St Peter's C of E Primary School

Computing Progression

'Let Your Light Shine'

Matthew 5:16

Computing EYFS

	Computer Science	Information Technology	Digital Literacy
	Children will be able to recognise that technology is used in many different places. They will be able to recognise the main parts of a computer including the keyboard, mouse, screen and computer. Children will be able to understand that a digital device can be programmed with different instructions.	Children will be able to recognise that a keyboard had numbers and letters. They will be able to recognise the numbers and letters whilst using a keyboard. Children will be able to use the keyboard to produce words on the screen. The children will be able to experiment using different hardware/software to make digital art. They will also be able to be able to complete a simple program on a computer.	The children will be able to use different websites, programs, and apps with guidance. They will know where they can go for help and support whilst online and they will understand the importance of asking for help from an adult when online. Children will be aware that some online content is not appropriate, and that information can be public and private and they will know the difference. They will age-appropriately understand the risk of talking to strangers online.
EYFS	• Recognise that a range of technology is used in places such as homes and schools. • Identify the main parts of a computer. • Understand that a digital device can be programmed with one or more instructions. • Follow simple algorithms to make things happen e.g. cleaning teeth.	• Learn how to recognize and type letters using a keyboard. • Begin to combine letters to make words on screen. • Explore combining painting tools to make digital art. • Complete a simple program on a computer	• Navigate around websites and programs / apps with guidance. • Know where to go for help or support when online. • Understand the importance of asking for help from an adult when online. • Begin to understand that some online content is inappropriate. • Be aware that information can be private or public and recognise some information that should be kept private. • Understand digital content can be shared online. • Begin to understand the risks of talking to strangers online. • Listen and respond to stories, songs and presentations with an online safety theme.

Computing Key Stage 1

	Computer Science	Information Technology	Digital Literacy
	Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous of instructions Create and debug simple programs Use logical reasoning to predict the behaviour of simple programs	Recognise common uses of information technology beyond school Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Use technology purposefully to create digital content Use technology safely and respectfully, keeping personal information private; Identify where to go for help and support when they have concerns about context or contact on the internet or other online technologies
Year 1	• Understand what algorithms are and develop strategies to help find bugs in them. - *Discovery Education Coding – Unit 1b)* • Make very simple programs. - *Discovery Education Coding – Unit 1a)*	• Use technology with support, to create, store and retrieve digital content such as text and images. - *Using Purple Mash, children can physically sort, collate, edit, present, search through, re-order, and restructure items using a range of given criteria (unit 1.2 lesson 2)* • Use a simple search to find information or files. - *Using Purple Mash, children can physically sort, collate, edit, present, search through, re-order, and restructure items using a range of given criteria (unit 1.2 lesson 2)* • Develop understanding of how simulations work through exploring simple examples (optional). - *Children can use the 'My Story' aspect of '2create a story' on Purple Mash to create an interactive story (unit 1.6 lesson 1)*	• Recognise common uses of information technology beyond school. • Understand the rules and responsibilities outlined by the school's acceptable use policy and begin to understand where to go for help when pupils have concerns. • Develop an understanding of how to keep their personal information private and understand they need to use technology safely and respectfully.

Year 2	• Use algorithms and know that they can be implemented as programs on devices. • Discovery Education Coding – Unit 2a) • Know what debugging is and can find errors in their programs • Discovery Education Coding – Unit 1b) • Understand that programs execute by following a precise set of instructions. -Discovery Education Coding – Unit 2a) • Create simple programs and further develop their strategies and logical thinking to find bugs and predict outcomes in their algorithms and programs. - Discovery Education Coding – Unit 2b)	• Use technology with purpose to create, store, organise, retrieve and manipulate digital content. - *On Purple Mash, children can use '2count' to crate simple pictograms to represent data. Children will also store and retrieve date (unit 2.4)* • Learn to make a range of simple digital assets such as presentations, movies, audio files and graphs. – - *Children can use '2animate' on Purple Mash to create a simple animation.* • Navigate the web and carry out simple searches using suitable search engines and begin to understand that not everything on the internet is true. - *Children can effectively retrieve relevant , purposeful digital content using a search engine (Purple Mash Unit 2.5)* • Use simple simulations and understand how they work (optional). - *On Purple Mash, children can efficiently store and retrieve their work from a saved area (unit 2.8)*	• Know their responsibilities from their school's acceptable use policy and how to report any concerns they have. • Recognise situations using technology and the internet involving content and contact that are not safe and know where to go for help. • Begin to develop an understanding of the importance of computers and the internet to communicate. • Develop their knowledge of the technology used in everyday life in a range of situations and are able to discuss their ideas. - *This can be linked to everyday technology such as microwaves, washing machines, ovens etc.*

