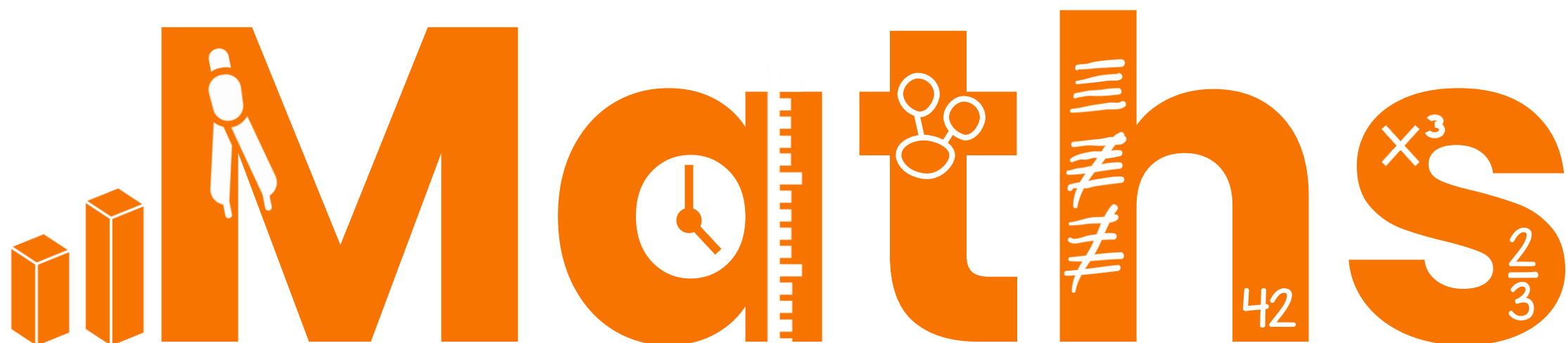


ST MARY'S, WELHAM GREEN



ALPHA

“Creating resilient and passionate mathematicians,
who will flourish for the future”

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**“The only way to learn
mathematics is to do
mathematics.”**

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- Paul Halmos -

“Creating resilient and passionate mathematicians, who will flourish for the future.”

At St Mary’s, we have created a dynamic and inclusive mathematics curriculum that embraces the **C**oncrete-**P**ictorial-**A**bstract (**CPA**) mastery approach, empowering our children to develop a deep conceptual understanding of mathematical concepts and apply them confidently in real-life situations.

Our vision is to foster a love of maths across the school by nurturing our children’s curiosity, thinking skills and self-belief. Our mastery approach allows **all** children to develop as resilient and passionate mathematicians, who will flourish for the future.

Much of our Mathematics curriculum is drawn from HfL Education’s **ESSENTIAL** maths to ensure a coherent and consistent sequence of content to support sustained progression over time. Other elements have been written by staff and advisors based on these sequences. We thank all of them for their role in bringing our curriculum together.

Key Principles of Our Curriculum

Concrete Experiences:

We believe in providing our children with hands-on learning experiences, using manipulatives, real-life objects, and interactive activities to enable them to explore mathematical concepts in a tangible and meaningful way. By engaging in concrete experiences, children build a solid foundation of mathematical understanding before moving to more abstract representations.

Pictorial Representations:

We recognise the importance of visual representations in enhancing children's comprehension and retention of mathematical concepts. Our curriculum incorporates a variety of pictorial tools, such as diagrams, charts, and models, to help children visualise and make connections between concrete and abstract ideas. These representations support children in developing mental imagery and deeper conceptual understanding.

Abstract Reasoning:

Our curriculum emphasises the gradual transition from concrete and pictorial representations to abstract thinking. We encourage children to move beyond specific examples and apply their understanding to solve problems in more generalised contexts. Through regular practice and guided instruction, children develop the ability to think critically, make logical connections, and reason abstractly, enhancing their problem-solving skills.

Scaffolded Instruction: We recognise that each child has unique learning needs and abilities. Our mastery approach, using **CPA**, allows all children, at various stages of mathematical understanding, to access their learning. By tailoring instruction to individual needs, we foster a positive learning environment that values each child's progress and achievements.

Immediate Intervention: If a child fails to grasp a concept or skill, this is identified quickly and gaps in understanding are addressed systematically to prevent them falling behind.

Real-World Connections: We believe that mathematics is not just a theoretical subject but a practical tool for navigating the world. Our curriculum emphasises the application of mathematical concepts in real-life contexts, encouraging children to identify and solve authentic problems. By making connections between mathematics and everyday experiences, we aim to instill a sense of relevance and empower children to become confident mathematical thinkers and problem solvers.

