



Computing

Hampreston CE VA First School

Policy | Plan | Progression 2022/23

Vision

We want our pupils to develop a love of and mastery over technology. We want pupils to be able to choose when and how it is appropriate to use technology. We will model and help them learn how to use it safely, responsibly and positively. We aim to put the building blocks of computational thinking in place and also use technology to enhance pupils' learning experience across the curriculum, giving them creative ways to learn and share their learning. We want pupils to develop fluency and confidence with a range of tools and to develop a confident, tinkering approach when they meet unfamiliar technology.

Why We Believe Computing is Important

The use of information and communication technology is an integral part of the National Curriculum, a key skill for everyday life and a highly motivating learning tool. Computers, tablets, programmable robots, digital and video cameras are a few of the tools that can be used to acquire, organise, store, manipulate, interpret, communicate and present information. At Hampreston First School, we recognise that pupils are entitled to quality hardware and software and a structured and progressive approach to the learning of the skills needed to enable them to use it effectively. We encourage the use of technology as a means of supplementing and enhancing the learning and teaching experience. Our children are presented with a wide range of opportunities and experiences to ensure they can successfully utilise their technological skills and knowledge in a variety of contexts. The safety of the children is our priority and online safety, both explicitly taught and continually monitored, forms a major part of this.

Characteristics of Computer Scientists

At Hampreston First School we aim to develop computer scientists who:

- Are curious about technology and ask questions to find out why and how to make things happen.
- Are excited to tinker, find answers and share their increasing computing knowledge.
- Solve problems and work systematically and logically with attention to detail.

- Are not afraid to have a go and fail, then persevere until they find a solution.
- Follow instructions but also think for themselves.
- Explain confidently to others their ideas and what they have found out.

Subject Statement

Intent

At our school we want pupils to be **MASTERS** of technology and not slaves to it. Technology is everywhere and will play a pivotal part in pupils' lives. Therefore, we want to model and educate our pupils on how to use technology positively, responsibly and safely. We want our pupils to understand that there is always a choice with using technology and as a school we utilise technology to model positive use. We recognise that the best prevention for a lot of issues we currently see with technology/social media is through education. We recognise that technology can allow pupils to share their learning in creative ways. We also understand the accessibility opportunities technology can provide for our pupils. Our knowledge-rich curriculum has to be balanced with the opportunity for pupils to apply their knowledge creatively which will in turn help our pupils become skilful computer scientists. We encourage staff to try and embed computing across the whole curriculum to make learning creative and accessible. We want our pupils to be fluent with a range of tools to express their understanding. We aim by the end of Year 4 that our pupils will have the independence and confidence to choose the best tools to fulfil the tasks and challenges set by teachers or for projects of their own.

Implementation

During the Spring 2022, we moved to a new scheme of work (SoW) supported by the National Centre for Computing Education, a DfE recognised curriculum provider. The NCCE scheme of work ensures thorough coverage of the National Curriculum, providing clear links between knowledge and skills taught each year. The knowledge and skills maps build year on year to deepen and challenge our learners. The NVCCE SoW also ensures the pupils have access to the most current resources and pedagogy, supporting Hampreston in our provision of resources including hardware, apps/software and devices.

With the children, we also engage with a variety of activities during Safer Internet Week each year.

Hampreston aims to:

- Meet the requirements of the National Curriculum programmes of study for computing.
- Provide a relevant, challenging and enjoyable curriculum for computing for all pupils.
- Use ICT and computing as a tool to enhance learning throughout the curriculum.
- To respond to new developments in technology.
- To equip pupils with the confidence and capability to use ICT and computing throughout their later life.
- To develop the understanding of how to use ICT and computing safely and responsibly.

The National Curriculum for computing aims to ensure that all pupils:

- Can understand and apply the fundamental principles of computer science, including logic, algorithms, data representation, and communication.
- Can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems.
- Can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems.

- Are responsible, competent, confident and creative users of information and communication technology.

Impact

We encourage our children to enjoy and value the curriculum we deliver. We will constantly ask the **WHY** behind their learning and not just the **HOW**. We want learners to discuss, reflect and appreciate the impact computing has on their learning, development and well-being. Finding the right balance with technology is key to an effective education and a healthy life-style. We feel the way we implement computing helps children realise the need for the right balance and one they can continue to build on in their next stage of education and beyond. We encourage regular discussions between staff and pupils to best embed and understand this. The way pupils showcase, share, celebrate and publish their work will best show the impact of our curriculum. We also look for evidence through reviewing pupil's knowledge and skills digitally and observing their learning regularly.