Computing Key Stage 2		
Computer Science	**Information Technology**	**Digital Literacy**
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	Use technology safely, respectfully and responsibly; recognize Acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 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

Year 3	• Plan and write algorithms and programs using sequence and repetition and further develop their computational thinking strategies to solve problems and errors in their algorithms and programs. - *Discovery Education – Coding – Unit 3a* • Have knowledge and experience of using a range of different inputs and outputs and a basic understanding of the binary system. - *Examples of input devices include a keyboard, a mouse, a microphone, and a webcam. Output devices include speakers, monitors and printers.* • Describe some of components of a computer network and some of the ways in which computer networks can be used	• Use a variety of software and devices to create digital assets such as programs, graphs and multimedia content for a defined purpose. - *Multimedia - children to be given a purpose to create a PowerPoint e.g., create a PowerPoint about Roald Dahl.* - *Graphs- children can enter data on a given number of fields and then present their data as a graph (Purple Mash – unit 3.8)* • Develop their search strategies further by refining their use of keywords and starting to use appropriate key phrases and questions. - *Use a search engine to develop search strategies for example type in 'apple' then use the tools to define 'size', 'colour', type etc.* • Use more complex simulations and understand the effects of changing variables. - Children can analyse and evaluate information relating to the situations in the activities. (*Purple Mash - unit 3.7)*	• Use technology safely and respectfully and have an understanding of how to keep information secure. • Realise the importance of reporting any concerns they have using the internet and other communication technologies and know some ways of they can do it. • Develop an understanding of what is acceptable and unacceptable online behaviour. • Realise that not all information on the internet is trustworthy and there is a need to verify its reliability. - *Link to BBC April Fool's day – can penguins fly https://youtu.be/9dfWzp7rYR4*

Year 4	• Design and write more complex algorithms and programs using sequence, repetition and selection. - *Discovery Education – Coding – Unit 4b)* • Further develop their computational thinking to help debug their programs and design and solve problems and tasks. - *Discovery Education – Coding – Unit 4a and 4b)* • Have a simple understanding of how search engines work. - *Children understand the function, features and layout of a search engine. Children can locate information relevant to their search and appraise the selected webpages for credibility and information. (Purple Mash – unit 4.7)* • Develop their understanding of inputs, binary and outputs further, demonstrating how they can use programs to control external devices such as sensors, motors and robots. - *Binary activities – CS Unplugged https://classic.csunplugged.org/binary-numbers/* • Understand the difference between the internet and World Wide Web. - *Introduction: Can you draw the internet?*	• Use and combine a variety of software and devices with increasing independence, to create a range of digital assets such as programs, databases, systems and multimedia content. - *Multimedia - children to be given a purpose to create a PowerPoint and add images/sounds. Children can also use other apps such as the book creator app to create a comic.* - *Graphs - Children will design a graph to solve a mathematical problem. Children will present, format and analyse their data and information in a variety of ways and ue their spreadsheets to solve and check mathematical problems and concepts (Purple Mash – unit 4.3)* • Understand how search operators (e.g. Boolean operators) can change searches and select appropriate information for their tasks. - *Children understand the function, features and layout of a search engine. Children can locate information relevant to their search and appraise the selected webpages for credibility and information. (Purple Mash – unit 4.7)* • Use models and simulations to produce graphs and explore patterns and relationships. Use programming software to make simple simulations (CS).	• Use technology respectfully, responsibly and safely, knowing how to keep their information and passwords secure. • Know different ways of reporting concerns about content and contact involving the internet and other communication technologies. • Have a greater understanding of what is acceptable and unacceptable online behaviour. • Start to develop strategies to verify the reliability and accuracy of information on the internet and develop an awareness of to join copyright.

