WEST HOVE INFANT SCHOOL
A family of friends

Computing
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 computing curriculum is created in line with the National Curriculum Purpose of Study and aims to provide:

- A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world.
- Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems.
- The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming.
- Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content.
- Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

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.

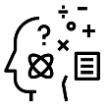
Our Values & Curriculum Drivers
At Hove Learning Federation, computing is driven by the following values:

	**Love of Learning**	• Enjoy immersive learning opportunities that aim for children to experience the joys of technology • Inspire children's curiosity and understanding of technology in their lives • Develop children's secure understanding of safe internet usage • Develop children's skills of enquiry through the investigation of coding, algorithms, data inputting and digital media • Encourage children's ability to think critically, reflect, debate and evaluate the truth of media they see online • Embrace the art of presentation to develop a confidence in communicating their ideas and learn from the research of others • Encourage thinking about how technology has changed over time and why • Computing lessons focus on collaboration and creativity by providing extended periods of time to work independently and with others to solve problems and develop the knowledge and skills to be computational thinkers
	**Equality, Diversity & Inclusion**	• Support children to be proud of their personal heritage and how this links to global citizenship online • Enable children to safely make personal connections using technology • Foster a sense of identity and an increased understanding of children's own position in their community and the world • Provide equal access to technology irrespective of a child's background • Provide children with the skills they need for the future workplace and as active participants in a digital world

	**Aiming High**	• Build their answers to big questions sequentially. • Be reflective and analytical of material online • Evaluate the effectiveness of technology to develop an understanding of how it can be effectively applied • Discuss the impact technology has had on the wider world • Inspire children to attain high standards by introducing purposefully chosen, aspirational leaders of the technology industry
	**Respect and Well-being**	• Online safety is integrated throughout the computing curriculum • Children learn how to use technology safely and respectfully • Children work collaboratively to problem solve
	**Nurture and Citizenship**	• Children learn skills which are central to living in and understanding our digitally enriched world • Develop a sense of belonging online to be a positive citizen • Understand how developments in technology have affected their own community on a local, national and global scale

Our Curriculum Design

Meet the needs of every child across the whole curriculum

Equity 	**Inclusion** 	**Learning Behaviours** 	**Personal Development** 	**Skills** 	**Knowledge and Understanding** 	**Creative and critical thinking** 	**Cultural Capital** 
Equality of opportunity. All children to succeed no matter their entry point.	Every child, whatever their individual abilities or needs, is equally valued.	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.	Curriculum mapped to include the subject specific skills required to attain and excel. Children develop learning to learn skills such as metacognition	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.	Is a golden thread, woven through everything we do to teach children well.

Learning Characteristics Animals

Underpinning Hove Learning Federation's curriculum are our learning characteristic's animals.

Independence	**Perseverance**	**Curiosity**	**Imagination**	**Co-operation**
				

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Computing 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 computing knowledge and 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, in KS1 our sequence guides children to develop an understanding that machines follow instructions, using Beebots to explore this in Year 2. They then develop this further in KS2.	The progression of knowledge in computing 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 computing 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 in computing which allow them to create, store, organise, manipulate and retrieve digital content.	**Substantive Knowledge** The subject knowledge and explicit vocabulary used to learn about the content. **Disciplinary Knowledge** The knowledge about how programmers code, and use algorithms to achieve an objective. It is through disciplinary knowledge that children become able to think like a programmer.

Purpose of the Sequence Progression

Our curriculum is sequenced in line with the EYFS Statutory Framework (2021), Development Matters (2021), the National Curriculum for Computing (2013) and the National Centre for Computing Scheme of Work.

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

- It is our intention for children to deepen their digital literacy knowledge and understanding over time through thoughtfully sequenced exposure to a progression of substantive and disciplinary knowledge.
- 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.
- The EYFS computing curriculum introduces young learners to fundamental digital skills through hands-on exploration. Children develop mouse skills to navigate digital environments and create images using basic drawing tools. They engage with technology to support learning across different areas, fostering curiosity and confidence. Early programming concepts are introduced through control activities and

