

Computing Skills and Knowledge Progression Map

Intent – What we are teaching in Computing

At Hatfield Peverel Infant & Nursery School, our intent is to provide a computing curriculum that helps our youngest learners become confident, curious and safe users of technology. We introduce digital skills in a way that is playful, practical and accessible for all KS1 children.

We aim for our pupils to become digitally literate, learning how to use computers, tablets and simple software to explore ideas, create content and communicate with others. They will develop early digital resilience, understanding how to make safe choices online and knowing what to do if something worries them.

Implementation – How we are teaching Computing

At Hatfield Peverel Infant and Nursery School, we use Purple Mash scheme for Computing, which provides a clear and effective, bespoke cross curricular scheme of work that provides coverage in line with the National Curriculum. Teaching and learning should facilitate progression across all key stages within the strands of digital literacy, information technology and computer science. Children will have access to the hardware (computers, and iPads) and software that they need to develop knowledge and skills of digital systems and their applications. Children will have the opportunity to explore and respond to key issues such as digital communication, cyber-bullying, online safety, security, plagiarism and social media. Wider Curriculum links and opportunities for the safe use of digital systems are considered in wider curriculum planning.

Impact – What the children have learnt

A high-quality computing education aims to develop a range of programming and technological skills that are transferable to other curriculum areas, including Science, Mathematics, English and History. As pupils progress through KS1, they will become increasingly confident in the application of their digital skills as well as learning to be efficient and effective communicators, collaborators and analysts. We encourage them to show imagination and creativity in their use of ICT in different aspects of their learning and life beyond school. Children will become confident when talking about E-safety and the risks involved when using the internet. We seek to inspire a love of computing and to equip every child with the skills necessary to use technology to become independent learners. The teaching style that we adopt is as active and practical as possible.

National Curriculum

Pupils should be taught:

- to understand what algorithms are; how they are implemented as programs on digital devices; and those programs execute by following precise and unambiguous instructions
- to create and debug simple programs
- to use logical reasoning to predict the behaviour of simple programs
- to use technology purposefully to create, organise, store, manipulate and retrieve digital content
- to recognise common uses of information technology beyond school
- to use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about

Development Matters

(3-4)

- Explore how things work.
- Match their developing physical skills to tasks and activities in the setting.
- Increasingly follow rules, understanding why they are important.

(Reception)

- Develop their small motor skills so that they can use a range of tools competently, safely and confidently.
- Recognise some environments that are different from the one in which they live.
- Know and talk about the different factors that support their overall health and wellbeing:
sensible amounts of 'screen time'

Early Learning Goals

Personal, Social and Emotional Development:

content or contact on the internet or other online technologies		Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. Explain the reasons for rules, know right from wrong and try to behave accordingly. Expressive Arts and Design: Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.		
Inclusion including SEND		Assessment		Cultural Capital
All children will be given the same task because we believe in teaching a mastery approach across all subject areas and equal access for all. Quality first teaching for all children. Teacher modelling and scaffolded practice for all children. Focus groups with adult support for children needed further support. Pre-teach sessions. Where appropriate, guidance has been given on how to simplify tasks within lessons or challenge those who are ready for more stretching tasks. We identify SEND as a broad term which can include physical, sensory, cognitive, behaviour and learning access needs.		Prior knowledge/retrieval opportunities are included at the beginning of units of work so that planning can be adapted/amended to support gaps or misconceptions. Clear sequence of lessons which identify the key knowledge that children need to know at the end of a lesson/unit of work.		Assemblies: Online Safety Workshop Safer internet day
At Hatfield Peverel Infant and Nursery School, we use Purple Mash scheme of work that aims to equip children with knowledge, skills, and vocabulary for computing, foster digital literacy, and build cultural capital for a technologically advancing world. It aims to develop practical skills through activities like coding, animation, and game creation, and to provide a flexible, structured curriculum with built-in tools to support teachers and track student progress. The scheme also focuses on independent learning, with resources that are adaptable to different teaching styles.				
	Nursery	Reception	Year 1	Year 2
Computer Science Skills	- To explore how things work around the setting. - To explore and begin to recognise AB and ABC patterns. - To begin to understand that inputting data into Beebots, causes different outcomes.	- To follow a route for a Beebot. - To use the buttons on a floor Beebot to make it move, using buttons with greater purpose e.g., program several buttons to make it move.	Lego Builders (1.4) Maze Explorers (1.5) Coding (1.7) Grouping & Sorting (1.2) - To apply a logical process when sorting and grouping a range of objects (1.2) - To explain that an algorithm is a set of instructions. (1.4, 1.5) - I know that a computer program turns an algorithm into code that the computer can understand. (1.4, 1.7) - To work out what is wrong when the steps are out of order in instructions. (1.4, 1.5)	Coding - To explain an algorithm is a set of instructions to complete a task. (2.1) - To carefully plan my algorithm so it will work when I make it into code. (2.1) - To design a simple program using 2Code that achieves a purpose. (2.1) - To find and correct some errors in my program. (2.1) - To say what will happen in a program. (2.1)

