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| **Ackton Pastures Primary Academy****Computing** |
| **Technology is developing and is a huge part of today’s society. Pupils will develop many skills such as problem solving, using logical reasoning, communicating through technology, presenting their work using various software, creating charts and navigating the online world safely and confidently.** |
| Digital Literacy |
| Key Stage One  | Lower Key Stage Two | Upper Key Stage Two |
| Knowledge  | * How did people communicate before computers, laptops and ipads.
* How do you keep yourself safe?
 | * Who invented the email? When was the first email sent?
* Who invented the internet?
* How are websites and search engines different?
 | * What impact does emailing have on today’s society?
* How has the internet changed over time?
* How do you know data is accurate?
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| Skills | D1 To recognise common uses and purposes of technology beyond school. D2 Use Technology safely and respectfullyD3 Keep information privatelyD4 Identify where to go for help / support when they have concerns | D1 Understand how internet offers opportunities for communication and collaboration.D2 Use videoconferencing across the curriculum to explain world view as well as understanding of technology. D3 Follow a simple search to find specific information from a web site safely. D4 Appreciate how results are selected and ranked.D5 Find and use appropriate information. Identify how different web pages are organised e.g. graphics, hyperlinks, text. | D1 Share and exchange their ideas using e-mail and electronic communication- inside the school environment.D2 Talk about the different forms of electronic communication and web tools and discuss appropriateness of using different tools in different contexts and their advantages and disadvantages. D3 Recognise that the Internet may contain material that is irrelevant, bias, implausible and inappropriate.D4 Understand issues of copyright and how they apply to their own work.D5 To demonstrate knowledge of e-safety and the consequences of inappropriate online activity D6 Use a range of sources to check validity and recognise different viewpoints and the impact of incorrect data. D7 Pupils collaborate on a project using a range of web tools to support their work- including, but not limited to google docs / sites / wikis. |
| Vocabulary | technologypurposes E-safetycyberbullyingpersonal informationprivate | Tier 2: Internet, communicate, results, website, addressTier 3: World Wide Web (WWW)navigateweb pagedynamicssearch engine | trustworthydigitaladvertbrowsersecureplagiarismprivacy citation/cite, | Previous tier 2 and 3 vocabulary LKS2. Tier 2: communicationenvironmentsourcesvaliditydataviewpointscollaborate | Tier 3:electronic communicationimplausiblecopyrightweb toolsauthoritysponsored linkadvertisingpublishspamvirus |

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| Computer Science |
| Key Stage One | Lower Key Stage Two | Upper Key Stage Two |
| Skills | C1 Understand the purpose of a range of different technology, e.g. tablets, laptops, microphones, cameras etc.C2 To understand what algorithms are and how we use them | C1 Design and create a range of programs, systems and content  | C1 Develop understanding of how technology works; how computers process instructions and commands, including the use of coding languages. (Scratch)C2 Deconstruct and investigate the effect of changing variables in simulations. (Scratch and Program) C3 Use assisted programing software, then more complex programing software which interacts with external controllers, and elements on screen, creating algorithms and using logic and calculations. (program)  |
| Vocabulary | Technologytabletslaptopsmicrophone  | applicationsplatformvariablesinvestigation  | scriptgradientanimateanimationiterationtransition |
| Skills | C3.Create and debug simple programs. (Beebots). C4 Create precise and unambiguous instructionsC5 Use logical reasoning to predict behaviour of simple programmes | C2 Design, write and debug programs that accomplish specific goals. (Scratch)C3 To use logical reasoning to explain how some simple algorithms work. C4 Create, edit and refine more complex sequences of instructions for a variety of programmable devices. (Scratch)C5 Use templates on a computer to create a game, which can be controlled by external inputs, changing parameters and algorithms and investigating the effect this has on the response. (Scratch) |  |
| Vocabulary | AlgorithmsDebugDataProgrampreciselogical reasoningevaluate, arrow buttons  | clear screen (sc) variablerotatespriteblockbackground/backdroppros, cons,decomposelogical sequenceflowchartspritevariables |  |
| Skills |  | C6 Work with various forms of input and output.C7 Understand that ICT allows for situations to be modelled which it would be impractical to try out in real life and investigate the effect of changing variables in these simulations |  |
| Vocabulary |  | inputoutputvariablessimulations,impracticalinappropriateinvestigate |  |