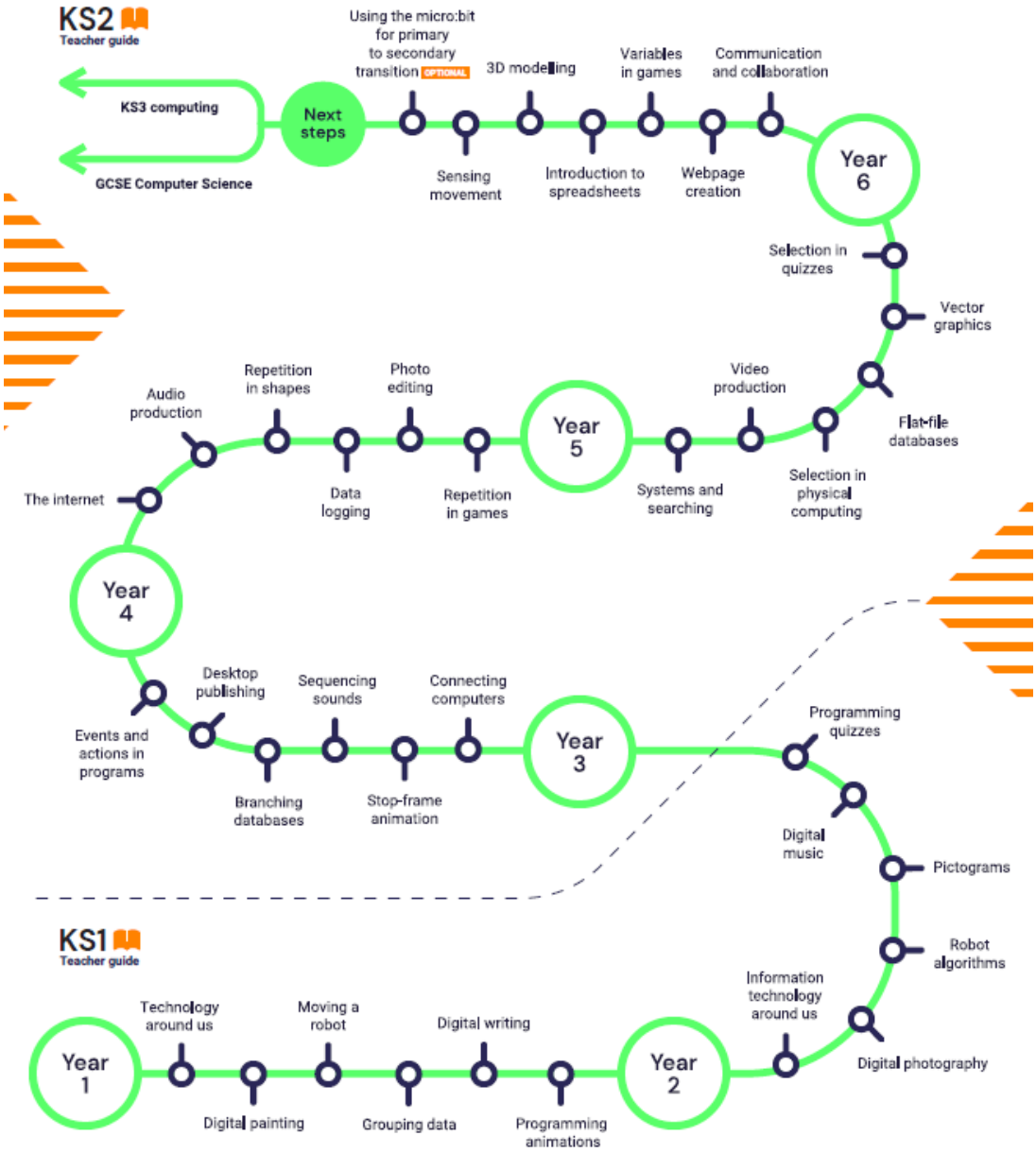
directional programming, helping children understand cause-and-effect relationships. Additionally, they explore digital media, using devices to capture and interact with multimedia content. These activities build foundational digital literacy, problem-solving, and creative expression, preparing children for further technological learning.

