

Maths

INTENT – To what do we aspire for our children?

- Vision - Design - Aspirations for our curriculum

Our Vision

'We are a Family of Friends who LEARN together.'

Our Goal

Our vision for excellence within our maths curriculum is created in line with the National Curriculum Programme of Study and ensures 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.

Our intention is to:

- engage, inspire, motivate, support and challenge
- ensure our learners progress academically and become more expert as they progress through the curriculum
- develop successful, informed, engaged, thoughtful, confident learners, who make a positive contribution to the community and society both now and in the future.

Our Values & Curriculum Drivers At Hove Learning Federation, history is driven by the following values:						
	Love of Learning	 Staff will always model a passion for maths to inspire and enthuse the children to develop a love of the subject. Planning uses a creative, cross-curricular approach, including whole school maths days. Our lesson design model builds on previous learning and encourages self-belief, curiosity, excitement and motivation, with a focus on building connections and making learning worthwhile and relevant. Mathematical reasoning is woven into every lesson and pupils are given opportunities to work with challenge partners. 				
	Equality, Diversity & Inclusion	 Learning is scaffolded for all through - use of manipulatives, dual coded vocabulary, pre-teaching, stem sentences and guided group work. Use of high quality materials and tasks to support learning are integrated into lessons. These may include visual images and concrete resources. Children are encouraged to reflect on their own learning styles using the school's learning characters. Children collaborate with their talk partners/challenge partners or in larger groups. Children are encouraged to take risks and learn from their mistakes. 				
	Aiming High	 Speaking and listening skills and core mathematical vocabulary are explicitly taught. A range of opportunities are provided, both planned and incidental, for children to revisit, apply and extend speaking and listening skills. Interactive teaching strategies are used to engage all pupils in order to develop effective communication skills. Mathematical vocabulary is supported in Reception and KS1 with the use of Makaton signs, hand gestures and dual coded symbols. 				

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A famil	y of	friends



ر ب ب ب ب	Respect Well-bei	and		 Key questions are planned to challenge thinking and develop learning for all pupils. Children are required to prove their answers and explain their reasoning. Characters and visual prompts are used to support younger children with this. Contexts and representations are carefully chosen to develop reasoning skills and to help pupil's link concrete ideas to abstract mathematical concepts. Our pupils have opportunities to develop their resilience and confidence in mathematical learning through investigations and maths games. Pre-teaching and well-chosen challenge partners are used to support maths anxiety. Staff model positive language through constructive feedback and praise pupils working respectfully together. Pupils use sentence stems to respectfully challenge ideas such as "I disagree with because" 					
(P)	Nurture Citizensl	Maths is linked to real-life where appropriate, to develop future life skills and give the learning context. Iurture and itizenship							
Our Curriculum Design									
Equity	Inclus	ion	Learning Behaviours	Personal Development	Skills	3	Knowledge and	Creative and critical	Cultural Capital
ŤÍĹ				(Å)	87		Understanding	thinking	
Equality of opportunity. All children to succeed no matter their entry point.	Every c whate indivic abilitie needs equa value	child, ever ir dual es or 5, is Ily ed.	Attitudes and attributes for learning and life.	Equip children to become global citizens, who live happy and healthy lives and know how to achieve their goals.	Curriculur mapped t include th subject specific ski required t attain and excel. Child develop learning t learn skill such as metacogniti	m io ne ills to d ren is ion.	Deep learning of the key concepts of our curriculum and the National Curriculum.	Both are nurtured. Children are challenged to question, reason and express themselves.	ls a golden thread, woven through everything we do to teach children well.
	Learning Characteristics Animals								
Underpinning	Hove Lear	ning Fed Pe	eration's curr	iculum are our le	earning chara	cteristi	ic's animals.	Co-or	peration
Independence Persev									