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| Information Technology |
| Key Stage One | Lower Key Stage Two | Upper Key Stage Two |
| Skills | I1 To use technology purposefully to create digital content, begin to save and retrieve pictures and text (PowerPoint, Microsoft Word – children will need to already have prior knowledge of login on to a laptop, locating and launching the programs needed) | I1 Know that ICT enables access to a wider range of information & tools to help find specific information quickly. |  |
| Vocabulary  | Word processorlaunchtypeshift keycaps lockundo, redo, bold, italic, edit,backspace, arrow keys, format, font, print, layout, insert.  | Searchbrowsers,  |  |
| Skills  |  | I2 Produce work using a computer, using more advanced features of programs and tools. (Microsoft, Publisher) - Use desk top publishing tools effectively and understand the differences between a word processor and desk top publisher.I3 Work collaboratively to create documents, including simple presentations.  | I2 Use technology to present their work, showing an increasing degree of skill and using advanced features of software and tools. (publisher, iMovie etc) Select tools which they can use to help them achieve a specific aim and justify these choices to others.I3 Understand the importance of evaluation and adaptation of individual features to enhance the overall product. Pupils continue to use, search, enter data into and create their own databases. |
| Vocabulary |  | aligncopyrightbulletsreviewspellingspellcheckadd to dictionaryhighlight, themeslideaudioembed | productionaudio and video segmentstimelinetransitionspublishconvert |
| Skills  | * I4 Begin to use an appropriate search engine supported by an adult. (google, yahoo, Bing and Kidrex)
* Use navigation skills to access appropriate parts of a website.
* Follow age-appropriate links provided by the teacher to research information.
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| Vocabulary  | Search enginesearch enginebrowser toolbarresearch,layoutappropriatelink, | webpagedigital footprinttrailonlinewebsite contentkeywords. |  |  |

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| 1. **Support**
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| [https://www.stem.org.uk/resources/search?f[0]=field\_subject:92](https://www.stem.org.uk/resources/search?f%5b0%5d=field_subject:92)  | STEM: Computing resources linked to NC objectives. Teaching notes, activities and worksheet to enable to complete objectives not just on digital devices.  |
| <https://www.twinkl.co.uk/resources/planit-primary-teaching-resources/planit-computing-primary-teaching-resources> | Planit Computing scheme of work (Twinkl) for help with resources/planning/progression. |
| <http://www.sketchnation.com/lesson_ideas_storytelling.html>  | Sketch nation  |
| <https://www.childnet.com/>  | Childnet International, a non-profit organisation working with others to help make the internet a great and safe place for children. |
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| 1. **Vocabulary: Glossary of Terms and Progressive Vocabulary Map**
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| **Glossary of Computing terms** |
| **Digital literacy**  | Individual's ability to find, evaluate, and compose clear information through writing and other mediums on various digital platforms. |
| **Computer science**  | It is the study of both **computer** hardware and software design. It encompasses both the study of theoretical algorithms and the practical problems involved in implementing them through **computer** hardware and software. |
| **Information technology**  | It is the use of computers to store, retrieve, transmit, and manipulate data, or **information**, often in the context of a business or other enterprise. |
| **data** | A structured set of numbers, representing digitised text, images, sound or video, which can be processed or transmitted by a computer.  |
| **debug** | The process of identifying and removing errors from instructions or programs.  |
| **program** | A stored set of instructions encoded in a language understood by the computer that does some form of computation, processing input and / or stored data to generate output.  |
| **Information**  | The meaning or interpretation given to a set of data by its users, or which results from data being processed. |
| **internet** | The global collection of computer networks and their connections, all using shared protocols (TCP/IP - transmission control protocol/internet protocol) to communicate.  |
| **e-safety**  | This is how to make sure you are safe when using the Internet. |
| **Web browser** | This is an application used to access and view websites. Common **web browsers** include Microsoft **Internet** Explorer, Google Chrome, |
| **World Wide Web**  | A service provided by computers connected to the internet (web servers), in which pages of hypertext (web pages) are transmitted to users; the pages typically include links to other web pages and may be generated by programs automatically. |
| **Software** | Computer programs, including both application software (such as office programs, web browsers, media editors and games) and the computer operating system. The term also applies to ‘apps’ running on mobile devices and to web-based services. |
| **Hardware** | The machines, wiring, and other physical components of a computer or other electronic system |