The Non-Negotiables

We teach daily maths lessons based on the sequences and steps of **ESSENTIAL**maths. In addition, at least four fluency sessions are taught a week using HfL Education's fluency resources

In the Classroom -

- Children are taught through whole-class interactive teaching, enabling all to master the concepts necessary for the next part of the curriculum sequence.
- In a typical lesson, the teacher leads back and forth interaction (ping-pong style), including questioning, short tasks, explanation, demonstration, and discussion, enabling children to think, reason and apply their knowledge to solve problems.
- Children are active learners, engaging with material using concrete manipulatives and individual whiteboards for pictorial or abstract interaction.
- Use of precise mathematical language enables all child to communicate their reasoning and thinking effectively.
- If a child fails to grasp a concept or procedure, this is identified quickly, and gaps in understanding are addressed systematically to prevent them falling behind.
- Lesson design links to prior learning to ensure all can access the new learning and identifies carefully-sequenced steps in progression to build secure understanding.
- Examples, representations and models are carefully selected to expose the structure of mathematical concepts and emphasise connections, enabling children to develop a deep knowledge of mathematics.
- It is recognised that practice is a vital part of learning, but the practice must be designed to both reinforce children's procedural fluency and develop their conceptual understanding.

Working Walls -

- Working Walls that support children are in every classroom and engaged with regularly.
- Flipchart paper with models from current learning and mathematical vocabulary are displayed.
- A relevant number line will be on or above KS1/LKS2 boards.
- We'd expect to see a PV Chart (Year group specific)
- Working walls are not wallpaper, they are an interactive resource that will help with scaffolding and giving children independence.
- <https://www.hfleducation.org/blog/4-ways-make-your-maths-working-wall-work>

The Non-Negotiables

Presentation –

- Every child has a yellow, squared paper maths book (large square up to Year 1/ small from Year 2)
- These are labelled at the start of the year and children are explicitly taught presentation expectations.
- Children write/underline the short date, the number of the sequence and title of the step.
- If more than half a page is remaining, children are taught to underline their previous work and write the new date/sequence/step underneath.
- With destination questions, children draw a small one/two square flag with the destination question number inside.
- We ask teachers to carefully consider where a worksheet is needed and when it is better for children to record for themselves.
- In lessons where children have explored mathematical concepts through concrete resources a small sticker is used to evidence this.
- See appendices for examples of presentation.

Marking & Feedback –

- Children who work with an adult will have GG or T written next to the work in purple pen.
- We encourage teachers to use live marking techniques (as an aid to AfL) and at the end of a lesson to look through work to see where children need support and/or challenge – work is acknowledged with a single purple tick. Written feedback is not required.
- Where adults provide immediate intervention, they can simply write VF in purple pen.
- Where children are making corrections, they are encouraged to use green pen.

Staff Training-

- Staff training for maths takes place regularly, at least once a term.
- Teachers continually develop their specialist knowledge for teaching maths, working collaboratively to refine and improve their teaching.
- The Maths Subject Leader works with HfL Education partners to further their own development and that of the subject.

