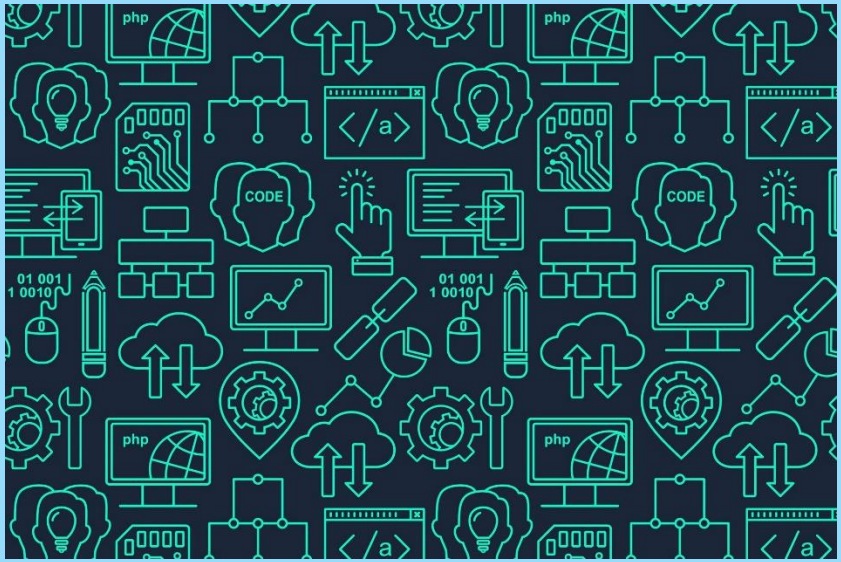
2019

Curriculum Skills and Progression Map
Computing



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Hainford VC Primary School

Computing Curriculum		
Early Years	**Key Stage One**	**Key Stage Two**
Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes	• 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.	• Design, write and debug 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 • Use logical reasoning to explain how some simple algorithms work 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 • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

Skills Map - Computing	
Class 1	
Reception	**Year 1**
E-SAFETY • Can they act if they find something they are unsure of (including identifying people who can help)? • Only use the internet when with an adult. **COMPUTER SCIENCE:** **CODING** • Can they explore and interact with their environment using a range of equipment? (e.g. using a camera to take photos, using an iPad to record videos) • Can they recognize simple icons, buttons or shortcuts? • Can they turn equipment on/off? • Can they explore the functions of a simple programming tool? (e.g. beebot) • Can they begin to plan and test instructions? **DATA** Can they collect information using ICT? (e.g. take photographs, voice recordings, text) **SHARING INFORMATION /DIGITAL LITERACY** • Can they use available applications and software to create original content? • Can they make marks using technology?	**E-SAFETY** • Can they tell you what personal information is? • Can they tell an adult when I see something unexpected or worrying online? • Can they talk about why it's important to be kind and polite? • Can they recognise an age appropriate website? • Can they agree and follow sensible e-safety rules? **COMPUTER SCIENCE:** **CODING** • Can they give instructions to my friend and follow their instructions to move around? • Can they describe what happens when they press buttons on a robot/beebot? • Can they press the buttons in the correct order to make my robot/beebot do what they want? • Can they describe what actions I will need to make something happen and begin to use the word 'algorithm? • Can they predict what will happen for a short sequence of instructions? • Can they use the word 'debug' when they correct mistakes on a program? **DATA** • Can they talk about the different ways in which information can be shown? • Can they use technology to collect information, including: photos, video and sound? • Can they sort different kinds of information and present it to others? • Can they add information to a pictograph and talk about what they have found out? **SHARING INFORMATION/DIGITAL LITERACY** • Can they be creative with different technology to create and present their ideas? • Can they use the keyboard or word bank on a device to enter text?

TECHNOLOGY IN OUR LIVES • Can they recognise different technology in their immediate environment?	• Can they save information in a special place and retrieve it again? **TECHNOLOGY IN OUR LIVES** • Can they recognise ways we use technology in their classroom? • Can they recognise ways we use technology in their homes and community? • Can they use links to websites to find information? • Can they begin to identify some of the benefits of using technology?
Greater Depth	

Skills Map - Computing	
Class 2	
Year 2	**Year 3**
	E-Safety - The child can use digital technology safely and show respect for others when working online The child can recognise unacceptable behaviour when using digital technology

E-Safety • The child can keep safe and show respect to others while using digital technology • The child can understand that they should not share personal information online • The child can understand what to do if they have concerns about content or being contacted online **COMPUTER SCIENCE** **DATA** The child can store, organise and retrieve content on digital devices for a given purpose **CODING** • The child can understand algorithms as sequences of instructions of sets of rules in everyday contexts • The child can program on screen using sequences of instructions to implement an algorithm • The child can give a simple program on screen, correcting any errors • The child can give logical explanations for what they think a program will do **Sharing information -** • The child can create and edit original content for a given purpose using digital technology	The child can know who to talk to about concerns and inappropriate behaviour at school The child can decide whether a web page is relevant for a given purpose or question **RESEARCH** • The child can search for information within a single site • The child can understand that search engines select pages according to keywords found in the content **COMPUTER SCIENCE** **DATA** The child can collect and present information **CODING** The child can design and write a program using a block language, without user interaction • The child can explore simulations of physical systems on screen • The child can plan a project • The child can use sequence in programs • The child can write a program to produce output on screen • The child can explain a simple, sequence-based algorithm in their own words • The child can use logical reasoning to detect errors in programs **Sharing Information** • The child can use a range of programs on a computer • The child can design and create content on a computer • The child can understand that email and videoconferencing are made possible through the internet