			- To say that if something does not work how it should it is because my code is incorrect. (1.7) - To try and fix my code if it isn't working properly. (1.7) - To make good guesses of what is going to happen in a program. For example, where the turtle might go. (1.5, 1.7)	To spot something in a program that has an action or effect (does something) (2.1)
Knowledge	- Identify AB patterns - Follow simple instructions.	- Know how to plan routes and follow plans for toy Beebots - Know how to plan and input instructions for a floor Beebot building up to several steps. - Know how to interpret simple instructions to predict an outcome.	- Know how items have been sorted into groups. - Know that an algorithm is a set of instructions to complete a task. - Know how to work out what is wrong with a simple algorithm when the steps are out of order. - Know how to write their own simple algorithm. - Know how to make good guesses of what is going to happen in a program.	- Explain that an algorithm is a set of instructions to complete a task. - Show an awareness of the need to be precise with their algorithms so that they can be successfully converted into code. - Know how to create a simple program that achieves a specific purpose. - Identify and correct some errors, e.g. Debug Challenges - Identify the parts of a program that respond to specific events and initiate specific actions. For example, they can write a cause-and-effect sentence of what will happen in a program
Information Technology Skills	- To match developing physical skills to tasks and activities in the setting. - To explore different technology resources (e.g. keyboards, cameras, interactive whiteboard, play till, digital toys).	- To 'hold' a mouse correctly. - To move the mouse purposefully. - To find individual letters and numbers on the keyboard. - To select colours. - To control tools to experiment with. - To draw using a touch screen. - To experiment in the music area of Mini Mash to combine sounds. - To identify features in photos. - To play a quiz game correctly.	Grouping & Sorting (1.2) Pictograms (1.3) Animated stories (1.6) Coding (1.7) - To identify what sound, pictures and text are. (1.2) - To add sound, pictures and text to a program such as 2Create a Story. (1.6) - To change content on a file such as text, sound and images (1.3, 1.6, 1.7) - To name my work. (1.2, 1.3, 1.6, 1.7) - To save my work. (1.2, 1.3, 1.6, 1.7) - To find my work. (1.2, 1.3, 1.6, 1.7)	Spreadsheets (2.3) Questioning (2.4) Creating pictures (2.6) Making music (2.7) Presenting ideas (2.8) - To organise data – for example, using a database such as 2Investigate. (2.3, 2.4) - To find data using specific searches – for example, using 2Investigate. (2.4, also links to internet searching) - To use several programs to organise information – for example, using binary trees such as 2Question or spreadsheets such as 2Calculate. (2.4, 2.8)

				- To edit digital data such as data in music composition software like 2Sequence. (2.7 and most units) - To name, save and find my work. (most units) - To include photos, text and sound in my creations. (2.8, 2.6)
Knowledge	- Begin to show awareness of how to interact with computers and technology as appropriate. - Mark-make purposefully on a screen. - Begin to show an interest in taking photos using a device.	- Know and recognise computers at home and at school. - Understand how to recognise and talk about familiar technology (e.g. apps, websites and online services).	- Know how to sort pictures/text - Know how to add pictures to a programme such as 2Create a story - Know how to change content on a file - Know how to name and save their work	- Know how to organise data – for example, using a database such as 2Investigate. - Understand how to find data using specific searches – for example, using 2Investigate - Know how to use programs to organise information - Know where and how to name, save and find their work - Understand how to use a range of media in their digital content including photos, text and sound.
Digital Literacy Skills	- To understand that rules must be followed whilst using technology. - To begin to understand that precautions should be taken when using the internet.	- To navigate to Purple Mash login page. - To log in using a picture password. - To select activity of choice. - To complete a simple program on Purple Mash. Online Safety: - To understand that rules must be followed whilst using technology when accessing classroom computers - To understand that precautions should be taken when using the internet when accessing the classroom computers	Online Safety (1.1) Technology outside the school (1.9) - To say what technology is. (1.9) - To say what examples of technology are in school. (1.9) - To say what examples of technology are at home. (1.9) - To explain that a chair uses old technology, and a smartphone uses new technology. (1.9) - To keep my login information safe. (1.1 and most units) - To save my work in a safe place such as 'My Work' folder.	Online Safety (2.2) Effective searching (2.5) - To find the information I need using a search engine. (2.5) - To talk about the consequences of not searching online safely. (2.2, 2.5) - To share work and communicate electronically – for example, using 2Email or the display boards. (2.2 and others) - To report unkind behaviour and things that upset me online, to a trusted adult. (2.2) - To explain where technology is used at school such as in the office or canteen. (2.2) - To understand that my creations such as programs in 2Code, need similar skills to the adult world. e.g. The program used for collecting money for school trips. (2.1)