Year 1 Maths Overview

Autumn		Spring		Summer	
1 week	1 Geometry – Positional Language Including Ordinal Numbers	2 weeks	15 Measures – The Language of Comparing Length, Height, Mass and Speed 16 Sequencing Events – Days of the Week and Months of the Year	2 weeks	26 Multiplication and Division – Equal or Unequal Groups and Remainders 27 Multiplication – Repeated Addition and Arrays (number of groups & size of group) 28 Multiplication – Problem Solving (identifying the number of groups and size of the group)
2 weeks	2 Numbers to Ten – Finding Patterns in Numbers (including subitising) 3 Numbers to Ten – Counting and Comparison (more, less, fewer)	2 weeks	17 Numbers to Twenty – Adding using ‘Think 10’ 18 Numbers to Twenty – Subtraction using ‘Think 10’	1 week	29 Multiplication – Scaling and Counting in 2s to 24
1 week	4 Numbers to Ten – Estimating and Ordering 5 Numbers to Ten – Regrouping the Whole	2 weeks	19 Numbers to Twenty – Equality and Balance 20 Numbers to Twenty – Part or Whole Unknown	1 week	30 Division – Sharing and Grouping Problems
2 weeks	6 Numbers to Ten – Part Whole Addition and Subtraction	2 weeks	21 Numbers to Twenty – Language and Problem Solving (part or whole unknown) 22 Numbers to Twenty – Comparison (difference, more, less, fewer) including Statistics	1 week	31 Time – Telling the Time, O’clock and Half Past
2 weeks	7 Numbers to Ten – Solving Problems Using Part or Whole Unknown 8 Numbers to Ten – Comparison	1 week	23 Measures – Coins and Combinations to 20p, Ordering and Comparing	1 week	32 Fractions – Sharing Into Equal Groups
1 week	9 Numbers to Ten – Equality and Balance	1 week	24 Counting in 2s, 5s 10s.	1 week	33 Fractions – Equal or Unequal Parts of Shape
2 weeks	10 Numbers to Twenty – Making 10 and Some More 11 Numbers to 20 – Estimating and Ordering, 1 More and 1 Less	1 week	25 Measures – Non-standard Measures and Introducing Simple Standard Measures	1 week	34 Fractions – Of Continuous Quantities Including Capacity
1 week	12 Numbers to Twenty – Doubling and Halving 13 Numbers to Twenty – Odd and Even Numbers			1 week	35 Numbers to Twenty – Review
1 week	14 Geometry – Names and Properties of 2-D and 3-D Shape			2 weeks	36 Numbers to One Hundred – Place Value and Digits, Making Tens and Some More 37 Place Value – Estimation, Ordering and Comparison

* Timings are suggested

Year 2 Maths Overview

Autumn		Spring		Summer	
2 weeks	1 Securing Fluency to Twenty	2 weeks	14 Statistics – Totalling and Comparing Amounts in Block Graphs, Pictograms, Tables and Tally Charts	2 weeks	28 Fractions – Finding Halves, Quarters and Thirds of Amounts 29 Fractions – Finding Halves, Quarters and Thirds of Shapes 30 Fractions – Finding Three-Quarters of Shapes and Amounts
2 weeks	2 Place Value – Making Tens and Some More 3 Place Value and Regrouping Two-Digit Numbers 4 Counting On and Back in Ones and Tens from any Number	2 weeks	15 Written Addition Method 16 Commutativity in Addition but not in Subtraction 17 Written Subtraction Method	2 weeks	31 Fractions – Equivalence 32 Fractions – of Continuous Quantities.
1 week	5 Representing, Ordering and Comparing Numbers to 100 and Quantities for Measures 6 Estimation and Magnitude	1 week	18 Problem solving with Addition and Subtraction in a Range of Contexts	1 week	33 Time – Telling the Time to the Nearest 5 Minutes
2 weeks	7 Numbers to 20 – Mental Addition and Subtraction 8 Finding Complements of 10 and 100 Including Measures	1 Week	19 Time – Telling the Time: O'clock, Half Past, Quarter Past and Quarter To 20 Time – Estimating, Ordering and Comparing Time	2 weeks	34 Problem Solving for all Operations (including fractions)
2 weeks	9 Add and Subtract Numbers Mentally Using 1- and 2-Digit Numbers	1 week	21 Double and Halve One and Two-digit Numbers and Amounts of Money 22 Times Tables – 2s, 5s and 10s. Patterns and Strategy (counting in 3s)	1 week	35 Multiplication and Division – Equality and Balance
1 week	10 Finding Part or Whole Unknown	2 weeks	23 Multiplication – Multiples and Repeated Addition 24 Multiplication – Number of Groups, Group Size and Product 25 Multiplication Problem Solving	1 week	36 Geometry – Properties of 2D and 3D Shape, Classifying and Sorting 37 Geometry – Symmetry
1 week	11 Money – Making Combinations and Finding Change 12 Comparison (difference, more, less, fewer) 13 Measures – Estimation and Measure Using Different Scale	2 weeks	26 Division – Sharing and Grouping 27 Division – Sharing and Grouping Problems including Remainder	2 weeks	38 Mental Calculation Review 39 Geometry – Sequencing 40 Geometry – Rotation and Right Angles
				1 week	41 Place Value and Written Calculation Review