- The Year 1 computing curriculum introduces students to fundamental digital skills, helping them recognize, use, and control technology responsibly. They explore digital tools through activities such as digital painting, writing, and data grouping, comparing digital and traditional methods. Students develop problem-solving skills by writing simple algorithms for floor robots and programming animations to enhance storytelling. These experiences build confidence in using technology, encourage creativity, and lay the groundwork for computational thinking and responsible digital practices.
- The Year 2 computing curriculum focuses on identifying information technology in the world and understanding its responsible use. Students develop computational thinking by creating and debugging programs, using logical reasoning to predict outcomes. They explore digital music by composing rhythms and melodies on a computer. Data handling skills are introduced through collecting and organizing information into pictograms. Students also gain experience in digital photography, capturing and editing images for different purposes. Additionally, they design interactive quizzes, using events to trigger sequences of code. These activities enhance digital literacy, creativity, and problem-solving skills, preparing students for further technological learning.
- The Year 3 computing curriculum expands students' digital skills by introducing them to stop-frame animation, where they capture and edit digital images to create animated stories. They develop programming skills by sequencing sounds in a block-based language and writing algorithms that use events to trigger actions. Data handling is further explored through branching databases, helping students classify objects using yes/no questions. Desktop publishing teaches them to create documents by modifying text, images, and layouts for specific purposes. Additionally, students learn about digital device connectivity, understanding how inputs, processes, and outputs work together to form networks. These activities enhance problem-solving, creativity, and digital literacy, preparing students for more advanced computing concepts.
- The Year 4 computing curriculum deepens students' understanding of digital technology by exploring the internet as a network of networks, including the World Wide Web, and evaluating online content. Students develop audio production skills by capturing and editing audio to create podcasts while considering copyright. They enhance their programming knowledge through text-based coding, using count-controlled loops to draw shapes, and block-based coding to implement repetition in games. Data logging is introduced, enabling students to recognize why and how data is collected over time through investigations with data loggers. Additionally, they refine their digital creativity by manipulating and editing images, reflecting on their impact and intended purpose. These activities foster critical thinking, creativity, and problem-solving skills, supporting their progression in computing.
- The Year 5 computing curriculum enhances students' understanding of IT systems and their role in enabling internet searches. They develop data management skills by using flat-file databases to organise and analyze data, creating charts to answer questions. Video production introduces planning, capturing, and editing techniques to produce short films. Students explore vector graphics, using layers and grouped objects to create digital images. Physical computing is introduced through programmable microcontrollers, where students explore conditions and selection. Additionally, they apply selection in programming by designing and coding interactive quizzes. These activities strengthen logical thinking, digital creativity, and problem-solving skills, preparing students for advanced computing concepts.
- The Year 6 computing curriculum focuses on advanced digital skills, fostering collaboration and problem-solving. Students explore how data is transferred by working collaboratively online. They develop web design skills, creating webpages while considering copyright, aesthetics, and navigation. Programming knowledge is expanded through variables in game design, enhancing interactivity. Spreadsheet use is introduced, enabling students to organize and analyse data effectively. They engage in 3D modelling, planning and developing digital representations of physical objects. Additionally, students explore physical computing by designing and coding projects that capture inputs from physical devices. These

activities refine critical thinking, creativity, and technical proficiency, preparing students for future digital challenges.

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.



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. An example can be found below:

Plain text = Curriculum Expectations (please **DO NOT** change or delete these), *Italic = Additional WHIS/HJS*