	Maths Long Term Sequence Features							
Sequencing	Small Steps	Spiral	Long Term Memory	Making New Links	Cognitive Load	Key Concepts	Substantive and Disciplinary Knowledge	
Our curriculum design deliberately sequences units of learning from EYFS to Year 6 to ensure children deepen their mathematical understanding through exposure to a progression of substantive and disciplinary knowledge.	Learning is chunked into small steps that allow children to build knowledge and deepen understanding lesson to lesson, unit to unit and year to year.	The spiral design of our curriculum means children will return to key learning points and concepts. For example, the Part Whole model is introduced in EYFS and developed in KS1 to support knowledge of number bonds to 100. By the end of KS2 pupils use the same model to explore parts and wholes with decimals.	The progression of knowledge in maths has been clearly mapped across each year group to ensure children will transfer new learning to long term memory. The ultimate goal is to make the learning stick!	The acquisition of knowledge into long term memory means that children are able to make links with new learning more easily. Our curriculum overview shows how new learning is carefully imparted over time.	Our long- term sequence for maths reduces cognitive load by mapping out opportunities for children to review previous years and units learning. All staff are aware of the units and lessons covered in previous years in order to refer back.	Children develop knowledge about key concepts through our CPA (concrete, pictorial, abstract) approach.	Substantive Knowledge The subject knowledge and explicit vocabulary used to learn about the content. Disciplinary Knowledge about how mathematic ians investigate, explore and reason.	



Purpose of the Sequence

Progression

All children are supported to develop and improve their mathematical skills. We follow the EYFS Statutory Framework (Development Matters) and the Key Stage 1 and Key Stage 2 National Curriculum to ensure that children have the necessary mathematical understanding that will underpin future learning

Why do we have a long-term sequence? What is its purpose?

- There is a coherent and comprehensive conceptual pathway through the mathematics.
- Learning is broken down into small, connected steps, building from what pupils already know.
- Difficult points and potential misconceptions are identified in advance and strategies to address them planned.
- Our spiral curriculum is designed on the principles of instruction and is influenced by our understanding of how the memory works and cognitive load theory.
- Research shows that this will ensure knowledge is transferred to long term memory and making links with new learning is more accessible.

EYFS:

Mastering Number forms the basis of our learning in Early Years. Through daily whole class teaching with an emphasis on modelling language, gestures and representations pupils develop number sense, confidence and flexibility with number. Guided teaching activities deepen pupils' understanding and teachers expertly guide, scaffold and stretch learners. A stimulating learning environment with well-chosen high quality resources enable children to continue to develop their understanding independently.

KS1/KS2:

Learning is carefully sequenced following the National Curriculum objectives for each year group. Learning is broken down into small steps and lessons offer opportunities to revisit and connect to prior learning through the lesson design.

HLF Long Term Plan Example

Our curriculum starts in EYFS and ends in Y6. Our long-term plans include the unit, concept question, substantive concepts and small step, lesson by lesson progression.

	Maths Term by Term Coverage 2023 - 2024						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	
	7 weeks	7 weeks	6 weeks	6 weeks	6 weeks	7 weeks	
YR	Bears, Bears,	Bears	I need a Hero!	Great adventures	Out of the Egg	Splish! Splash! Splosh!	
	On-entry/ baseline assessments 3 weeks Wk 4- Subitising up to 3 Wk 5- Counting, Cardinality and Ordinality. 1:1 correspondence Wk 6- Composition of numbers to 4 Wk 7- Subitising up to 5	Wk 1- Comparison more/fewer Wk 2- Counting, Cardinality, Comparison- up to5 Wk 3- Comparison- comparing groups of obj Wk 4- Composition- intro part/ whole Wk 5- Composition- composing and decomposing numbers into parts and whole (up to 5) Wk 6- Counting- abstract counting Wk 7- Pattern- intro and recoe.	Wk 1- Subitising patterns within 5 Wk 2- Countingverbally to 20, obj to 10 Wk 3/4- Composition missing numbers and intro no bonds to 5 Wk 5 - Comparison equal and unequal sets Wk 6- Measures comparing length	wk 1- Countingcounting to 20 and beyond Wk 2-Comparison- ordering numbers to 8 Wk 3- Composition- concept of 5 and a bit Wk 4- Subitising- introduce doubles Wk 5- Comparison- odd/ even Wk 6- Measures- comparing weight/mass	Wk 1- Subitising- conceptual to 10 Wk 2- Comparison- odd/even Wk 3- Composition- of numbers up to 10 Wk4- Counting teen numbers Wk 5- Composition- adding 2 groups Wk 6- 2D shape	Splosh! Wk 1- assess/review- subitising Wk 2-ass/rev-Recall no. Facts Wk 3- Deepening understanding of number bonds to 10 Wk 4- ass/rev- patterns within numbers Wk 5- Comparison- ordering numbers to 10 Wk 6- Counting to 30 and beyond Wk 7- 3D shape	