* Timings are suggested

Year 3 Maths Overview

Autumn		Spring		Summer	
1 week	1 Place Value and Regrouping 2 Counting On and Back in Ones, Tens and Hundreds	2 weeks	16 Multiplication – 3, 4 and 8 Times Tables including Counting 17 Division – 1, 2, 3, 5, 4 and 8 Times Tables 18 Multiplication – Strategy, Associative and Distributive Laws	2 weeks	27 Division Problem Solving – Sharing and Grouping 28 Division – Two and Three-Digit Numbers by One-Digit Numbers including Halving
2 weeks	3 Estimation, Magnitude and Rounding 4 Measures – Comparison, Estimation and Magnitude	1 week	19 Statistics – Pictograms and Scaled Bar Charts	1 week	29 Multiplication, Division and Fractions – Scaling and Correspondence Problems
3 weeks	5 Mental Fluency – Addition 6 Mental Fluency – Subtraction 7 Fact Families and Applying the Inverse	1 week	20 Multiplication and Division Worded Problems	1 week	30 Division – Long Division
3 weeks	8 Written Addition 9 Written Subtraction 10 Problem Solving – Worded Problems	1 week	21 Fractions – Finding Fractions of Discrete and Continuous Quantities	2 weeks	31 Time – Hours, Minutes, Seconds, Days, Weeks, Months, Years 32 Time – Telling the Time (Analogue and Digital) and Estimation 33 Time – Duration
1 week	11 Statistics – Interpreting Bar Charts and Tables	3 weeks	22 Ordering and Comparing Fractions 23 Adding and Subtracting Fractions with the Same Denominators 24 Fractions – Problem Solving with Unit and Non-Unit Fractions	2 weeks	34 Securing the Four Operations with Whole Number including Problem Solving
2 weeks	12 Angles, Right Angles and Estimation 13 Perpendicular and Parallel Lines, Vertical and Horizontal Lines	2 weeks	25 Multiplication – Multiplying Multiples of Ten 26 Multiplication – Formal Written Multiplication	2 weeks	35 Place Value and Decimals – Ten Times Greater and Ten Times Smaller 36 Place Value and Decimals – Regrouping 37 Place Value and Decimals – Estimation, Comparing and Rounding
1 week	14 2-D Shape – Properties and Drawing			1 week	38 Measures – Measuring and Problem Solving
1 week	15 Perimeter Including Problem Solving Using Written and Mental Methods			1 week	39 3-D Shape – Building and Identifying Properties

* Timings are suggested

Year 4 Maths Overview

Autumn		Spring		Summer	
2 weeks	1 Place Value – Order and Compare Numbers Beyond 1000 2 Rounding, Estimation and Magnitude	1 week	14 Properties of Shape 15 Symmetry	1 week	26 Time – Read, Write Calculate and Convert Time on Analogue and Digital 12- and 24-Hour Clocks
1 week	3 Securing Addition and Subtraction Mental Fluency 4 Securing Formal Written Addition and Subtraction Fluency	2 weeks	16 Decimal Numbers 17 Calculating With Decimals	1 week	27 Statistics – Interpret and Present Continuous and Discrete Data, Solve Problems incorporating Measures
2 weeks	5 Counting in Multiples of 6, 7, 9, 25 and 1000 6 Multiplication and Division Facts (Times Tables)	2 weeks	18 Measure – Money 19 Problem Solving involving Decimals to Two Decimal Places	1 week	28 Roman Numerals to 100 and Zero 29 Negative Numbers – Counting through Zero and Calculating in Context
1 week	7 Factor Pairs, Integer Scaling and Correspondence Problems	2 weeks	20 Add and Subtract Fractions with the Same Denominator 21 Finding Fractions of Quantities 22 Fractions in the Context of Measure	1 week	30 Geometry – Angles 31 Geometry – Properties of Triangles
1 week	8 Problem Solving Including Measures to Apply Place Value, Mental Strategies and Arithmetic Laws	1 week	23 Equivalent Fractions, Ordering and Comparing	1 week	32 Geometry – Coordinates in the First Quadrant and Translations 33 Geometry – Position and Direction, incorporating Angles and Plotting Points of a Shape
3 weeks	9 Multiply and Divide a One or Two-digit Number by 10 and 100 10 Measure – Conversion of Units 11 Measures – Compare, Estimate and Calculate	3 weeks	24 Multiply Two and Three-digit Numbers by a One-digit Number Using a Formal Written Layout 25 Divide Two and Three-digit Numbers by a One-digit Number Using a Formal Written	2 weeks	34 Multiplication and Division Review
1 week	12 Discrete and Continuous Data (Time Graphs), Including Application of Scales and Division			1 week	35 Area
1 week	13 Perimeter			3 weeks	36 Fractions Review 37 Application and Problem Solving – Developing Operation Sense