	Year R (Computing)		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Nursery	Reception						
	By the end of Reception: There are Computing ELG or statements in the EYFS however the computing we teach in school is supporting children in other areas of the EYFS and providing skills to access an increasingly digital world.		**By the end of KS1:** In Year 1 and 2 computing, students develop foundational programming and problem-solving skills through sequencing, predicting outcomes, and debugging. They learn to match commands to results, give and follow clear instructions, and experiment with movement commands to control devices and robots. They explore algorithms by planning and testing sequences, recognizing patterns, and using different programming tools to achieve similar outcomes. Through designing projects, selecting sprites, backgrounds, and programming blocks, they create and refine digital designs while debugging and improving their work. These skills foster logical thinking, creativity, and an understanding of how computers follow instructions to complete tasks.		**By the end of Lower Key Stage 2:** In Year 3 and 4 computing, students expand their programming knowledge by exploring Scratch, text-based coding, and loops. They learn that objects in Scratch have attributes, recognize commands as blocks, and create programs by typing commands. They design and test algorithms, use count-controlled loops, and modify code to achieve specific outcomes. Through sequencing, repetition, and event-driven programming, they refine their ability to predict, debug, and improve programs. They make design choices, incorporate sound and movement, and evaluate the effectiveness of their code. By reusing and adapting existing code snippets, they develop logical thinking and problem-solving skills in coding projects.		**By the end of Upper Key Stage 2:** In Year 5 and 6 computing, students develop more advanced programming skills, including working with microcontrollers, variables, loops, and selection statements. They learn to create circuits, program LEDs, and control multiple outputs using loops. They explore variables as placeholders for data, modifying them through conditions and user input. By implementing selection statements (if...then...else), they control program flow and create interactive projects. They design, test, debug, and refine programs, considering real-world applications and improving efficiency. Through experimentation with different inputs, debugging strategies, and structured program design, they enhance their ability to create, evaluate, and share sophisticated coding projects.	
Programming A and B **Y1 Programming A: Moving a robot** **Y1 Programming B: Animations** **Y2 Programming A: Robot Algorithms** **Y2 Programming B: Programming quizzes**	*Copy the actions of others to operate simple equipment and toys*	*Help adults operate equipment around the school, independently operating simple equipment*	-I can match a command to an outcome - I can predict the outcome of a command on a device - I can run a command on a device	-I can choose a series of words that can be enacted as a sequence - I can follow instructions given by someone else - I can give clear instructions	-I can explain that objects in Scratch have attributes (linked to) - I can identify the objects in a Scratch project (sprites, backdrops) - I can recognise that commands in Scratch are represented as blocks	-I can create a code snippet for a given purpose - I can explain the effect of changing a value of a command - I can program a computer by typing commands	-I can create a simple circuit and connect it to a microcontroller - I can explain what an infinite loop does - I can program a microcontroller to make an LED switch on	-I can explain that the way a variable changes can be defined - I can identify examples of information that is variable - I can identify that variables can hold numbers or letters
	Explore simple software to make things happen	*Use simple software to make things happen*	-I can follow an instruction - I can give directions - I can recall words that can be acted out	-I can show the difference in outcomes between two sequences that consist of the same commands - I can use an algorithm to program a sequence on a floor robot - I can use the same instructions to create different algorithms	-I can choose a word which describes an on-screen action for my plan - I can create a program following a design -I can identify that each sprite is controlled by the commands I choose	-I can test my algorithm in a text-based language - I can use a template to create a design for my program - I can write an algorithm to produce a given outcome	-I can connect more than one output component to a microcontroller - I can design sequences that use count-controlled loops - I can use a count-controlled loop to control outputs	-I can explain that a variable has a name and a value - I can identify a program variable as a placeholder in memory for a single value - I can recognise that the value of a variable can be changed
	Use buttons on electronic toys and be able to state what the buttons do.	*Press buttons on a floor robot or screen robot and talk about the movements*	-I can compare forwards and backwards movements - I can predict the outcome of a sequence involving forwards and backwards commands - I can start a sequence from the same place	-I can compare my prediction to the program outcome - I can follow a sequence - I can predict the outcome of a sequence	-I can create a sequence of connected commands -I can explain that the objects in my project will respond exactly to the code - I can start a program in different ways	-I can identify everyday tasks that include repetition as part of a sequence, eg brushing teeth, dance moves - I can identify patterns in a sequence - I can use a count-controlled loop to produce a given outcome	-I can design a conditional loop - I can explain that a condition is either true or false - I can program a microcontroller to respond to an input	-I can decide where in a program to change a variable - I can make use of an event in a program to set a variable - I can recognise that the value of a variable can be used by a program
	Identify some differences between a variety of toys.	*Explore options and make choices with toys, software and websites*	-I can compare left and right turns - I can experiment with turn and move commands to move a robot - I can predict the outcome of a sequence involving up to four commands	-I can explain the choices I made for my mat design - I can identify different routes around my mat - I can test my mat to make sure that it is usable	-I can combine sound commands - I can explain what a sequence is - I can order notes into a sequence	-I can choose which values to change in a loop - I can identify the effect of changing the number of times a task is repeated - I can predict the outcome of a program containing a count-controlled loop	-I can explain that a condition being met can start an action - I can identify a condition and an action in my project - I can use selection (an 'if...then...' statement) to direct the flow of a program	-I can choose the artwork for my project - I can create algorithms for my project - I can explain my design choices
			-I can choose the order of commands in a sequence - I can debug my program - I can explain what my program should do	-I can create an algorithm to meet my goal - I can explain what my algorithm should achieve - I can use my algorithm to create a program	-I can build a sequence of commands - I can decide the actions for each sprite in a program - I can make design choices for my artwork	-I can explain that a computer can repeatedly call a procedure - I can identify 'chunks' of actions in the real world - I can use a procedure in a program	-I can create a detailed drawing of my project - I can describe what my project will do - I can identify a real-world example of a condition starting an action	-I can choose a name that identifies the role of a variable - I can create the artwork for my project - I can test the code that I have written