HLF Subject Progression Ladders

Our Subject Leads created our Subject Progression Ladders to ensure the National Curriculum is taught step by step. They illustrate the progression of skills, knowledge and vocabulary taught through EYFS, Key Stage 1 and Key Stage 2. Breaking down the National Curriculum objectives allows our teachers to plan for progression and provide all of our learners with the small steps they need. Identifying knowledge and skill progression in this way enables our teachers to plan an ambitious and effective spiral curriculum through the key stages which results in long term learning. Subject and Year Leads use the Subject Progression Ladders to design and plan assessments and for monitoring. They illustrate the progression of skills, knowledge and vocabulary taught through EYFS, Key Stage 1 and Key Stage 2.

Coverage 2023 – 2024								
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Place Value	 ✓ 	1	✓	 ✓ 	✓	✓	 ✓ 	 ✓
Addition &	✓	1	 ✓ 	 ✓ 	✓	\checkmark	1	✓
Subtraction								
Multiplication			\checkmark	 ✓ 	1	✓	 ✓ 	✓
& Division								
Fractions		✓	✓	 ✓ 	✓	✓	✓	 ✓
Decimals						✓	√	 ✓
Fractions,						✓	 ✓ 	✓
Percentages								
and Decimals								
Ratio and								✓
Proportion								
Algebra								 ✓
Measurement	✓	 ✓ 	 ✓ 	 ✓ 	 ✓ 	\checkmark	\checkmark	1
Geometry	✓	 ✓ 	 ✓ 	×	1	✓	 ✓ 	 ✓
Statistics			\checkmark	 ✓ 	1	\checkmark	1	1

	Place Value							
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Number ELG: Have a dec number to composition Subitise (rg without coll automatic reference) Automatic reference or other ai 10, includi Numerical Patterns Verbally coll recognizin counting so Compare Coll different coll when one than, or le as another Explore an within num including eduble fac quantities evenly.	ep understanding of 10, including the on of each number. ecognise quantities uniting) up to 5. ally recall (without to rhymes, counting ds) number bonds to ng double facts. 5EIG: ount beyond 20, g the pattern of the ystem. upantities up to 10 in ontexts, recognising quantity is greater ss than or the same rquantity. d represent patterns nbers up to 10, ivens and odds, ts and how can be distributed	Year 1 Year 2 By the end of Year 2, pupils should be taught to: count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward • recognise the place value of each digit in a two-digit number (tens, ones) • identify, represent and estimate numbers using different representations, including the number line compare and order numbers from 0 up to 100; use and = signs • read and write numbers to at least 100 in numerals and in words • use place value and number facts to solve problems.		By the end of Ye should be Count in m and 1000 find 1000 given num count back to include tecognise each digit number (t tens, and d order and beyond 10 identify, re estimate m different r round any nearest 11 solve num problems above and large posit read Roma to C) and H the numer	ar 4 (LKS2), pupils a taught to: nultiples of 6, 7, 9, 25 more or less than a ber wards through zero negative numbers the place value of in a four-digit housands, hundreds, ones) compare numbers too present and numbers using epresentations number to the , 100 or 1000 ber and practical that involve all of the with increasingly ive numbers an numerals to 100 (I snow that over time, al system changed the concept of zero value.	By the end of Yee should be read, write numbers u determine digit count forw in steps of any given r 000 round any required d use negati context, ar across zerc solve num problems t above. read Roma (M) and re written in l	ar 6 (UKS2), pupils taught to: , order and compare p to 10 000 000 and the value of each 'ards or backwards powers of 10 for number up to 1 000 whole number to a egree of accuracy ive numbers in id calculate intervals ber and practical that involve all of the in numerals to 1000 <u>cognise</u> years Roman numerals
Counting	Recite numbers past 5. Say one number for each item in order: <u>1.2.3.4.5</u> .	Count objects, actions and sounds. Link the number symbol to its cardinal number value.	Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number.	Count in steps of 2, 3 and 5 from 0, and in tens from any number, forward and backward.	Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number.	Count in multiples of 6, 7, 9, 25 and 1000. Count backwards through zero to include negative numbers.	Count forwards of backwards in steps of powers of 10 for any given number up to 1 000 000. Count forwards and backwards	



HLF Calculation Policy

Our in-depth calculation policy is shared with all stakeholders.