* Timings are suggested

Year 5 Maths Overview

Autumn		Spring		Summer	
2 weeks	1 Place Value and Rounding of Large Numbers 2 Interpret Negative Numbers	1 week	16 Problem Solving – All Four Operations	2 weeks	29 Formal Methods for Division and Multiplication in Increasingly Complex Problems 30 Strategies for Multiplication and Division (Mental and Written)
1 week	3 Place Value of Numbers with up to Three Decimal Places	1 week	17 Multiply Fractions by Whole Numbers 18 Fraction Problem Solving	1 week	31 Solving Problems involving Scaling by Simple Fractions and Rates
3 weeks	4 Multiply and Divide by 10, 100 and 1,000 5 Properties of Number – Multiples, Factors and Common Factors 6 Prime and Composite Numbers	2 weeks	19 Measure – Converting Units of Measure	1 week	32 Conversion of Imperial and Metric Units of Measure
1 week	7 Multiply and Divide Mentally 8 Solve Problems Involving Knowledge of Key Facts	2 weeks	20 Area 21 Volume and Capacity	1 week	33 Fractions, Decimals and Percentages Problem Solving
1 week	9 Add and Subtract Using a Range of Strategies	2 weeks	22 Percentages 23 Problem Solving – Percentages	1 week	34 Reading Timetables and Calculating with Time
1 week	10 Add and Subtract Using Formal Written Methods	1 week	24 3-D Shapes from 2-D Representations 25 Reflection and Translation	1 week	35 Solve Problems involving the Four Operations
2 weeks	11 Formal Written Method for Multiplication 12 Formal Written Method of Short Division	2 weeks	26 Perimeter 27 Estimate, Compare, Measure and Draw Angles 28 Identify Unknown Angles	2 weeks	36 Distinguish between Regular and Irregular Polygons 37 Use Properties of Rectangles
3 weeks	13 Equivalent Fractions 14 Compare and Order Fractions 15 Adding and Subtracting Fractions			2 weeks	38 Statistics – Solve Comparison, Sum and Difference Problems using Information in a Line Graph 39 Statistics – Interpreting and Evaluating Information Presented in Charts and Tables
				1 week	40 Roman Numerals

* Timings are suggested

Year 6 Maths Overview

Autumn		Spring		Summer	
2 weeks	1 Place Value 2 Multiply and Divide by 10, 100 and 1,000	1 week	16 Order of Operations and Algebra	1 week	29 Statistics – Calculate and Interpret Mean Average 30 Application of Previous Years' Learning
1 week	3 Choosing Effective Mental Calculation Strategies	1 week	17 Formal Written Method for Long Division	1 week	31 Application of Known Facts and Calculation Strategies
1 week	4 Problem solving with Four Operations 5 Application of Factors, Multiples and Primes	1 week	18 Exploring Relationships Between Perimeter and Area	Any remaining time before SATs should be used to consolidate key learning	
3 weeks	6 Equivalent Fractions 7 Comparing and Ordering Fractions 8 Adding and Subtracting Fractions	2 weeks	19 Recognise and Find Angles 20 Reflection and Translation	2 weeks	32 Constructing Pie Charts
3 weeks	9 Fraction and Decimal Equivalents 10 Fractions, Decimals and Percentages 11 Calculating Percentages	2 weeks	21 Multiplying Fractions 22 Dividing Fractions 23 Fraction Problem Solving	2 weeks	33 Statistical Representations
1 week	12 Formal Written Method of Multiplication	1 week	24 Ratio and Proportion	1 week	34 Further Algebra
1 week	13 Area of Parallelograms and Triangles	1 week	25 Volume 26 Measures	2 weeks	35 Financial Maths and Enterprise
1 week	14 Formal Written Method of Short Division	1 week	27 Statistics – Interpret Line Graphs and Pie Charts	1 week	36 Maths Preparation for KS3
1 week	15 Properties of Shape	1 week	28 Algebra and Sequences		

* Timings are suggested

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Arithmetic is being
able to count up to
twenty without taking
off your shoes. //

- **Mickey Mouse** -

The Big Idea

All children will benefit from the regular rehearsal and building of mathematical fluency: securing and embedding learning; moving learning from working memory into long term memory; and allowing children to make links/connections.

Our fluency sessions are designed for teachers to use four times a week for 10–15 minutes, in the classroom to:

- rehearse core learning which has been previously taught, keeping it fresh over time
- increase the “facts at the fingertips”, including base facts such as multiplication tables
- provide access to the age-related curriculum
- develop language and reasoning to secure understanding with sufficient depth

In the Classroom

The focus of sessions is on fluency with learning which has previously been taught. Fluency sessions are designed to be;

- led by the teacher, with the class
- in addition to the daily maths lesson
- broadly pitched at age-related expectations, with some pre-teaching, where appropriate
- covering up to five areas during each session

We use sentence stems and vocabulary lists to develop precise mathematical language during fluency sessions and to form a consistent backbone of language for explanation and reasoning across the school.

