

 Computing Progression of Knowledge and Skills

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| Unit | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Computing systems and networksTechnology around usIT around usConnecting computersThe InternetSystems and searchingCommunication and collaboration | -To identify information technology beyond school-To explain how information technology helps us-To explain how to use information technology safely-To recognise that choices are made when using information technology | -To recognise the uses and features of information technology-To identify the uses of information technology in the school-To identify information technology beyond school-To explain how information technology helps us-To explain how To use information technology safely-To recognise that choices are made when using information technology | -To explain how digital devices function-To identify input and output devices-To recognise how digital devices can change the way we work-To explain how a computer network can be used to share information-To explore how digital devices can be connected-To recognise the physical components of a network | -To describe how networks physically connect to other networks-To recognise how networked devices make up the internet-To outline how websites can be shared via the World Wide Web (WWW)-To describe how content can be added and accessed on the World Wide Web (WWW)-To recognise how the content of the WWW is created by people-To evaluate the consequences of unreliable content | -To explain that computers can be connected together to form systems-To recognise the role of computer systems in our lives-To experiment with search engines-To describe how search engines select results-To explain how search results are ranked-To recognise why the order of results is important, and to whom | -To explain the importance of internet addresses-To recognise how data is transferred across the internet-To explain how sharing information online can help people to work together-To evaluate different ways of working together online-To recognise how we communicate using technology-To evaluate different methods of online communication |

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| Creating mediaDigital paintingDigital photographyStop-frame animationAudio productionVideo productionWeb page creation | -To describe what different freehand tools do-To use the shape tool and the line tools-To make careful choices when painting a digital picture-To explain why I chose the tools I used-To use a computer on my own to paint a picture-To compare painting a picture on a computer and on paper | -To use a digital device to take a photograph-To make choices when taking a photograph-To describe what makes a good photograph-To decide how photographs can be improved-To use tools to change an image-To recognise that photos can be changed | -To explain that animation is a sequence of drawings or photographs-To relate animated movement with a sequence of images-To plan an animation-To identify the need to work consistently and carefully-To review and improve an animation-To evaluate the impact of adding other media to an animation | -To identify that sound can be recorded-To explain that audio recordings can be edited-To recognise the different parts of creating a podcast project-To apply audio editing skills independently-To combine audio to enhance my podcast project-To evaluate the effective use of audio | -To explain what makes a video effective-To identify digital devices that can record video-To capture video using a range of techniques-To create a storyboard-To identify that video can be improved through reshooting and editing-To consider the impact of the choices made when making and sharing a video | -To review an existing website and consider its structure-To plan the features of a web page-To consider the ownership and use of images (copyright)-To recognise the need to preview pages-To outline the need for a navigation path-To recognise the implications of linking to content owned by other people |

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| Programming Moving a robotRobot algorithmsSequencing soundsRepetition in shapesSelection in physical ComputingVariables in games | -To explain what a given command will do-To act out a given word-To combine forwards and backwards commands to make a sequence-To combine four direction commands to make sequences-To plan a simple program-To find more than one solution to a problem | -To describe a series of instructions as a sequence-To explain what happens when we change the order of instructions-To use logical reasoning to predict the outcome of a program-To explain that programming projects can have code and artwork-To design an algorithm-To create and debug a program that I have written | -To explore a new programming environment-To identify that commands have an outcome-To explain that a program has a start-To recognise that a sequence of commands can have an order-To change the appearance of my project-To create a project from a task description | -To identify that accuracy in programming is important-To create a program in a text-based language-To explain what ‘repeat’ means-To modify a count-controlled loop to produce a given outcome-To decompose a task into small steps-To create a program that uses count-controlled loops to produce a given outcome | -To control a simple circuit connected to a computer-To write a program that includes count-controlled loops-To explain that a loop can stop when a condition is met-To explain that a loop can be used to repeatedly check whether a condition has been met-To design a physical project that includes selection-To create a program that controls a physical computing project | -To define a ‘variable’ as something that is changeable-To explain why a variable is used in a program-To choose how to improve a game by using variables-To design a project that builds on a given example-To use my design to create a project-To evaluate my project |

