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|  | **Year 1/2** | **Year 3/4** | **Year 5/6** |
| **Computer Science** | 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 | Pupils should be taught to:   * design write and debug programs that accomplish specific goals,…..solve problems by decomposing them in smaller parts * use sequence, selection and repetition in programs * use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs | Pupils should be taught to:   * design, write and debug programs that accomplish specific goals; including   controlling or simulating physical systems and solving 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 |
| Pupils learn to program a basic floor turtle such as a  BeeBot to navigate increasingly complex routes and are able to debug their instructions when the turtle does not reach the intended destination  Pupils learn to program an onscreen app such as BeeBot to complete a set task and are able to debug their instructions when the turtle does not reach the  intended destination  Pupils use a more complex turtle with standard units to navigate increasingly complex routes, and are able to debug their instructions when the turtle does not reach the intended destination  Extension - Pupils learn to use a simple graphical programming language such as Scratch or Turtle to navigate around the screen | Pupils learn to use graphical programming language, such as Scratch to draw regular 2D shapes. Pupils add loops or procedures to create a repeating pattern  Pupils learn to sequence instructions, for instance to  create an animation using Scratch.  Pupils write a simple algorithm, for instance to create a basic traffic light sequence. They then use flowcharting software (such as Go or Flowgo) to  create a simple program to control an onscreen icon  Extension - Pupils create a simple game using  Scratch | Pupils write a simple algorithm, for instance to create a basic traffic light sequence. They then use flowcharting software (such as Go or Flowgo) to create a simple program to control an onscreen icon. They are able to explain how their program works  Pupils create a computer game, using a graphical language such as Scratch |

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|  | **Year 1/2** | **Year 3/4** | **Year 5/6** |
| **Computer Science continued** | Pupils should be taught to:   * recognise common uses of information   technology beyond school | Pupils should be taught to:   * recognise common uses of information   technology beyond school | Pupils should be taught to:   * 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 |
| Pupils learn about some of the uses of the internet | Pupils learn to collaborate electronically by blogging  - mailing and working on shared documents. | Pupils learn to collaborate electronically by blogging  -mailing, and working on shared documents. This can be extended to working with other schools  Pupils learn that connected devices exchange packets of data and this can convey a range of information from a text to a video call |

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|  | **Year 1/2** | **Year 3/4** | **Year 5/6** |
| **Digital Literacy** | Pupils should be taught to:   * use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content on the internet or other online technologies | Pupils should be taught to:   * Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact | Pupils should be taught to:   * use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concerns about content and contact |
| Pupils learn that the Internet is a great place to develop rewarding online relationships and learn to recognise websites that are good for them to visit; but they also learn to be cautious and to check with a trusted adult before sharing private information  Pupils are introduced to the concept that real people send messages to one another on the Internet and learn how messages are sent and received. They recognise that it may be difficult to distinguish  between someone who is real and someone who is  not  Pupils are introduced to the basics of online searching  Pupils learn to explore websites and to say whether they like them or not and why | Pupils learn that the Internet is a great place to develop rewarding online relationships and learn to recognise websites that are good for them to visit; but they also learn to be cautious and to check with a trusted adult before sharing private information  Pupils learn to make good passwords for their accounts, learn about spam and how to deal with it. They begin to understand the implications for the information that they share online and how some websites might use that information without their knowledge  Pupils are introduced to their roles as digital citizens in an online community, where they reflect on how  they are responsible not only for themselves but for others, in order to create a safe and comfortable environment  Pupils learn that the Internet is a public space and then develop the skills to protect their privacy and respect the privacy of others | Pupils learn that the internet is a great place where online relationships can be developed. They compare and contrast online friends and real life, face to face  friends and learn how to respond if an online friend asks them a personal question  Pupils learn to create secure passwords for their accounts, learn about spam and how to deal with it, and decode website privacy policies, understanding the implications for the info that they share online  Pupils explore their roles as digital citizens in an online community, where they reflect on their responsibilities and learn that good digital citizens are responsible and respectful in the digital world  Pupils begin to explore the nature of online audiences and permanency of information online. They begin to understand the significance of published information and personal information  Pupils understand what it means to be a good digital  citizen as they interact with others online by understanding how to prevent and respond to cyberbullying. They also learn how to communicate  effectively to prevent miscommunication in order to be a responsible member of a connected culture |

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|  | **Year 1/2** | **Year 3/4** | **Year 5/6** |
| **Digital Literacy continued** |  | continued  Pupils explore how they interact with others and are introduced to the concept of cyberbullying. They also learn how to communicate to be a responsible member of a connected culture effectively in order  to prevent miscommunication | continued  Pupils begin to consider the impact of their online presence on their own self- image and the way others see them and explore how to construct a positive online profile  Pupils learn the ‘do’s and don’ts’ of copying and pasting information to avoid plagiarism. They learn how to avoid plagiarism by putting information in  their own words, putting excerpted information into quotes, and providing citations. They learn to show respect for other people’s creations by giving them credit |
| * use search technologies effectively, appreciate how results are selected and ranked and be discerning in evaluating digital content | * use search technologies effectively, appreciate how results are selected and ranked and be discerning in evaluating digital content |
| Pupils are introduced to the basics of online searching, including how to use effective keywords.  They also learn to conduct searches that provide  them with the most helpful and relevant information | Pupils explore issues relating to online searching, including how to use effective keywords, using directories and subject categories, and how to analyse the usefulness and relevancy of the results. They learn to conduct searches that provide them with the most helpful and relevant information  Pupils develop skills for evaluating websites, online information and advertising by rating the  trustworthiness and usefulness of websites, and learning to identify the different types of online advertising |

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|  | **Year 1/2** | **Year 3/4** | **Year 5/6** |
| **ICT** | Pupils should be taught to:   * use technology purposefully to create, organise, store, manipulate and retrieve digital content | Pupils should be taught to:   * 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 | Pupils should be taught to:   * 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 |
| Digital Publishing: Pupils learn to use basic word processing package and to write and illustrate a short story  Presentation: Pupils learn to make simple presentations  Graphics: Pupils learn to create a simple digital painting  Animations: Pupils learn to make a simple animation for instance in Scratch  Media: Pupils learn to use digital cameras and microphones for a purpose  Working with data: Pupils learn to create and use a bar graph  Communication: Pupils use email to communicate safely. | Presentations: Pupils learn to write and deliver a presentation on a given subject – marketing a toy  Graphics: Pupils learn how to take, adapt or create images to enhance or further develop their work  Animations: Pupils learn how to develop an educational game, use Scratch to design a toy and animations  Sound and video: Pupils record and edit media to create a short sequence and produce digital music, experience video conferencing  Working with data: Pupils learn to search, sort and graph information  Internet: Edit HTML and produce a Wiki | Encryption: Pupils learn about Morse code, semaphore and the importance of encrypting important data  Presentations: Pupils learn to research a topic online, write and deliver a presentation, incorporating a range of media  Graphics: Pupils learn how to create art on the computer with geometry.  Animations: Pupils learn how to develop an interactive game.  Sound and video: Pupils create an app as a yearlong project |