The sessions are designed to promote teacher-led and peer-to-peer discussion, using the speaking frames, sentence stems and linked vocabulary, alongside visual models. Small Whiteboards are used, where appropriate, to enable children to participate and also to develop pictorial and/or abstract recording linked to concepts, as long as pace is maintained.

Fluency KS1 Overview

Year 1 Autumn

Sequence link

Ordinal numbers and position	1LS1
Regrouping the whole within 10	1LS2/5
Calculating within 10	1LS6
Consecutive number to 10, including 1 more and 1 less	1LS3/4
Comparison and finding the difference	1LS8
Equality	1LS9
Teen numbers – ten and some more	1LS10

Year 2 Autumn

Sequence link

Equality and inequality	2LS1
Regrouping flexibly and unitising	2LS2/3
Magnitude of number	2LS6
10 more and 10 less	2LS4
Rebalancing for equal difference	2LS7/9
Rebalancing for equal sum	2LS7/9
Combinations of coins	2LS11

Year 1 Spring

Sequence link

Days of the week, months of the year and the seasons	1LS16
Regrouping the whole within 10 and then 20	1LS7/20
“Think 10” for addition	1LS17
“Think 10” for subtraction	1LS19
Comparing measures	1LS15
Ten and some more – comparison and difference	1LS11/22
Value of coins	1LS23

Year 2 Spring

Sequence link

Measurements and scales	2LS13
Statistics	2LS14
Expanded written addition	2LS15
Expanded written subtraction	2LS17
Skip counting in multiples of 2, 5, 10 and 3	2LS22
Multiplication	2LS23/24/ 25
Telling the time	2LS19

Year 1 Summer

Sequence link

Counting in 2s, 5s and 10s	1LS24
Multiplication – repeated addition, arrays and problems	1LS27/28
Telling the time	1LS31
Equal or unequal groups	1LS26/32/ 33
Finding halves and quarters of quantities	1LS32/33
Count, read and write numbers to 100 and find one more and one less.	1LS36

Year 2 Summer

Sequence link

Division and multiplication fact families	2LS26/27
Fractions of quantities	2LS28/29/ 30
Durations of time	2LS20
Problem solving for all operations – strategy talk	2LS34
2D and 3D shapes and their properties	2LS36/37
Position and direction	2LS40

Fluency LKS2 Overview

Year 3 Autumn	Sequence link
Place value and regrouping with 3-digit numbers	3LS1
Estimation and number magnitude with numbers up to 1000	3LS3
Use the value of digits to compare and order numbers up to 1000	3LS3
Mental addition and subtraction, including strategy choice	3LS5/6
Written addition and subtraction beginning with revisiting methods learnt in Y2	2LS41 3LS8
Rehearsing taught multiplication and division facts for 2s, 5s and 10s	2LS27
Properties of 2-D shapes	2LS40 3LS12/14

Year 3 Spring	Sequence link
Formal written and subtraction	3LS8/9
Linking multiplication and division using arrays	3LS17/18
Base-60 rehearsal in preparation for time	3LS31/32
Telling the time with increasing accuracy	2LS33
Mental addition and subtraction	3LS5/6
Find fractions of an amount	2LS28 3LS21
Identify horizontal, vertical and pairs of perpendicular and parallel lines	3LS13

Year 3 Summer	Sequence link
Properties of 2-D and 3-D shapes	3LS14/39
Multiplying multiples of 10	3LS25
Halving 2- and 3-digit numbers	3LS27/28
Perimeter	3LS15
Compare and order fractions	3LS22
Add and subtract amounts of money to give change, using both £ and p in practical contexts	2LS11/ 3LS34
Scaling and correspondence problems	3LS29

Year 4 Autumn	Sequence link
Ordering and comparing numbers beyond 1000	4LS1
Estimation and number magnitude with numbers	4LS2
Rounding to the nearest 10, 100 and 1000	4LS2
Mental addition and subtraction strategy choice	4LS3
Formal written addition and subtraction	4LS4
Count in multiples of 6, 7, 9, 25 and 1000 and rehearse previously taught times tables	4LS5
Time – revision from Y3	3LS31