EYFS

Since the revision in 2020 the EYFS no longer has specific Early Learning Goals for Technology. However we continue to teach computing lessons at WHIS as we believe that learning technology skills support our children as digital learners both whilst in reception and as they progress through the school. We use our computing sessions to support many other areas of the EYFS, such as: mouse skills supporting Fine Motor Skills as part of Physical Development, discussions and partner work supporting Communication and Language, programming and sequencing skills supporting Mathematical Development.

Digital Literacy units about making their own book in the summer term also support Literacy Skills, Communication and Language Skills and Creative Learning. All computing units also strongly support children as creative and critical thinkers who are willing to take risks and find solutions in new experiences.

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 computing substantive concepts (see below) are the 'golden thread' running through our computing 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.

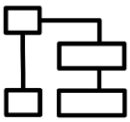
Computing 3D Curriculum		
Vertical Links	**Horizontal Links**	**Diagonal Links**
Concepts deliberately constructed within a subject that are encountered across year groups from EYFS to Y6 (for example, programming and algorithms)	Links between subjects, commonly known as cross-curricular, or themed (for example in Y5 history children learn about Mayan pyramids and then design them on Sketch Up in computing. In Year 1 in English children write instructions on how to make sandwich and then use BeeBots to provide instructions.) 	Concepts connected across both year groups and across subjects (for example, in Year 5 in maths children learn data handling. In Year 6 in computing, they develop this skill using Google Sheets) 

Substantive Concepts

The substantive concepts in computing cover the three main areas of knowledge that children will acquire through the Hove Learning Federation computing curriculum: **computer science**, **information technology** and **digital literacy including e-safety**. Children will return to these concepts year on year so that they are confident to consider and discuss the aspects within each. Through doing this they will be exposed to the subject knowledge and explicit vocabulary used to learn about the content. Common misconceptions will be explicitly revealed as non-examples and positioned against known and accurate content.

Disciplinary knowledge

Disciplinary knowledge – this is knowing how to collect, use, interpret, understand and evaluate learning through the Computing knowledge that is taught. It is not assumed that pupils will acquire these skills by luck or hope. All learning outcomes can be described through a high-level taxonomy of ten strands, which provides categories and an organised view of content to encapsulate the discipline of computing:

Algorithms 	Computer networks 	Computer systems 	Creating media 	Data and information 
Understanding, designing, creating, and evaluating algorithms.	Gaining an understanding of how networks can be used to retrieve and share information, and the potential associated risks involved with using them.	Knowing what a computer is and how its component parts function together as a whole.	Selecting and creating a range of media including: images, text, videos and sounds to inform or fulfil a given purpose.	Gain an understanding of how and why data is stored, organised and used.
Design and development 	Effective use of tools 	Impact of technology 	Programming 	Safety and security 
Understand the various digital activities that are needed to plan, create and evaluate computing outcomes such as spreadsheets,	Using software development tools, such as 'Scratch' to support computing work.	Understanding how computer systems are used in everyday life by individuals, businesses and wider society.	Creating programs that enable computers to solve problems	Understanding the risks that are involved in using technology and how children can protect themselves and others.

data bases or printed documents.				

Local Knowledge, Enrichment & Cultural Capital

Local knowledge and community

At HLF, we value the importance of our local community. Within our curriculum our children learn about technology in our school and local area.

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.

For example:

- Year 2 Drusilla's trip: Children learn about animals from the Amazon jungle and use this to create music to match an animals movement
- Year 2 Brighton Beach trip: Children use digital photography to take photos of human physical features at the beach.
- Year 5 Brighton Beach trip: Children use their media skills to take photographs of art they have created.
- Year 6 WW2 bunker visit: Children visit a WW2 bunker and later use the experience to create a movie about evacuees.

