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| **Strand** | **Year 5** | **Year 6** |
| **Computer Science (Algorithms and Programming)**  Link to National Curriculum:  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 more complex program * To explain (using logical reasoning) how a particular algorithm works * To design and refine an algorithm for a program (including with pencil and paper) * To create a program that achieves what I want to make * To decompose a program into smaller steps * To use a more complex sequence in a program and begin to explain it * To use repetition (loops) in a program and explain what is happening * To detect (using logical reasoning) a bug and debug that problem in a program * To use selection, “if “, and, “then” * To use a range of inputs and outputs that control or simulates control of a physical system * To see similarities and differences between programming languages * To use a variable | * To read a more complex program and predict what will happen * To design a more complex algorithm (including with pencil and paper) * To create a more complex program to accomplish a specific goal * To refine my program after testing it * To decompose a program into smaller steps and use that to help me work more efficiently on it * To recognise similarities to solutions used before when creating programs and debugging * To use sequences, repetition selections and variables in a program * To continually test my programming * To use a range of inputs (including sensors) and outputs that control or simulates control of a physical system * To explain (using logical reasoning) how some algorithms work * To detect (using logical reasoning) a bug and debug that problem in an algorithm. |
| **Understanding**  **Technology**  **(Communication and Networks)**  Link to National Curriculum:  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 explain how computer networks work * To know some of the other services besides the web provided by the Internet * To begin to know how search results are ranked * To describe different parts of the Internet. * To use online communication tools e.g. blogging. * To use a search engine to find relevant information * To check the reliability of information found online * To begin to know which resources on the Internet I can download and use * To talk about how websites advertise their products to me | * To know how information is transported on the Internet * To begin to know how data travels across networks in packets * To know how data is broken up into packets and reconstructed when we receive it * To understand the multiple services provided by the Internet * To select appropriate tools for online communication and collaboration * To check the reliability of a website * To talk about copyright and begin to acknowledge the sources of information that I find online. * To know that websites can use my data to make money and target their advertising |
| **Digital Literacy (Data & Data Representation, Hardware & Processing and Information Technology):**  Over lower and upper key stage 2 pupils will have increasing knowledge and skills with each statement  Link to National Curriculum:  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 use and combine text, photo, sound and video editing tools to refine my work * To use digital devices to take good photos * To use effects on digital devices to produce effective art/photos/pictures/movies etc. (e.g. green screen) * can make good choices about which digital content to use * can make good choices when deciding which digital resources and digital devices to use * To collect and analyse different types of digital data * To use data collected to present the data as information for a variety of audiences * To check the reliability and usefulness of digital content found when searching * To use a spreadsheet and database to collect and record data * To use data-logging digital devices to investigate changes around me * To review, evaluate and improve my own and others’ work * To talk about possible mistakes in data and suggest how it could be checked. | * To select the technology for text, photo, sound and video editing tools I want to use to create content, e.g. multimedia presentation * To use and combine a range of media and recognise the contribution of each to achieve a particular outcome * To use a variety of tools and digital devices to creative effective work * To evaluate the effectiveness of my own work and the work of others and use that to improve the work. * To plan an investigation of the world around me, including the data to collect * To select appropriate and effective tools to collect data for my investigation, * To check accuracy, plausibility and reliability of data collected * To present the data collected in an informative way * To examine and ask questions of a database to retrieve relevant information. * To evaluate reliability and usefulness of digital content * To use search technologies effectively to help my learning |
| **E-safety**  Over lower and upper key stage 2 pupils will have increasing knowledge and skills with each statement  Link to National Curriculum:    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. | * know the Be Smart e-safety rules * know how to review and amend my online identity * aware of my digital footprint and the impact it can have * understand what it means to have a positive digital footprint, and why it is important. * know things I can share and things I should not share and explain the reasons * know the risks about who and who not to contact online * know who to report to about content or contacts that worry me * can recognise acceptable and unacceptable behaviour when online * I am aware of issues about copyright * can communicate responsibly and respectfully, recognising the impact on others when this does not happen * know how to create and use a secure password and username when I am online * beginning to know and use privacy settings when using social media | * know the Be Smart e-safety rules * always communicate responsibly and respectfully, recognising the impact on others when this does not happen * can work with others to help all enjoy use of technology both online and offline * know how to help my friends to protect themselves and make good choices online, including reporting any concerns to a trusted adult * describe ways to keep personal information private online by using safety tools and privacy settings * explain what it means to have a positive digital footprint, and why it is important. * make informed choices when selecting apps, games and websites and begin to know the risks of making different choices * Identify different types of online scams people our age may experience, including ‘phishing’. |