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| Data and informationGrouping dataPictogramsBranching databasesData loggingFlat-file databasesSpreadsheets | -To label objects-To identify that objects can be counted-To describe objects in different ways-To count objects with the same properties-To compare groups of objects-To answer questions about groups of objects | -To recognise that we can count and compare objects using tally charts-To recognise that objects can be represented as pictures-To create a pictogram-To select objects by attribute and make comparisons-To recognise that people can be described by attributes-To explain that we can present information using a computer | -To create questions with yes/no answers-To identify the attributes needed to collect data about an object-To create a branching database-To explain why it is helpful for a database to be well structured-To plan the structure of a branching database-To independently create an identification tool | -To explain that data gathered over time can be used to answer questions-To use a digital device to collect data automatically-To explain that a data logger collects ‘data points’ from sensors over time-To recognise how a computer can help us analyse data-To identify the data needed to answer questions-To use data from sensors to answer questions  | -To use a form to record information-To compare paper and computer-based databases-To outline how you can answer questions by grouping and then sorting data-To explain that tools can be used to select specific data-To explain that computer programs can be used to compare data visually-To use a real-world database to answer questions | -To create a data set in a spreadsheet-To build a data set in a spreadsheet-To explain that formulas can be used to produce calculated data-To apply formulas to data-To create a spreadsheet to plan an event-To choose suitable ways to present data |

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| Creating mediaDigital writingDigital musicDesktop publishingPhoto editingIntroduction to vector graphics3D Modelling | -To use a computer to write-To add and remove text on a computer-To identify that the look of text can be changed on a computer-To make careful choices when changing text-To explain why I used the tools that I chose-To compare typing on a computer to writing on paper | -To say how music can make us feel-To identify that there are patterns in music-To experiment with sound using a computer-To use a computer to create a musical pattern-To create music for a purpose-To review and refine our computer work | -To recognise how text and images convey information-To recognise that text and layout can be edited-To choose appropriate page settings-To add content to a desktop publishing publication-To consider how different layouts can suit different purposes-To consider the benefits of desktop publishing | -To explain that the composition of digital images can be changed-To explain that colours can be changed in digital images-To explain how cloning can be used in photo editing-To explain that images can be combined-To combine images for a purpose-To evaluate how changes can improve an image | -To identify that drawing tools can be used to produce different outcomes-To create a vector drawing by combining shapes-To use tools to achieve a desired effect-To recognise that vector drawings consist of layers-To group objects to make them easier to work with-To apply what I have learned about vector drawings | -To recognise that you can work in three dimensions on a computer-To identify that digital 3D objects can be modified-To recognise that objects can be combined in a 3D model-To create a 3D model for a given purpose-To plan my own 3D model-To create my own digital 3D model |

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| Programming Programming animationsProgramming quizzesEvents and actions in programsRepetition in gamesSelection in quizzesSensing movement | -To choose a command for a given purpose-To show that a series of commands can be joined together-To identify the effect of changing a value-To explain that each sprite has its own instructions-To design the parts of a project-To use my algorithm to create a program | -To explain that a sequence of commands has a start-To explain that a sequence of commands has an outcome-To create a program using a given design-To change a given design-To create a program using my own design-To decide how my project can be improved | -To explain how a sprite moves in an existing project-To create a program to move a sprite in four directions-To adapt a program to a new context-To develop my program by adding features-To identify and fix bugs in a program-To design and create a maze-based challenge | -To develop the use of count-controlled loops in a different programming environment-To explain that in programming there are infinite loops and count controlled loops-To develop a design that includes two or more loops which run at the same time-To modify an infinite loop in a given program-To design a project that includes repetition-To create a project that includes repetition | -To explain how selection is used in computer programs-To relate that a conditional statement connects a condition to an outcome-To explain how selection directs the flow of a program-To design a program which uses selection-To create a program which uses selection-To evaluate my program | -To create a program to run on a controllable device-To explain that selection can control the flow of a program-To update a variable with a user input-To use a conditional statement to compare a variable to a value-To design a project that uses inputs and outputs on a controllable device-To develop a program to use inputs and outputs on a controllable device |