Implementation

Sequencing

Our computing curriculum is taught across each year group in units which link to our topics. This enables our children to build a depth of knowledge, acquire and practice key skills and embed vocabulary. Each unit is strategically planned to build upon prior learning with opportunities to introduce and revisit key concepts woven throughout in order to deepen pupil understanding.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception	Mouse Skills	Creating Images	Learning Through Technology	Control	Programming and Direction	Digital Media
Year 1	Technology Around Us Recognising technology in school and using it responsibly.	Digital Painting Choosing appropriate tools in a program to create art, and making comparisons with working non-digitally.	Digital Writing Using a computer to create and format text, before comparing to writing non-digitally.	Grouping Data Exploring object labels, then using them to sort and group objects by their properties.	Moving a Robot Writing short algorithms and programs for floor robots, and predicting program outcomes.	Programming Animations Designing and programming the movement of a character on screen to tell stories.
Year 2	Information Technology Around Us Identifying IT and how its responsible use improves our world in school and beyond.	Robot Algorithms Creating and debugging programs, and using logical reasoning to make predictions.	Digital Music Using a computer as a tool to explore rhythms and melodies, before creating a musical composition.	Pictograms Collecting data in tally charts and using attributes to organise and present data on a computer.	Digital Photography Capturing and changing digital photographs for different purposes	Programming Quizzes Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz.
Year 3	Connecting Computers Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks.	Stop-frame Animation Capturing and editing digital still images to produce a stop-frame animation that tells a story.	Sequencing Sounds Creating sequences in a block-based programming language to make music.	Branching Databases Building and using branching databases to group objects using yes/no questions.	Desktop Publishing Creating Documents by modifying text, images and page layouts for a specified purpose.	Events and Actions in Programs Writing algorithms and programs that use a range of events to trigger sequences of actions.
Year 4	The Internet Recognising the internet as a network of networks including the WWW, and why should evaluate online content.	Audio Production Capturing and editing audio to produce a podcast, ensuing that copyright is considered.	Repetition in Shapes Using a text-based programming language to explore count-controlled loops when drawing shapes.	Data Logging Recognising how and why data is collected over time, before using data loggers to carry out an investigation.	Photo Editing Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled.	Repetition in Games Using a block-based programming language to explore count-controlled and infinite loops when creating a game.

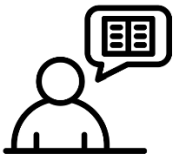
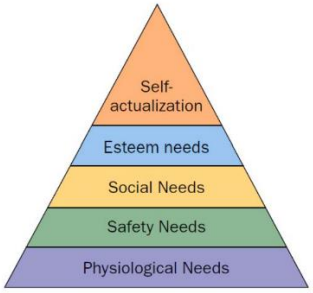
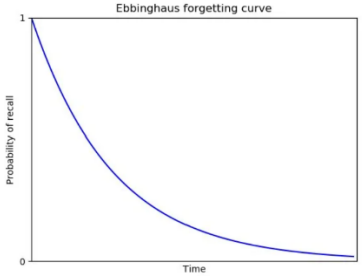
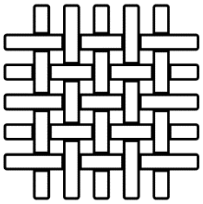
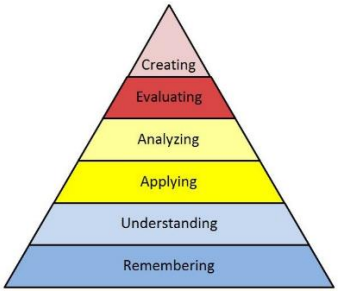
Year 5	**System and Searching** Recognising IT systems in the world and how some can enable searching on the internet.	**Flat-file Databases** Using a database to order data and create charts to answer questions.	**Video Production** Planning, capturing and editing video to produce a short film.	**Introduction to Vector Graphics** Creating images in a drawing program by using layers and groups of objects.	**Selection in Physical Computing** Exploring conditions and selection using a programmable microcontroller.	**Selection in Quizzes** Exploring selection in programming to design and code an interactive quiz.
Year 6	**Communication and Collaboration** Exploring how data is transferred by working collaboratively online.	**Webpage Creation** Designing and creating webpages, giving consideration to copyright, aesthetics and navigation.	**Variables in Games** Exploring variables when designing and coding a game.	**Introduction to Spreadsheets** Answering questions by using spreadsheets to organise and calculate data.	**3D Modelling** Planning, developing and evaluating 3D computer models of physical objects.	**Sensing Movement** Designing and coding a project that captures inputs from a physical device.