	- *TedEd – What is the World Wide Web? https://ed.ted.com/lessons/what-is-the-world-wide-web-twila-camp* - *Children recognise the main component parts of hardware which allows computers to join and form a network (Purple mash – unit 4.8)*	- *Children can 'read' logo programmes with several steps and predict the outcome accurately (Purple mash – unit 4.5)*	

Year 5	• Design and write programs using sequence, repetition, selection and variables. • *Discovery Education – Coding – Unit 5a* • Develop greater understanding of how to use selection and repetition in more complex programs. • *Discovery Education – Coding – Unit 5a and 5b* • Understand how search engines work. Further develop their computational thinking showing they can plan and decompose tasks; explain how the algorithms they write work and correct errors in their programs. - *Discovery Education – Coding – Unit 5a and 5b)* • Plan and write programs to control external devices such as sensors and motors and can explain about the inputs and outputs used.	• Select, use and combine a range of software and use a wider range of devices to create a variety of digital assets such as programs, systems, databases, spreadsheets and multimedia content for a defined purpose. - *Multimedia - Children to be give given a presentation to create. Children to choose which software to use and be able to explain why it is best.* - *Spreadsheets- Microsoft Excel – children to make a spreadsheet independently linked to a real life situation e.g. school trip, summer fair.* - *Databases – Children can contribute to the design of a collaborative and individual database. They can design and enter information accurately into their own database and create questions (Purple Mash – unit 5.4)* • Understand about the use of operators in searching and continue developing their effective search techniques by using different operators in their searches. - *Children to learn about the use of operators in searching such as "or " and " – "* • Create simple models/simulations to investigate real life problems. Use	• Use technology safely, respectfully and responsibly and continue to develop skills to identify risks involved with contact and content including developing an understanding of digital footprints and online reputation. • Know a range of ways of reporting concerns about content and contact involving the internet and other communication technologies, including online bullying and online grooming. • Understand what acceptable and unacceptable online behaviour is. • Use strategies to verify the reliability and accuracy of information on the internet such as fake news and understand copyright.

		programming software to make simulations (CS). - *This is linked to science to investigate real life problems.*	

Year 6	• Know how search engines work and what 'ranking' is when related to search engines. • *Purple Mash – Unit 6.2* • Design and create more complex programs using sequence, repetition, selection and variables appropriately. - *Discovery Education – Coding – Unit 6a and 6b* • Develop their computational thinking and can demonstrate that they can decompose and evaluate their tasks and correct errors in their algorithms and programs. - *Discovery Education – Coding – Unit 6a* • Confident in their knowledge of binary, inputs and outputs and can plan and write programs to solve tasks to control external devices such as sensors and motors. - Binary – CSunplugged – Binary activities • Know how different computer networks work, including the roles of the components and the opportunities and benefits that they offer for communication and collaboration. - *Linked to real life situations e.g:* **Create a podcast (Audacity)* ** Blog that links to other subjects.*	• Independently select, use and combine a wide range of software on a variety of devices. • Design and create a range of digital assets such as programs, systems and multimedia content for a defined purpose and audience. - *Children to be set a challenge and need to present a real-life situation for example create a new theme park in different ways e.g. use a PowerPoint to advertise, use spreadsheets to show mathematical equations etc.* • Use advanced searches and a range of operators in searches. - *Linked to ranking.* *For example: create a table, search "the plague", use an effective search, add to the table, define again etc.* • Create models to investigate real life problems, using their knowledge to make predictions. - *This is linked to science to investigate real life problems.*	• Competent users of technology using it safely, respectfully and responsibly and know about self-image and identity. • Demonstrate that they can identify the risks involved with content and contact and they know a wide range of ways of reporting any concerns they have. • Understand what acceptable and unacceptable online behaviour is. • Use strategies to verify and evaluate the reliability and accuracy of information on the internet and understand what copyright and plagiarism is and how it relates to their work. - *Linked to who own the website e.g. org.uk – charities* - *co.uk – English website* - *.com – American website* - *Gov.uk – government website.*