Inspire. Challenge. Learn

At Pool Hayes Primary School, we are committed to providing our children with a curriculum that inspires and challenges them to learn.

Curriculum statement for the teaching and learning of Computing and Online Safety

INTENT	At Pool Hayes Primary we value computing as it provides an opportunity to develop key skills necessary for digital natives to thrive in a digital world. Within an ever changing and technological world, PHP understands and values the importance of teaching Computing and Online Safety from a young age. We acknowledge that future generations will rely heavily on their computational confidence and digital skills in order to support their progress within their chosen career paths. Therefore, it is our school's aim to equip children with the relevant skills and knowledge that is required to understand the three core areas of Computing (Computer Science, Information Technology and Digital Literacy) and to offer a broad and balanced approach to providing quality first teaching of this subject. Computing is an integral part to a child's education and everyday life. Therefore, we intend to support our pupils to access and understand the core principles of this subject through engaging and cross-curricular opportunities. The teaching objectives for Computing at PHP are: To instil an enthusiasm and appreciation of Computing via engaging and well-planned (and supported) lessons, allowing children to use their skills to create and develop new ideas. To develop a scheme of work, in conjunction with the National Curriculum, which provides progression and a breadth of knowledge across all year groups. To ensure that teaching staff continue to access the opportunities to attend subject relevant CPD through the use of Local Authority curriculum support (Lucy Jayes – Local Authority Curriculum Consultant) in order to deliver sessions with confidence and to help identify areas in which they can use computational skills within a cross-curricular approach (as part of their termly topics). To identify real world examples and creative challenges in which pupils can explore and extend their understanding of the fundamental principles and concepts of Computing. To support children to develop and achieve as competent Computational Thinkers by integrating these core concepts and approaches across our whole school ethos.

	To ensure that pupils develop a respectful and responsible attitude towards using information and communication technology, especially with regards to their own and other's safety. To provide a safe space in which pupils can navigate and interact with the digital world, whilst exploring their own personal expression and identity. At PHP safeguarding our children is paramount to everything that we do. As part of this safeguarding, we are always developing ways in which to make sure that all members of the school are taught how to keep themselves safe online. All users of the school's computing equipment are asked to sign our *Acceptable Use Policy* on induction to the school, and each time they log onto the school's computer network. All of the computers in school are connected to the school's secure CCL network (filtered using Fortinet and monitored by Smoothwall software). As part of annual Level 1 safeguarding training (and induction), all members of staff complete NSPCC online safety training with the DSL.

Underpinned By	The teaching of skills	The application of skills	Vocabulary	Online Safety
	All children are expected to succeed and make progress from their starting points. PHP pupils will be taught how to use a range of computer software, including spreadsheets, databases, email systems, word processing, multimedia presentations, app development, control programming and coding.	PHP pupils are given regular opportunities to apply the computing skills and knowledge that they have been taught to support their learning in other curriculum subjects. • Children make their own choices about what software to use and reflect on their choices • Children use their computing skills to develop their language and communication skills; • Children explore their attitudes towards computing and its value to them and society in general. We are continuously exploring ways in which a range of apps can be used to deliver more creative lessons across the curriculum.	PHP pupils will understand and use appropriate topic vocabulary, including that associated with programming, e.g. algorithm, debug, input, output, and variable.	PHP pupils learn how to use mobile technology and the Internet safely. Online safety is not only taught in computing lessons, but in PSHE, RSHE (and other) lessons, assemblies and workshops.

Implementation	EYFS Understanding the world Classrooms contain a variety of areas with a range of technology, both functioning and model / broken devices, or a variety of electronic toys, such as remote controlled cars, walkie-talkies and interactive pets, as part of continuous provision. Further technology is included in conjunction with other activities, such as iPads for pupils to photograph their own learning, children should ideally be given the opportunity to select and use technology for a certain purpose, rather than simply being given a device. Literacy Bee Bots are used in EYFS and provide a number of opportunities to develop pupils' computing knowledge within literacy sessions. Children create stories about the Bee Bot's journey, e.g. around a local area or a country being studied, or they sequence events within a story being studied. For example, children could guide the Bee Bot between different	KS1 Year 2 Computing Algorithms and programming • I can use a range of instructions (e.g. direction, angles, turns). • I can test and amend a set of instructions. • I can find errors and amend. (debug) • I can write a simple program and test it. • I can predict what the outcome of a simple program will be (logical reasoning). • I understand that algorithms are used on digital devices. • I understand that programs require precise instructions. Information technology • I can organise digital content. • I can retrieve and manipulate digital content. • I can navigate the web to complete simple searches. Digital literacy • I use technology respectfully. • I know where to go for help if I am concerned. • I know how technology is used in school and outside of school. Units	KS2 Year 6 computing Algorithms and programming • I can design a solution by breaking a problem up. • I recognise that different solutions can exist for the same problem. • I can use logical reasoning to detect errors in algorithms. • I can use selection in programs. • I can work with variables. • I can explain how an algorithm works. • I can explore 'what if' questions by planning different scenarios for controlled devices. Information technology • I can select, use and combine software on a range of digital devices. • I can use a range of technology for a specific project. Digital literacy • I can discuss the risks of online use of technology. • I can identify how to minimise risks. Units Unit 1 – Create a maths quiz (Scratch)