EYFS

Maths in EYFS is taught using the Mastering Numbers Programme from NCETM. In Development Matters, Mathematical Development is taught into strands: Number and Numerical Patterns. Children are introduced to a mastery approach to mathematical learning. By providing frequent and varied opportunities to build and apply this understanding – such as using manipulatives, including small pebbles and tens frames for organising counting – children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics, look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.



Substantive Knowledge

This is the subject knowledge and explicit vocabulary used to describe the past and the established facts that are central to this subject.

Golden Thread – 3D Curriculum

Curriculum Drivers & Substantive Concept Mapping

Our curriculum drivers (see above) and our maths substantive concepts (see below) are the 'golden thread' running through our maths curriculum.

Children learn abstract concepts through meaningful examples and repeated encounters in different contexts across the curriculum. This explicit planning supports children to transfer their knowledge across the curriculum and use it to frame future learning.

This supports our work towards a 3D curriculum that promotes remembering. Our 3D curriculum is designed so that knowledge is built upon term by term, year by year and between topics across a variety of year groups. This enables our children to gain and retain more knowledge and understanding.

	Maths 3D Curriculum							
Vertical Links	Horizontal Links	Diagonal Links						
Concepts deliberately constructed	Links between subjects, commonly	Concepts connected across both year						
within a subject that are encountered	known as cross-curricular, or themed	groups and across subjects (for						
across year groups from EYFS to Y6 (for	(for example, the concept of parallel	example, the concept of money is						
example, the concept of part-part-	lines is taught in Y5 and later used	taught across a range of year groups						
whole models (representation and	within art when drawing beach huts	and is later used specifically within						
structure) is introduced in EYFS and	using a vanishing point)	Year 6 budgeting PSHCE lessons)						
built upon in every year following.)								
\uparrow	\longleftrightarrow							

Teaching for Mastery - The 5 Big Ideas

The NCETM have defined 5 substantive concepts that are the suggested vehicle to teach mathematics through a mastery approach.

Fluency	Representation and Structure	Variation	Mathematical thinking	Coherence
Knowing key mathematical facts	Accessing ideas	Procedural variation	Chains of reasoning	Detailed curriculum sequencing supports
Thinking flexibly	Communicating concepts	Conceptual variation Making connections	Applying maths to problems	all to progress
Making connections	Making connections		Making connections	

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Substantive Knowledge									
	Fluency & Facts								
	LUC L								
	ا تخبر ا								
Pupils will become fluent in the func-	lamentals of mathematics, including throu	gh varied and frequent practice with							
	apply knowledge rapidly and accurately.	erstanding and the ability to recall and							
Number Facts	Times Tables	Symbols							
+ 0 1 2 3	x 1 2 3 4 5 6	× •							
0 0+0 0+1 0+2 0+3	1 1 2 3 4 5 6	~ -							
$\begin{array}{c} 1 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\ 2 \\$	2 2 4 6 8 10 12	+ -							
3 3+0 3+1 3+2 3+3	3 3 6 9 12 15 18	•							
Children will become fluent in number	Children will become fluent in number Children will know their times tables								
facts such as number bonds, doubles	facts such as number bonds, doubles up to 12x12 by the end of Y4. These								
primes etc.	mathematical learning (fractions, ratio,								
	algebra, statistics)								

Procedural Knowledge (Methods)

Children need to know specific methods (both mental and written) and be able to apply these skills with any numbers. Methods include: partitioning, number lines, column method, short multiplication, long multiplication, short division.

The calculation policy outlines the routines for teaching methods alongside staff CPD and parent/carer workshops with a focus on written method for addition, subtraction, multiplication and division.



