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| **Strand** | **Year 3** | **Year 4** |
| **Computer Science** **(Algorithms and Programming)**Link to NC statements:Pupils should be taught to: * 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
 | * To read a simple algorithm
* To use an algorithm to create a program
* To know when there is a bug in my program
* To use a simple sequence in a program
* To use a simple repetition (loops/repeat commands) in a program
* To decompose (break up into smaller parts) a problem both on and off screen
* To predict (using logical reasoning) problems in a program
* To test my program and recognise when I need to debug it.
 | * To read a simple program and predict what will happen
* To design an algorithm for a program (including with pencil and paper)
* To use a more complex sequence in a program
* To use a program that controls or simulates control of a physical system
* To begin to see similarities and differences between programming languages
* To predict (using logical reasoning) problems (bugs) in a program
* To predict (using logical reasoning) how to debug a problem in a program
* To use logical thinking to solve an open-ended problem by breaking it up into smaller parts (decompose). .
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| **Understanding technology (Communication and Networks)**Link to NC statements: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
 | * To know examples of inputs
* To know examples of outputs
* To know how computers can form a local network
* To say when I am and when I am not using an online technology
* To be able to save and retrieve work on the Internet, the school network or my own device.
* To begin to talk about the parts of a computer
* To be able to describe the World Wide Web as the part of the Internet that contains websites.
* To use search tools to find an age appropriate website.
* To think about if I can use images that I find online in my own work.
 | * To know and give examples of inputs used
* To know and give examples of outputs used
* To know there is a difference between the Internet and the World Wide Web
* To recognise some of the services offered by the internet for communication and collaboration
* To be able to identify key words to use when searching safely and effectively on the World Wide Web.
* To begin to know how to check who owns photos, text and clipart.
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| **Digital Literacy (Data & Data Representation, Hardware & Processing and Information Technology):** Link to NC statements:Pupils should be taught to: * 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
 | * To know what an app or application is
* To use technology to create simple digital content e.g. documents, film etc.
* Give example of an app used and some of the skills learnt, e.g. iMovie
* To combine a mixture of text graphics and pictures
* To combine a mixture of text, graphics, pictures and sound/film
* To create and save using a word processing app e.g. Word
* To print out my digital work
* To use an increasing number of digital resources and apps
* To collect data to help me answer a question.
* To present data as information for an audience
* To know some examples of search technology
* To choose good key words when searching the internet
* To use a data logger to monitor changes and can talk about the information collected
* To evaluate my work and improve its effectiveness.
 | * To use a presentation app e.g. PowerPoint
* To create, modify and present documents or other media for a particular purpose.
* To use an appropriate tool to share my work and collaborate online e.g. a wiki.
* To give feedback to my peers to help them improve their work and refine my own work.
* To collect data and identify where it could be inaccurate.
* To plan, create and search a database to answer questions
* To choose the best way to present data to my friends.
* To use a data logger to record and share my readings with my friends
* To evaluate my work and improve its effectiveness by thinking about the audience it is aimed at
* To identify key words to use when searching safely online
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| **E-safety**Over lower and upper key stage 2 pupils will have increasing knowledge and skills with each statementLink to NC statements: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.

Linked to SWGFL plansAnd Be Internet Legends plans | * To be familiar with the Be Smart e-safety rules
* To know how to comment and discuss another person’s work respectfully either offline or online
* To know some things, I can share and some I should not share
* To know when to ask for another person’s permission when sharing online
* To identify risks about who and who not to contact online
* To know who to contact about content or contacts that worry me
* To recognise acceptable and unacceptable behaviour when online
* To know about passwords and begin to create good ones and keep them safe
 | * To be familiar with the Be Smart e-safety rules
* To comment positively and respectfully
* To explain how to check who owns photos, text and clipart (copyright)
* To check the reliability of the information I find or that appears on my device
* To protect myself and my friends from harm online, including reporting concerns to a trusted adult
* To I know that anything I share online will stay there to be seen and used by others
* To choose apps, games and websites that are appropriate for my age and explain my reasons to friends
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