Computing Curriculum Overview

	Autumn 1 <i>Computer Systems</i>	Autumn 2 <i>Creating Media</i>	Spring 1 <i>Programming A</i>	Spring 2 <i>Data & Information</i>	Summer 1 <i>Creating Media</i>	Summer 2 <i>Programming B</i>
EYFS	<i>*Play and exploration of devices across the curriculum</i>					
Year 1	Technology Around Us	Digital Painting	Moving a Robot	Grouping Data	Digital Writing	Introduction to Animation
Year 2	IT Around Us	Digital Photography	Robot Algorithms	Pictograms	Making Music	Introduction to Quizzes
Year 3	Connecting Computers	Animation	Sequence in Music	Branching Databases	Desktop Publishing	Events and Actions
Year 4	The Internet	Audio Editing	Repetition in Shapes	Data Logging	Photo Editing	Events and Actions

Early Years and Computing*

Despite computing not being explicitly mentioned within the [Early Years Foundation Stage \(EYFS\) statutory framework](#), which focuses on the learning and development of children from birth to age five, there are many opportunities for young children to use technology to solve problems and produce creative outcomes. In particular, many areas of the framework provide opportunities for pupils to develop their ability to use computational thinking effectively, such as through undertaking projects involving the concepts and approaches suggested by Computing at School's (CAS) [Barefoot Computing](#) resources.

As young children take part in a variety of tasks with digital devices, such as moving a [Bee Bot](#) around a classroom, they will already be familiar with the device before being asked to undertake tasks related to the key stage one (KS1 - ages 5 - 7 years) computing curriculum, such as writing and testing a simple program. Not only will children be keen to again use a device they had previously enjoyed using, their [cognitive load will also be reduced](#), meaning they are more likely to succeed when undertaking activities linked to the next stage in their learning.

Within the revised EYFS statutory framework, the Technology strand within Understanding the World has been removed. However, there are opportunities within each area of the framework to enable practitioners to effectively prepare children for studying the computing curriculum.

Incorporating computing in all areas of the EYFS

The September 2020 release of [Development Matters](#) (pg. 9) outlines how effective teaching and learning gives children the opportunity to play and explore, participate in active learning and create and think critically. The activities outlined below have therefore been included to meet these criteria where feasible. Tasks are outlined for each area of the EYFS framework, although many other opportunities exist to use technology with younger children; particularly when linked to a topic studied within class.

It is important in the Early Years Foundation Stage to give children a broad, play-based experience of computing in a range of contexts, including outdoor play. Computing is not just about computers. Early years learning environments should feature computing scenarios based on experience in the real world, such as role play. Children gain confidence, control and language skills through opportunities to explore using non-computer-based resources such as tills and walkie-talkie sets. Recording devices can support children to develop their communication skills. This is particularly useful with children who have English as an additional language.

By the end of key stage 1 pupils should be taught to:

Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.

- Create and debug simple programs.
- Use logical reasoning to predict the behaviour of simple programs.
- Use technology purposefully to create, organise, store, manipulate and retrieve digital content.
- Recognise common uses of information technology beyond school.
- Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

By the end of key stage 2 pupils should be taught to:

- Design and write programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- Use sequence, selection, and repetition in programs; work with variables and various forms of input and output; generate appropriate inputs and predicted outputs to test programs
- Use logical reasoning to explain how a simple algorithm works and to detect and correct errors in algorithms and programs
- Understand computer networks including the internet; how they can provide multiple services, such as the world-wide web; and the opportunities they offer for communication and collaboration
- Describe how internet search engines find and store data; use search engines effectively; be discerning in evaluating digital content; respect individuals and intellectual property; use technology responsibly, securely and safely
- Select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

Promoting British Values Through Computing

We endeavour to promote the British Values of democracy, the rule of law, individual liberty and mutual respect and tolerance of those with different faiths and beliefs through our computing curriculum. Please see our British Values policy for further information. Through our computing lessons we promote individual liberty through encouraging children to make their own choices and mutual respect in listening to other people's ideas.

Spiritual, Moral, Social and Cultural Aspects

Moral development is promoted through drawing conclusions using observation and evidence rather than preconceptions. To ensure social development, children learn to respect the opinions of others and work together in groups. Cultural development is promoted through helping children to recognise how human technological inventions and ideas have affected the way people think, feel, create and behave and live. Beliefs, spiritual awareness, high standards of personal behaviour including a positive caring attitude towards other people, an understanding of their social and cultural traditions and an appreciation of the diversity and richness of other cultures are all critical skills and dispositions that we nurture, encourage and develop through National Curriculum areas and the wider curriculum.

Inclusion & Equal Opportunities

At Hampreston First School, we teach computing to all children, whatever their ability, age, gender or race. Computing forms part of our school curriculum policy to provide a broad and balanced education for all children. We provide learning opportunities that are matched to the specific needs of children with learning difficulties. In some instances, the use of ICT has a considerable impact on the quality of work that children produce; it increases their confidence and motivation and allows access to parts of the curriculum to which the children would otherwise not have had.

When planning work in computing, we take into account any IEP targets which may be relevant. Work is differentiated accordingly or computing can be used to help address specific targets. Teachers identify children who are gifted and talented in the area of computing. It is the teacher's responsibility to ensure that these children are suitably challenged in their use of ICT and computing both in specific computing lessons and in using ICT in other curriculum areas. Opportunities are identified for these children to actively participate in more challenging aspects of computing.

Date of policy: September 2021

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