Disciplinary Knowledge – Thinking as a Mathematician							
The children are taught these disciplinary concepts within all domains of mathematics across all year groups.							
Justifying and Proving	Reasoning	Problem Solving					
	\sum						
Pupils use their deep mathematical understanding to prove that statement is true or false. Sentence stems such as: 'I know because', 'This cannot be right because', 'I know that' support their explanations.	Pupils can reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.	Pupils 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.					
Using and Applying	Investigating	Analysing					
Pupils solve problems of increasing complexity (i.e. where the approach is not immediately obvious), demonstrating application beyond the original context.	Pupils explore and investigate mathematical contexts and structures, communicate results clearly and systematically explain and generalise the mathematics.	Analysing data through statistics embeds other mathematical areas such as addition and subtraction, develops mathematical thinking and help pupils see the clear links to science, particularly the 'working scientifically' objectives.					

This is how our children learn how to be successful mathematicians and achieve our intent.

I am a Hove Learning Federation mathematician because...

- I demonstrate quick and efficient recall of facts and procedures
- I am a mathematical thinker, who reasons and solves problems
- I feel confident using mathematical vocabulary
- I can make connections in my learning to new ideas and within the world around me
- I can describe, explain and represent mathematical concepts in a variety of ways

Local Knowledge, Enrichment & Cultural Capital

Local knowledge and community

At HLF, we value the importance of our local community.

Enrichment

We provide enrichment opportunities that can happen inside or outside of the school but that complement classroom instruction. The aim is for our children to try new and varied activities that help to develop character, resilience, and motivation, and that encourage our children to pursue their interests and become lifelong learners. We know that enrichment activities can empower children to develop skills, discover passions, and foster a well-rounded education. **Cultural Capital**

These are the opportunities such as trips, visits, local walks and interactions with members of our local community that our woven through our curriculum that give children the essential knowledge needed to be educated citizens that have an appreciation of how human creativity and achievement in the past has, and continues to, influence our lives.





For a full overview refer to Whole School Overview 23-24.

At the core of our classroom practice is the concrete, pictorial and abstract approach which uses physical and visual aids to build a child's understanding of abstract topics. Pupils are introduced to a new mathematical concept through the use of concrete resources (e.g. fruit, Dienes blocks etc). When they are comfortable solving problems with physical aids, they are given problems with pictures – usually pictorial representations of the concrete objects they were using. Then they are asked to solve problems where they only have the abstract i.e. numbers or other symbols. Building these steps across a lesson can help pupils better understand the relationship between numbers and the real world, and therefore helps secure their understanding of the mathematical concept they are learning.

See below example from our Calculation Policy:

	Addition Y2+						
Objective & Strategy	Concrete	Pictorial	Abstract				
Adding multiples of ten	50 = 30 + 20	3 tens + 5 tens = tens 30 + 50 =	20 + 30 = 50 70 = 50 + 20 $40 + \Box = 60$				



Pedagogy											
Key Principles for Effective Teaching & Learning at Hove Learning Federation											
High expectations	teaching	teaching behavio		environme	ent Quality of Instruction						
	÷==										
Inspire, support and challenge	Layered modelling to ensure access for all children	Subject know maste	vledge and Effective ery questioning a feedback		e Making it stick' - and transferring knowledge to long-term memory						
\$ \$ \$ \$ \$		``C _`									
Key The	Key Theories & Evidence Based Research to design lessons and units										
Below are the key theories and research that underpin our approach to pedagogy and guide our curriculum design. They are used to promote high quality teaching and used in staff CPD to develop strategies that ensure consistency of standards and pedagogical understanding.											
Sweller's cognitive loa	d Rosenshine's pri	nciples of	Cain an	d Oakhill's	Maslow's Hierarchy of Needs						
theory		on S			Self- actualization Esteem needs Social Needs Safety Needs Physiological Needs						
Fiorella and Mayer's	Ebbinghaus' forge	tting curve	Interleaving and		Bloom's Taxonomy						
	Depending of real				Creating Evaluating Analyzing Applying Understanding Remembering						
Retrieval Practice	Bruner's Spiral C	urriculum	Pupil B	ook Study	Education Endowment Foundation Education Endowment Foundation						

Assessment

Assessment opportunities are continuous and form a key part of our teaching and learning. Formative assessment opportunities are planned in throughout our lesson model (see examples below). Summative assessment – opportunities are planned in at the end of units and the end of the year.