	locations, characters and locations within Little Red Riding Hood. **Physical development** Many children entering Early Years settings are already familiar with tablet devices, although their ability to use a keyboard and mouse is often limited. This has recently become a more significant issue, due to theprevalence of tablet devices in the home. It is therefore important that children are given opportunities to become familiar with a range of input devices, including the keyboard and mouse, in order to develop the required fine motor skills. Usage could be linked to RWI phonics sessions, such as through the use of drill and practice games. **Communication and language** Unplugged activities, or those away from the machine, give children an opportunity to develop their understanding of technology without the need for expensive devices. Children are asked to give precise instructions verbally, such as through giving instructions to a<u>sandwich making robot</u>, with links made to the importance of using the correct vocabulary, along with speaking clearly and precisely. Giving instructions also forms part of sessions linked to physical development	Unit 1 – Beebots (Beebots and Beebot app) Unit 2 – J2Code/Scratch Jr. Unit 3 – Using the internet Unit 4 – Word processing Unit 5 – Paint (Paint, Brushes) Unit 6 – Presentations (PowerPoint, Book Creator) Online Safety Units - informed by Education in a Connected World: • Can children understand the different methods of communication (e.g. email, online forums etc)? • Do they know you should only open email from a known source? • Do they know the difference between email and communication systems such as blogs and wikis? • Do they know that websites sometimes include pop-ups that take them away from the main site? • Do they know that bookmarking is a way to find safe sites again quickly? • Can they begin to evaluate websites and know that everything on the internet is not true? • Do they know that it is not always possible to copy some text and pictures from the internet? • Do they know that personal information should not be shared online? • Do they know they must tell a trusted adult immediately if anyone tries to meet them via the internet? Year 1 computing Algorithms and programming • I can create a series of instructions. • I can plan a journey for a programmable toy.	Unit 2 – Control an external device/sensor (Lego, motors etc.) Unit 3 – Multimedia Presentation (PowerPoint, Book creator) Unit 4 – Make a poster (Word, Publisher, Pages) Unit 5 – Data logging and spreadsheets (Data loggers, Microphones, Excel) Unit 6 – Movie making Online Safety Units - informed by Education in a Connected World: • Can children discuss the positive and negative impact of the use of ICT in their own lives and those of their peers and family? (See planning units). Year 5 computing Algorithms and programming • I can combine sequences of instructions and procedures to turn devices on and off. • I can use technology to control an external device. • I can design algorithms that use repetition & 2-way selection. Information technology • I can analyse information. • I can evaluate information. • I understand how search results are selected and ranked. • I can edit a film. Digital literacy • I understand that you have to make choices when using technology and

activities, such as determining rules for certain playground games.

Personal, social and emotional development
Voice recorders, or the microphone built into a tablet device, could be used to record how pupils are feeling, or to discuss their relationships with others. This could be extended through pupils creating their own videos, which could also link to children giving online safety guidance to their peers on appropriate use of technology and what to do if they feel worried or concerned when using a device. A range of age-appropriate books are now available for young children to examine online safety, such as Chicken Clicking, Goldilocks (A hashtag cautionary tale) and the free Smartie the Penguin. Using voice and video recorders also allows children to self-evaluate their own speaking.

Expressive arts and design
The use of painting and graphics applications further develop pupils' keyboard and mouse skills, whilst a range of tablet based apps are also used, such as Doodle Buddy. Creative outcomes can be produced, which allows pupils to take ownership of their work and could even be part of an extended project. Outputs produced are linked to other uses of technology, such as producing mats for Bee Beets to travel around, whilst other physical computing devices, such as Spheros, can even be put into paint and controlled using a tablet

Information technology
- I can create digital content.
- I can store digital content.
- I can retrieve digital content.
- I can use a web site.
- I can use a camera.
- I can record sound and play back.