Knowledge	• Begin to identify technology used in the home and at school. • Begin to relate being gentle and sharing to the use of devices. • Begin to be aware of the impact of a lot of screen time.	• Explain what it means to own digital content. • Explain what 'private' means when using technology. • Express how it feels to be uncomfortable with something. • Understand the impact of a lot of screen time. • Identify how technology is used outdoors. • Identify technology used in the wider world. • Take appropriate actions before using technology. • Understand why food should be kept away from devices. • Identify electrical safety as important. • Know safe ways to transport portable devices. • Relate being gentle and sharing to the use of devices. • Understand what technology is. • Identify the main parts of a computer.	• Understand what is meant by technology and can identify a variety of examples both in and out of school. • Know how to make a distinction between objects that use modern technology and those that do not e.g. a microwave vs. a chair. Online Safety • Understand the importance of keeping information, such as their usernames and passwords, private and actively demonstrate this in lessons. • Understand how to ownership of their work and save this in their own private space such as their My Work folder on Purple Mash.	Online Safety • Understand how to retrieve digital content using a search engine. • Understand how to make links between technology they see around them, coding and multimedia work they do in school e.g. animations, interactive code and programs. • Know the implications of inappropriate online searches. • Begin to understand how things are shared
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Vocabulary				
	Nursery	Reception	Year 1	Year 2
	Smartboard, iPads, Beebots, phones, microwaves, cameras, laptops, push, button, on, off, safety, internet, video.	On, Off, Switch, Backwards, Forward, Instruction, Sound Moving, Buttons Collect, Command, Computer Count Equipment, Keyboard, Keys, Monitor Mouse, Movement, Organise, Phone Camera, Remote, Set of photos, Type, Choices, Create, Internet information, Share, Technology, Website	Online Safety and Exploring Purple Mash: Log in, Username, password, Avatar, Log out, Save, Notification Technology Outside of School: Technology Animated Story Books: Animation, E-Book, Font, File, Sound Effect, Display Boar Coding: Action, Button, Character, Coding, Command, Debug/ Debugging, Input, Object	Online Safety: Search, Internet, Sharing, Digital footprint, Email Effective Searching: Internet, Search, Search engine Coding: Action, Algorithm, Bug, Character, Code block, Debug/Debugging, Input, Object Presenting Ideas: Concept map, Presentation, Audience, Node

Predominant Computing strand*

Computer Science
Information Technology
Digital Literacy

Most units will include aspects of all strands

Early Years (Reception)

Rather than a scheme with set lessons, the early years resources are designed to integrate into the day-to-day routine and set-up of an early years setting with opportunities for using Mini Mash or Purple Mash as part of the Early Years curriculum to support children in working towards early learning goals.

In addition, there are units of suggested ideas that focus on computing skills specifically, that can also be provided as opportunities for learning as part of the topics in other areas to give children a sound basis to explore topics using technology and to be ready for progressing through the Computing curriculum. These are as follows and are designed to be integrated and linked to wider early years curriculum areas. These have been loosely classified into the three streams but there is overlap between all three streams.

Mouse and Trackpad Skills	Keyboard Skills	Drawing skills	Robots	Sounds	Photography
Technology Around Us	Hardware	Safety and Privacy	Quizzes	Using Purple Mash with an Individual Login	

Year 1

	Unit 1.1 Online Safety & Exploring Purple Mash	Unit 1.2 Grouping & Sorting	Unit 1.3 Pictograms	Unit 1.4 Lego Builders	Unit 1.5 Maze Explorers	Unit 1.6 Animated Story Books	Unit 1.7 Coding	Unit 1.9 Technology outside school
Number of lessons	4	2	3	3	3	5	6	2
Main tool			2Count		2Go	2Create A Story	2Code	

Year 2

	Unit 2.1 Coding	Unit 2.2 Online Safety	Unit 2.3 Spreadsheets	Unit 2.4 Questioning	Unit 2.5 Effective Searching	Unit 2.6 Creating Pictures	Unit 2.7 Making Music	Unit 2.8 Presenting Ideas
Number of lessons	6	3	6	5	3	5	3	4
Main tool	2Code		2Calculate	2Question 2Investigate		2Paint A Picture	2Sequence	

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