Examples of in class formative assessment opportunities							
Deliberate practice and rephrasing of	liberate practice Cumulative quizzing d rephrasing of within the learning		Retrieval and recall	Explaining and challenge partner talk			
taught content	sequence						
å→P		$\boxed{\cdots}$	$\overline{\mathbf{r}}$	\odot			
8→P 8→P		र्युत					
Self and peer	Teacher feedback and	Diagnostic	Higher order	Summarising and			
assessment	summaries	questioning	thinking and exit	Ouestion from the			
		A [®] A		sequence			
Rephrasing and	Key vocabulary use	Professor Prove It	Deep Diver and	Lesson to lesson, unit			
thinking out loud	and application	19. × ×	Submarine	to unit, term by term,			
			challenges	end of year feedback			
		<u> </u>		6			

Mapping and Planning – 7 Lenses

Alex Bedford's Pupil Book Study approach to quality assuring the curriculum helps us to evaluate curriculum structures, teaching methods, pupil participation and response through a dialogic model. When undertaking these tasks, we ask the following key questions:

- How well do our children remember the content that they have been taught?
- Do books and children discussions radiate excellence?

Does learning 'travel' with our children and can they deliberately reuse it in more sophisticated contexts? To ensure our monitoring is thorough and targeted, we identify what is helping and hindering by looking at structure and participation (see table below).

Pupil Book Study 7 Lenses							
STRUCTURE PARTICIPATION							
Content and Knowledge	Teaching Sequence	Vocabulary	Explanation and Modelling	Tasks	Questioning and Retrieval	Feedback	





Lesson Structure/Model

Learning Model: The Enacted Curriculum

To ensure constant quality-first teaching across the curriculum we have developed the Hove Learning Federation Learning Model. As illustrated in our visual guide below, each stage of the model has been carefully crafted on the most up to date evidence based research. It is a model designed to give enable all children to:

- Revisit prior learning from previous lessons and linked units from past terms and years.
- Make links with this learnt knowledge and new learning.
- Access new learning through skilled teacher modelling.
- Apply new understanding and skills with partner and independent work.
- Experience challenge at their level.
- Review the learning for that day and be guided to see how their understanding has deepened.

Teachers do not make assumptions about children's understanding but use a range of Assessment for Learning strategies to adjust lesson content and pace so that they are delivering the right knowledge and skills for the children they have in front of them. Learning is scaffolded to be inclusive to all and brain breaks and partner talk keep the learning engaging, accessible and challenging. Higher order questioning is used to guide children to make links and encourage considered thinking. Staff receive regular CPD on each element of the Learning Model. Areas for development are pinpointed through monitoring and targeted for improvement.



Environment and Resources

We utilise a wide range of high-quality images and diagrams within the teaching resources we provide for our children. These are carefully designed and dual coded to minimise cognitive overload and allow each child access to their learning in the most inclusive way. Wherever possible we use inspiring images, that can be zoomed in on to explain difficult concepts and images that spark discussion and challenge thinking. The use of all resources is modelled carefully by teachers so that every child knows how to succeed in each lesson.



Enrichment Opportunities

Our maths curriculum allows us to ensure that cultural capital and enrichment opportunities extend the curriculum offer for all pupils.

These events can include:

- Whole school maths days where children engage in themed activities related to a given stimulus e.g. Let the Adventure Begin
- Fluency days *Time Tables Rock Stars* used as a driver for the development of number fluency with a focus on times tables

Where possible we develop children's skills of practical maths through cross-curricular opportunities:

- measurement/reading scales (Y3: Biscuit making, Y4: Bread making, Y6: Baking apple pies)
- ratio (Y6: WWII Rock cakes)
- symmetry in art (Y2 Rangali patterns, Y5 natural art)
- music composition (music notation)
- data handling (Y6 Science Heart rate experiment, Y4 Geography reading climate graphs, Y2 Computing)
- time/timelines (History)

Diversity and Identity across the Maths Curriculum

Throughout our planning and curriculum mapping, we celebrate the diversity within our community and the wider world and develop confidence in individual identity. We promote equality through the use of images and names of characters that reflect the nature of the school's pupils. Additionally, we ensure that there is a balance of gender representation within our slides and that no one gender is depicted as solving mathematical problems more effectively than another.