Digital literacy
- I can use technology safely.
- I can keep personal information private.

Units

Unit 1 – Beebots (+ app)
Unit 2 – Photography (Cameras and/or iPads)
Unit 3 – Recording sound (Microphones, iPads)
Unit 4 – Creating a graph (Excel or similar)
Unit 5 – Sending an email (Shared activity and unplugged)
Unit 6 – Word Processing (Word, Book Creator)

Online Safety Units - informed by Education in a Connected World:
- Can they understand the different methods of communication (e.g. email, online forums etc)?
- Do they know you should only open email from a known source?
- Do they know the difference between email and communication systems such as blogs and wikis?
- Do they know that websites sometimes include pop-ups that take them away from the main site?
- Do they know that bookmarking is a way to find safe sites again quickly?
- that not everything is true and/or safe.

Units

Unit 1 – Podcasting (Audacity)
Unit 2 – Databases and Spreadsheets (Online databases, Excel)
Unit 3 – Make a game (Scratch, Kodu)
Unit 4 – Programming using sensors (Motors, iPads, Microphones, Lego)
Unit 5 – Multimedia Presentations (Powerpoint, Book Creator)
Unit 6 – Research and Create a news report (Word, Publisher, Pages)

Online Safety Key Objectives:
Units informed by Education in a connected world:
- Can children discuss the positive and negative impact of the use of ICT in their own lives and those of their peers and family? (See planning units).

Year 4 computing
Algorithms and programming
- I can experiment with variables to control models.
- I can give an on-screen robot specific instructions that takes them from A to B.
- I can make an accurate prediction and explain why I believe something will
- happen (linked to programming).
- I can de-bug a program.

Information technology

	device to produce images. Outfits for a device to wear, such as Bee Bot head dresses or Sphero paper cup people, are also developed. **Mathematics** Controlling devices provides an excellent opportunity to develop pupils' understanding of left and right, along with directional language. Pupils are asked to guide a device around a shape, or even use activities from computing related websites, such as code.org, to develop their understanding further. However, whilst such activities can effectively engage pupils in programming tasks, their usage should be carefully considered to ensure they have a purpose. **Online Safety - Units informed by Education in a Connected World:** **Nursery** Penguin Pig – Online Reputation Chicken Clicking – Managing Information Online Technology Scavenger Demonstrate Searching Webster's Bedtime – Digital Footprint Webster's Manners – Cyberbullying **Reception** Digi Duck's Big Decision – Online Bullying Smartie the Penguin – Healthy Lifestyle Privacy and Security	• Can they begin to evaluate websites and know that everything on the internet is not true? • Do they know that it is not always possible to copy some text and pictures from the internet? • Do they know that personal information should not be shared online? • Do they know they must tell a trusted adult immediately if anyone tries to meet them via the internet? **Skills** • Can they follow the school's safer internet rules? • Can they use the search engines agreed by the school? • Can they act if they find something inappropriate online or something they are unsure of (including identifying people who can help; minimising screen; online reporting using school system etc)? • Can they use the internet for learning and communicating with others, making choices when navigating through sites? • Can they send and receive email as a class? • Can they recognise advertising on websites and learn to ignore it? • Can they use a password to access the secure network?	• I can select and use software to accomplish given goals. • I can collect and present data. • I can produce and upload a pod cast. **Digital literacy** • I recognise acceptable and unacceptable behaviour using technology. **Units** **Unit 1 – Fractal Art in Scratch** **Unit 2 – Create a picture book/presentation (Powerpoint, Publisher, Book Creator** **Unit 3 – Databases and Spreadsheets (Online databases, Excel)** **Unit 4 – Researching the internet** **Unit 5 – Multimedia Presentations (Powerpoint, Book Creator)** **Unit 6 – Using Scratch** **Online Safety Units - informed by Education in a Connected World:** • Do they understand the need for rules to keep them safe when exchanging learning and ideas online? (See planning units). **Year 3 computing** **Algorithms and programming** • I can design a sequence of instructions, including directional instructions. • I can write programs that accomplish specific goals.