Pedagogy
Key Principles for Effective Teaching & Learning at Hove Learning Federation

high expectations 	quality first and adaptive teaching 	developing learning behaviours 	relationships and environment 	quality of instruction 
inspire, support and challenge 	layered modelling to ensure access for all children 	subject knowledge and mastery 	effective questioning and feedback 	making it stick' - transferring knowledge to long-term memory 

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 load theory 	**Rosenshine's principles of instruction** 	**Cain and Oakhill's vocabulary instruction** 	**Maslow's Hierarch of Needs** 
Fiorella and Mayer's generative learning practice 	**Ebbinghaus' forgetting curve** 	**Interleaving and Spacing** 	**Bloom's Taxonomy** 

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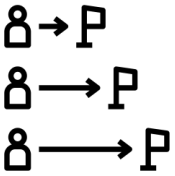
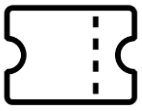
Retrieval Practice	Bruner's Spiral Curriculum	Pupil Book Study	Education Endowment Foundation
			Education Endowment Foundation

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 taught content 	cumulative quizzing within the learning sequence 	structured discussions in class 	retrieval and recall 	explaining and challenge partner talk 
self and peer assessment 	teacher feedback and summaries 	diagnostic questioning 	higher order thinking and exit tickets 	summarising and explaining the Thinking Question from the sequence 
rephrasing and thinking out loud 	key vocabulary use and application 	Professor Prove It 	Deep Diver and Submarine challenges 	lesson to lesson, unit to unit, term by term, end of year feedback & concept questions 

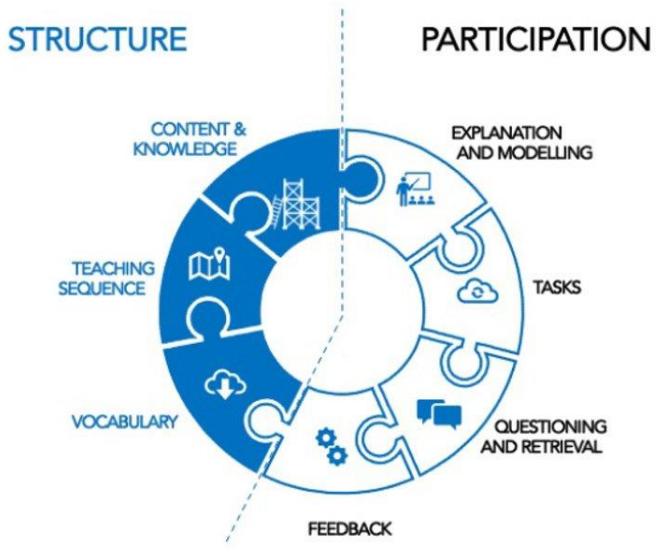
Mapping and Planning – 7 Lenses

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 evaluating our curriculum design in this way, 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