SEND & Inclusive Learning

We adapt the curriculum to meet the needs of all our children so that everyone can access the learning, build on their prior knowledge, and understand the skills needed to become mathematicians. We do this by:

Q	-Identifying the CRITICAL CORE CONTENT that pupils with SEND need to know and use.
	-CHUNKING knowledge and knowledge notes/models in manageable sections.
	-Teachers use structured RESPONSIVE FRAMEWORKS (including the use of stem sentences and sentence stems) to promote hard thinking
	-Teachers use structured DELIBERATE PRACTICE to increase attention and retention.



	-Pupils with SEND are entitled to think hard. We use structured CHALLENGE FRAMEWORKS to
1 9 1	promote hard thinking, drawing on the content, including explain the word connections and
	sequenced thinking paths
2.4	
	• Dual coding (using CIP and symbols from the Noun Project) is used to pre-teach tier 2 and 3
	vocabulary and is included on all lesson slides, core knowledge files and knowledge strips in Key Stage
	2, and all activity sheets in Key Stage 1.
	· Higher level challenge partners and talking trios are used to ensure children with SEN and or EAL are
	provided with high quality talk and modelled language of history skills.
	• Activities ensure children with SEN or FAL can access tasks appropriately and share their
	understanding of historical concepts.
()~~))	
	Differentiation and coeffeigle are included where enprenziets to enable access to learning and ensure
	· Differentiation and scarlous are included where appropriate to enable access to learning and ensure children make at least expected progress
_ ''' 	
	• Pictures and quotes are taken from children with SEN and or EAL to ensure evidence is recorded in
66 99	books and on The Portal (EYFS)
	EEE 5. A Day approaches (strategies are reviewed and incorporated into our lessons
	- EEF 5-A-Day approaches/strategies are reviewed and incorporated into our ressons 1 – explicit instruction 2 – cognitive and metacognitive strategies 3 – scaffolding 4 – flexible
	grouping, 5 – using technology
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The Maths No Problem SEND jigsaw is a driver for our provision:





CPD

Professional development is at the core of our teaching practice. Our Maths Team has a wealth of experience and pedagogical understanding. Both of our Maths Leads are Mastery Specialists who lead training on teaching and learning for schools in Brighton and Hove. The wider team is made up of highly skilled leaders who are part of the Sustaining Mastery network and have up to date training from the Sussex Maths Hub.

Teachers have termly Maths CPD led by specialists in the field to ensure that our teaching practice is in line with the latest research and all members of staff are upskilled to deliver engaging, high quality lessons with strong subject knowledge. ECTs have additional training sessions with the Maths Team to support their subject knowledge. They have opportunities to observe members of the team and discuss their personal development in maths. Support staff meetings are used to work with our Learning Support Assistants and Individual Needs Assistants on unpicking methods and understanding the progression of skills from EYFS to Year 6.

Impact – How do we know our curriculum is effective? Evidencing the standards of Teaching and Learning

In order to identify the impact our curriculum is having on our pupils, we check the extent to which learning has become permanently embedded in children's long-term memory in addition to looking for excellence in their outcomes. At HLF, we use a number of tools to quality assure the implementation and impact of our curriculum such as:

- Pupil Book Studies (Subject Reviews & Shallow Splashes)
- Subject Meetings
- Subject analysis & Action plans
- Formative and Summative Assessment
- Learning observations/drop ins (subject lead, year/phase lead and SLT)
- CPD for all staff
- Governors
- Recent successes
- Next steps

Hove Learning Federation Impact

Children leave Hove Learning Federation as deeply knowledgeable and skilful learners who can set targets and believe in themselves to achieve them. They understand how to be socially, morally, spiritually and culturally responsible and aware. They are able to make positive contributions to the local and wider community and strive to be the best that they can be.