Year 4 Spring	Sequence link
Multiplication and division using regrouping strategy	3LS26 4LS24/25
Multiplication and division by 10 and 100	4LS9
Understand the place value of decimal amounts	4LS16
Recognise and use factor pairs	4LS7
Compare and classify geometric shapes	4LS14/15
Compare and order fractions, using benchmarks	4LS23
Estimate, compare and calculate different measures, including money	4LS18

Year 4 Summer	Sequence link
Adding and subtracting fractions	4LS20
Solving integer and correspondence scaling problems	4LS7
Calculating with decimals	4LS17
Counting backwards and through zero, to include negative numbers	4LS29
Multiply two-digit and three-digit numbers by a one-digit number using formal written layout	4LS24
Identifying angles and comparing them to right angles	4LS30
Coordinates – describing positions on a 2-D grid and describing movements between positions as translations.	4LS32/33

Fluency UKS2 Overview

Year 5 Autumn	Sequence link
Estimation and number magnitude with larger numbers	5LS1
Rounding – to nearest 10, 100, 1000 with 4-digit numbers and building to rounding to nearest 10, 100, 1000 with any number	4LS2 5LS21
Secure recall of multiplication and division facts up to 12×12	4LS6
Find and/or recall factor pairs	4LS7
Efficient strategies for addition and subtraction	5LS5 4LS3/4 5LS9/10
Properties of shapes with a focus on triangles	4LS31

Year 5 Spring	Sequence link
Multiplication mental strategies	5LS7
Add and subtract fractions	5LS15
Multiply and divide by 10, 100 and 1000	5LS4
Mental and written multiplication and division strategies	5LS7/11/12
Read, write and convert time – Y4 revision	4LS26
Roman Numerals – Y4 revision	4LS28

Year 5 Summer	Sequence link
Understanding decimals as part of our number system	5LS3
Prime numbers and other properties of numbers	5LS5/6
Calculating missing angles	5LS28
Finding percentages of a number	5LS22/23
Converting between metric units (and time units)	5LS19
Multiplying proper fractions and mixed numbers	5LS17

Year 6 Autumn	Sequence link
Multiplying and dividing by 10, 100 and 1000	5LS4 6LS2
Estimation and number magnitude with large numbers	6LS1
Mental and written strategies for multiplication and division	5LS7/11/12
Revision of language and properties of lines	3LS13 5LS36
Understand and recall square and cubed numbers	5LS21
Revision of Roman numerals	5LS40
Multiplying and dividing by 10, 100 and 1000	5LS4 6LS2

Year 6 Spring	Sequence link
Rounding numbers	5LS1 6LS1
Factors, multiples and primes	6LS5
Ordering fractions	5LS14 6LS7
Percentages of amounts	6LS11
Area of rectangles, triangles and parallelograms	5LS20 6LS13

Year 6 Summer	Sequence link
Algebra and using simple formulae	6LS16
Name parts of a circle and calculate radius or diameter from given information	6LS15
Multiply simple pairs of proper fractions	6LS21
Imperial units and their metric equivalents	5LS33 6LS26
Multistep worded problems, including calculating with money	6LS31 6LS36
Describe positions in all four quadrants on a coordinate grid, translate simple shapes on the coordinate plane, and reflect them in the axes	6LS20