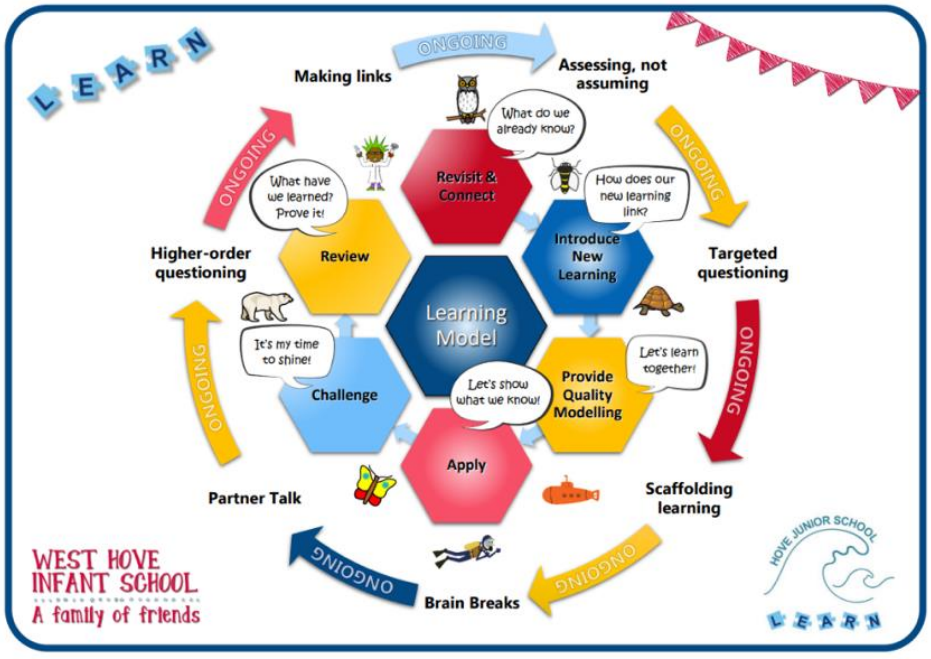
Lesson Structure/Model

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 variety 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 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 topic lead curriculum allows us to create learning sequences in computing that ensure cultural capital and enrichment.

Where possible we develop children's skills of enquiry through the investigation of:

- Access to a range of technology (BeeBots, I-pads, Chromebooks etc.)
- Online sources (Google Classroom, Scratch, Hour of Code)
- Real life stories (Terrific Tech Slides.)

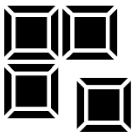
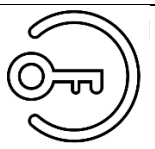
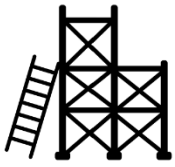
Diversity and Identity across the Computing Curriculum

Through our planning and curriculum mapping, we celebrate the diversity within our community and the wider world and develop confidence in individual identity through our tailored curriculum. We promote equality and use examples of where this has not always been the case in the past to support learning and promote tolerance. In our online safety lessons, we stress the importance or creating a tolerant, inclusive and safe digital world for all. We highlight a diverse range of role models so that children can be exposed to people of different backgrounds.

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 competent users of technology.
We do this by:

	Adjusting technology set ups for Children with SEND needs who require technology adaptations due to visual impairments, motor control and hearing support.
	-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 promote hard thinking, drawing on the content, including explain the word connections and sequenced thinking paths
	· 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 computing skills.
	· Activities ensure children with SEN or EAL can access tasks appropriately and share their understanding of computing concepts.
	· Differentiation and scaffolds 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 books and on The Portal (EYFS)
	· EEF 5-A-Day approaches/strategies are reviewed and incorporated into our lessons 1 – explicit instruction, 2 – cognitive and metacognitive strategies, 3 – scaffolding, 4 – flexible grouping, 5 – using technology

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

At HLF, we have created our own monitoring systems that incorporate the key principles from the Pupil Book Study (see

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

'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
2) 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? (Why did you set this target?)	Action (What will you do?)	Intended Impact (What will this look like?)	Responsibility	By when	Evidence for 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.

Continuous Professional Development for all Staff

'High quality teaching improves pupil outcomes, and effective professional development offers a crucial tool to develop teaching quality and enhance children's outcomes in the classroom.' - EEF

Through each element of the monitoring process described above and assessments, subject leads know how well their subject is being taught and areas for development. As a result, staff meetings and inset days are carefully considered to provide a range of tailored CPD opportunities guaranteeing consistency of expectations and practice, and ensuring the highest quality teaching is taking place to improve pupil outcomes. The content of this CPD is then factored into year group meetings for year group teams to explore further over time.

As a school, we use a range of development methods to meet the needs of our staff. This includes:

- 1:1 using mentoring or coaching
- Guided collaborative group work
- Use of research based think pieces
- Professional modelling

Governors

Our governors are with us on every step of our curriculum journey. They are critical friends who ask key questions, investigate patterns within the data, and support and challenge our reasoning when creating systems and devising new strategies. Subject teams are given opportunities to feedback to governors about their subject development and planned next steps. The purpose of this close relationship is to ensure governors have an in-depth understanding of what is happening in the classrooms so that they can play an active role in school development. SLT work closely with governors so that there is a shared understanding of how high quality teaching is improving pupil outcomes at Hove Learning Federation and that these successes are celebrated.