Learning Behaviours	Emotional	Names and expresses emotions Manages impulses of personal behaviour	Shows price in successes	Social	Focuses on learning in class Attentive to directions, listening to the teacher	Shows empathy and appreciates diversity	Cognitive	Organises time and space for own learning Sets goals and monitors own progress	Talks purposefully with peers, valuing other opinions
Attitudes to Learning	Love of Learning and lifelong learners	Positive	Curious and Inquisitive	Independent	Able to work in teams	Motivated and Hardworking	Resilient	Proud	Ready for secondary school
Quality of Education	Evidence of learning	Attainment	Progress	Skills, knowledge and understanding	Personal Development	Relationships between pupils and staff	Learning atmosphere and environment	Professional Development	School Improvement



Pupil Book Studies – Subject Reviews & Shallow Splashes					
lip/PowerPoint and planning look	 Planning for small steps Progress and learning over time Knowledge and skills based Child centred, active learning Consistency with the use of the HLF Learning Model across year groups and sites 				
Book Look	 Shows progress of knowledge and skills Shows development of learning and understanding Demonstrates a clear sequence of learning High expectations, consistency and pride in work 				
Pupil Voice	 Use precise vocabulary Show a deep understanding of the learning Are enthusiastic about their learning Talk through the learning sequence Highlight how the learning builds lesson to lesson and unit to unit 				

At HLF, we have created our own monitoring systems that incorporate the key principles from the Pupil Book Study (see 'Implementation'). They are called Subject Reviews and Shallow Splashes. Through this form of monitoring, we quality assure each subject by carrying out:

- 1) Learning walks subject teams and SLT support teaching and learning and record positives and good practice to share and inspire
- Flip/PowerPoint and planning looks to check planning & resources meet the needs of all of our learners. We check against our lesson model, Rosenshine's Principles of Instruction and the key theories & research that underpin our teaching philosophy
- 3) Book looks to check for incremental small steps, sequencing, task design, scaffolds, personalisation, knowledge & skill progression, vocabulary, access, support & challenge
- 4) Pupil voice to discuss the learning and see the subject through the eyes of the child. Part of our questioning is designed to assess the impact of our lessons, that they provide enjoyment, that children can articulate their learning with key vocabulary and that learning is 'sticking' in the children's long-term memory

Findings from our monitoring systems are categorised into positives and next steps. These can be specific to year group, to key stage or whole school (across the 3 sites). To ensure next steps are acted on, subject and year teams identify actions and assign responsibility. This monitoring feeds into our subject analysis and action plans (see 'Subject analysis and Action plans' below).

Subject Meetings

Subject team meetings are timetabled regularly throughout the year. Time is set aside during staff meetings, INSET days and yearly meetings with SLT. The aims of these meetings are to:

- Review current practise and impact
- Set targets, identify actions, and create plans
- Discuss the latest research and evidence to ensure our subjects are up to date and plans are in place to progress
- Work towards our school key priorities
- Give time to professional development and to offer support to our teachers



Subject Analysis & Action Plans

Each subject has an action plan for the academic year to monitor change and progress across a variety of objectives and goals within multiple areas (e.g., student, classroom, professional development, etc.). Using our school key priorities as a guide, our teams review and RAG their subjects throughout the year and set new targets each term. Each target is a story arc that shows how a subject leader has identified a next step, actioned it and reviewed the impact so that subject development is continuous and effective.

Each subject team uses the table below to reflect, plan, set actions, assess impact and discuss next steps.

What did you notice?	Action	Intended Impact	Responsibility	Ву	Evidence for
(Why did you set this target?)	(What will you do?)	(What will this look like?)		when	Monitoring

Formative and Summative Assessments

Our assessment structures are designed to ensure that our children will know more, remember more and be able to do more. A mixture of formative and summative assessments allows us to evaluate if our curriculum helps or hinders the goal of achieving persistent change in the long-term memory of our children.

Formative Assessment

We assess formatively throughout each lesson using our learning model (see 'Implementation' section). This tool ensures each lesson is planned and delivered to maximise assessment opportunities. Teachers use this information to support, challenge and adapt the learning.

Each subject assesses in a range of different ways (see 'Implementation' section).

Summative Assessment

Our curriculum is a progressive, spiral model. Teachers use deliberate summative assessment to measure if children are making progress as they journey through the curriculum. The range of summative assessment methods that teachers use build a picture of children's understanding of:

- Content and knowledge
- Use of vocabulary
- Ability to access the curriculum and thrive

All information gained from assessments are used to tailor, target and adapt future planning, teaching and learning.