Barriers To and Solutions for Engagement, Progress and Achievement

	Hearing Impairment	Visual Impairment	Dyspraxia (fine/ gross motor)	Memory/ processing	ASC	ADHD	Cognition	SEMH
Barriers identified by SENCo/Class teacher	<ul style="list-style-type: none"> Difficulty hearing explanation/ instruction 	<ul style="list-style-type: none"> Difficulty reading Qs Difficulty seeing the modelled examples Tracking Difficulty reading q's, seeing shaded areas, seeing dashed lines 	<ul style="list-style-type: none"> Difficulty recording and drawing Difficulty managing and using a range of resources to complete tasks Difficulty organising oneself 	<ul style="list-style-type: none"> Amount of vocab Recalling methods Space between instruction and task 	<ul style="list-style-type: none"> Noise and movement- over stimulation sharing equipment amount of vocab 	<ul style="list-style-type: none"> Waiting and frustration Turn taking Maintain attention Recording 	<ul style="list-style-type: none"> Understanding of process, lang Retention/ application of number knowledge to task Recording Vocabulary 	<ul style="list-style-type: none"> Attitude towards maths Fear of failure
Solutions Identified by subject co-ordinator	<ul style="list-style-type: none"> CPA approach- concrete materials Pre-teaching Clear worked examples Vocab lists Sentence stems/speaking frames Written/ visual instruction/ explanation signing training for staff 	<ul style="list-style-type: none"> CPA approach- concrete materials Enlarged resources Adapted equipment Larger squares in books Audio instructions External advice Coloured overlays 	<ul style="list-style-type: none"> CPA approach- concrete materials Alternative ways to record Adapted equipment Now and next boards/123 boards/sequencing board 	<ul style="list-style-type: none"> CPA approach- concrete materials Written/visual instructions Clear worked examples Well-considered transitions Audio instructions Computer/ipad access Sentence stems/speaking frames Now and next boards/123 boards/sequencing board 	<ul style="list-style-type: none"> CPA approach- concrete materials Own set of equipment Sufficient quiet space Well planned transitions – i.e., between carpet and desk Visual instruction Worked examples Now and next boards/123 boards/sequencing board 	<ul style="list-style-type: none"> CPA approach- concrete materials Sufficient quiet space Well planned transitions – i.e., between carpet and desk Visual instruction Worked examples Now and next boards/123 boards/sequencing board 	<ul style="list-style-type: none"> CPA approach- concrete materials Word/definition bank Sufficient quiet space Well planned transitions – i.e., between carpet and desk Visual instruction Worked examples Sentence stems/speaking frames 	<ul style="list-style-type: none"> CPA approach- concrete materials Written/visual instructions Clear worked examples Computer/ipad access Sentence stems/speaking frames Now and next boards/123 boards/sequencing board

- **Clarity of instruction, explanations and modelling are crucial**
- **Ensure that the most important aspect of learning is made clear – cognitive load theory is relevant for all pupils with SEND both in terms of what pupils see and hear and are expected to learn. Use the teacher guides to see the essential disciplinary and substantive knowledge that all children need.**
- **For many pupils with SEND, it is the recording of the content rather than the content itself which provides the greatest level of challenge in lessons, and this should be addressed in the planning and preparation for lessons**

Assessment in Maths

Formative assessment through AFL is our go-to method of immediate and regular analysis of how children are progressing throughout a learning step or sequence.

Summative assessment occurs three times per year (at the end of each term), using **HfL's diagnostic tests**. These termly tests are used in conjunction with the learning sequences and steps and, therefore, only test the content that has been taught. Tests are expected to be completed in small groups, with the teacher present, to pick up on any common misconceptions that may arise. Once completed, teachers record the children's responses onto the electronic mark book, where it identifies common gaps in knowledge and understanding.

What next?

The diagnostic tests and mark book aim to support teachers to identify strengths and weaknesses of the class, as well as where fundamental learning has not fully been secured or where misconceptions need addressing for groups and individuals. The aim is to support the teacher when thinking about how they will address the gaps and misconceptions, as well as maintaining strengths over the coming terms.

As the multiple-choice questions have been specifically designed to identify misconceptions, teachers are provided with suggested pre-teaching activities from previous sequences and draw attention to these in upcoming **ESSENTIAL** maths sequences. The teacher can then consider how they will intervene with individual children, small groups or the whole class. This may be by incorporating rehearsal into Fluency sessions, pre-teaching, the use of a skilled adult with a small group or a focused intervention.

Original diagnostic question



1. 1 less than 5

A 4 B 3

C 5 D five

Further check questions

Show me one less than 9.

	Possible gap	Upcoming sequences	Recommended pre-teaching
A	Correct response		
B	Insecure counting backwards	1LS18, 19, 20 and 22	Regular counting back from a given number.
C	Language error	1LS18, 19, 20 and 22	Finding missing numbers in sequences that go backwards in ones.
D	Miscounts	1LS18, 19, 20 and 22	



Table showing:

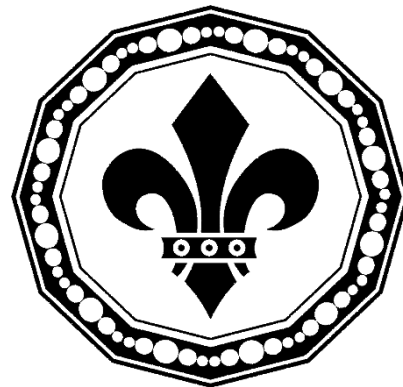
- Possible gap linked to the response.
- Prime sequences where pre-teaching may be valuable.
- Learning from previous sequences for pre-teaching (possibly including references to earlier year groups)

Complete the sequence

6, 7, 8, 9, 10



Suggested teachers' questions to expand or explore further.



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