Skills Map - Computing		
Class 3		
Year 4	Year 5	Year 6

E-SAFETY a) Use trusted and reliable websites that have been recommended by trusted adults. b) Share advice and information about E-safety using the SMART rules. c) Recognise acceptable and unacceptable online behaviour, relating it to PSHE work. d) Identify how and when to block and flag things that concern them and report it to a trusted adult. **RESEARCH** e) Use the internet to find information using the links on a branching website. f) Copy and paste text and images found online. g) Enter a web address (URL) to find a website. **COMPUTER SCIENCE:** **DATA** h) Create a branching database which identifies a result. i) Enter data into bar graphs. j) Enter data into cells. k) Use 'SUM' to total costs. **CODING** l) Move and edit blocks as part of a simple algorithm m) Write a program which accomplishes a specific goal (e.g. an animation).	**E-SAFETY** a) Identify age appropriate websites, apps and games. b) Share advice and information about E-safety using the SMART rules, acknowledging the link between computing and gaming. c) Recognise acceptable and unacceptable online behaviour, relating it to PSHE work. d) Identify how and when to block and flag things that concern them and report it to a trusted adult. **RESEARCH** e) Use the internet to find relevant information using search engines and key words. f) Copy and paste text and images found online, understanding the issues of copyright. g) Use a favourites list to find a website. **COMPUTER SCIENCE:** **DATA** h) Create a flowchart with inputs and outputs. i) Enter data into line graphs. j) Enter data and formulae into cells. k) Create and use a spreadsheet to manage costs. **CODING** l) Write procedures as part of an algorithm. m) Write a program which has instructions with actions and consequences (e.g. a quiz or game). n) Use REPEAT/ FOREVER commands for repetition and loops.	**E-SAFETY** a) Know the age-ratings of popular websites, apps and games. b) Share information about the benefits and skills associated with E-safety, including SMART rules. c) Use case studies to explain the E-Safety difficulties experienced by young people, relating it to PSHE work. d) Identify how and when to block and flag things that concern them and report it to a trusted adult. **RESEARCH** e) Use the internet to find relevant information using search engines and more precise search techniques (e.g. AND or quotation marks). f) Copy and paste text and images found online, acknowledging the source of information. g) Make their own favourites list for revisiting websites. **COMPUTER SCIENCE:** **DATA** h) Create a flowchart and modify symbols for effect. i) Enter data into pie charts. j) Enter data and formulae into cells to create tables of results.

n) Create a program that includes a logical sequence o) Use IF/THEN commands for selection. p) Debug a program to ensure a desired outcome. **SHARING INFORMATION** <u>Design:</u> q) Comment on the layout of a good page design. r) Create a new page and choose an appropriate provided design layout. s) Use appropriate font effects and edit text using delete, cut, paste and spellcheck. t) Frame an appropriate filming or photography shot. <u>Content:</u> u) Insert an image from their files. v) Create a hyperlink to a file. w) Draw or insert 2D shapes and lines or simple 3D models using appropriate tools (e.g. shape, brush, image, clipart). x) Add appropriate sound effects and music. y) Import video files into video editing software and arrange video files to form a complete film. <u>Communication:</u> z) Create presentations that present an appropriate sequence of information for the audience.	o) Decompose a program down into smaller separate steps. **SHARING INFORMATION** <u>Design:</u> p) Identify the features of good page design. q) Add pages and links using a provided design layout. r) Use editing tools to write genres of texts and present the reader with clear information (bullet points, headings, bold, underline, italics…). s) Use a variety of camera angles to capture and record shots. <u>Content:</u> t) Insert and edit the format of an image. u) Create a hyperlink to a web address (URL). v) Draw and manipulate 2D shapes and 3D models using different tools and features (e.g. shape, outline, effects and fill). w) Record and add a narration. x) Import video files into video editing software to edit and refine their movie project. <u>Communication:</u> y) Create presentations that present clear and relevant information for a target audience. z) Share information online, understanding that online activity leaves a digital footprint. aa) Use emails to communicate with others to share information and ideas.	k) Create and use a spreadsheet to manage costs. **CODING** l) Create sophisticated algorithms and procedures m) Write a program which has instructions with actions and consequences (e.g. a quiz or game). n) Include procedures with variables (e.g. keeping score). o) Decompose a program down into smaller separate steps to debug or improve the outcome. **SHARING INFORMATION** <u>Design:</u> p) Identify and evaluate the features of good page design. q) Design pages and links which are clear and easy for a user to navigate (home, contents, title pages). r) Use editing tools to write genres of texts and present the reader with clear information (header, footer, margins, orientation columns…). s) Use a variety of appropriately framed camera angles to capture and record clear shots. <u>Content:</u> t) Insert images they've photographed or scanned.

aa) Share information online, understanding who can read it. bb) Read and send e-mails with a file attached, knowing how to save a draft to revisit later.		u) Create a hyperlink to a web address (URL). v) Draw and manipulate 2D shapes and 3D models using different tools and features (e.g. position, flip rotate, crop). w) Record and add a sequence of narration. x) Import video files into video editing software to edit and refine their movie project and when necessary, redo shots that compromise quality. <u>Communication:</u> y) Create multimedia presentations that present clear, relevant information for a target audience. z) Share information online, understanding that online activity leaves a digital footprint. aa) Use emails to communicate with others to share information and ideas.
Greater Depth		
Can they independently use a variety of technology to perform a variety of tasks?	Can they independently build on their existing knowledge to experiment and innovate with different functions and tools to further enhance and improve their work?	Can they consistently and independently use technology safely, respectfully and responsibly, whilst producing work that is clear for the user, meets the needs of the intended audience and is of high quality?