	Devices that use the Internet Logging into the computer - privacy/security x2		• I can work with various forms of input. • I can work with various forms of output. Information technology • I can use a range of software for similar purposes. • I can collect information. • I can design and create content. • I can present information. • I can search for information on the web in different ways. • I can manipulate and improve digital images. Digital literacy • I use technology respectfully and responsibly. • I know different ways I can get help if I am concerned. • I understand what computer networks do and how they provide multiple services. • I can discern where it is best to use technology and where it adds little or no value. Units Unit 1 - An introduction to Scratch Jr. Unit 2 - Research for a purpose e.g. leaflet, newspaper (Word, Internet) Unit 3 - Make a photo story (Photostory, Adobe voice) Unit 4 - Databases (Online databases, unplugged) Unit 5 - Presentations (PowerPoint, Book creator)

			Unit 6 – Coding in J2Code Online Safety Units - informed by Education in a Connected World: • Do they understand the need for rules to keep them safe when exchanging learning and ideas online? (See planning units).

	Digital Natives Children from nursery through to Year 6 are taught about how technology is used in the outside world, and in the workplace. **Thoughtful Questioning** that encourages deeper thinking and reasoning. **PHP School Network Shared Folders** allowing children to share their work with their teachers and others. **Online Safety Workshops and Assemblies** are used to teach children and their parents about online safety. **Safer Internet Day** each February to raise awareness within school and the local community about the possible dangers of using the Internet and mobile technologies, and to advise on ways in which to reduce risk.	**Assessment** takes place through: -informal judgements by staff during lessons -formal checklists -next steps, including verbal feedback -pupil and peer assessments At the end of a unit of work teachers make a summary judgement about the work of each pupil in relation to the success criteria outlined at the beginning of the unit of work, and records these judgements termly, onto DCPro. All computing work is stored either in children's work files or on the computers. The computing subject leader keeps samples of the children's work in a portfolio. This demonstrates the expected level of achievement in computing for each age group in the school.	**Resources** Children have access to programmable toys, iPads, digital cameras, tablets, PCs and laptops to allow them to have more opportunities to develop and apply their ICT skills. A range of software is used such as the range of Microsoft Office programmes, Google Classroom software, Movie Maker, Frames Animation, Photostory, Scratch and Espresso Education. We also use a range of iPad apps. **Opportunities to Practise their Skills** Skills such as logging in, saving work, typing and mouse control are further developed in lessons, when children compete on times table tests and games;

	An Embedded 'Relevant' and 'Progressive' Online Safety Curriculum Staff are trained in the area of online safety, and all schemes of work have an online safety focus. Issues such as cyberbullying, online wellbeing, screen time/ addiction, the reliability of information and 'Stanger danger' are discussed in PSHE lessons and assemblies. Children are taught the SMART rules of online safety, and are taught the skills and knowledge that they may need to keep themselves safe online. Parents and the wider community are also engaged in learning in current and key areas of Online Safety through Class Dojo (National Online Safety).	**Online Safety Monitoring** All users of the school's computing equipment are asked to sign our Acceptable Use Policy on induction to the school, and each time they log onto the school's computer network. All of the computers in school are connected to the school's CC4 network. The school uses Policy Central to monitor the use of the school computers, and regular incident reports are sent to the DSL. In line with the school's Behaviour /Anti Bullying Policy, any unacceptable use of the school's computer systems is reported to the DSL and other agencies involved where deemed necessary, and monitoring information is used to improve our online safety policy.	and also when completing regular online reading and maths tests. **E Cadets** There is the opportunity for children across the school to apply for the post and, if successful, attend regular E-Cadet meetings to support keeping children safe online, record pupil voice and complete regular questionnaires to establish current trends and threats and address them with lessons, assemblies and communications to parents.

Impact	PUPIL VOICE Through discussion and feedback, children talk enthusiastically about their computing lessons and speak about how they love learning using a variety of devices and software. Children across the school articulate well about the potential risks of being online and can talk about ways to keep safe.	EVIDENCE IN KNOWLEDGE Pupils know how and why technology is used in the outside world, and in the workplace. They know about different ways that computers, devices and technology can be used. Children have an active knowledge of how to keep themselves safe online and can articulate their contextual knowledge when asked.	EVIDENCE IN SKILLS Pupils use acquired vocabulary in computing, including coding, and online safety lessons. They have the skills to use technology independently, for example accessing age-appropriate software and games in EYFS and using a range of computer software independently in KSI and KS2.	OUTCOMES With support from Lucy Jayes, Teachers plan a range of opportunities to use computer technology, inside and outside school. Pupils will make good progress through both curriculum areas evidenced in network profiles and on summative outcomes on DCPro.