

**Key Skills**

Computer Systems and Networks

Programming

Data and Information

Creating Media

Computing

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| Key Skill | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Computer Systems and Networks | * To choose a piece of technology to do a job * To recognise that some technology can be used in different ways * To identify the main parts of a computer * To use a mouse in different ways * To use a keyboard to type * To use the keyboard to edit * To recognise that choices are text * To show how to use   technology safely | * To describe some uses of computers * To identify information technology in school * To identify information technology beyond school * To show how to use   information technology safely | * To identify input and output devices * To explain that a computer system accepts an input and processes it to produce an output * To explain how a computer network can be used to share information * To explain the roles of a switch, server and wireless access point in a network. * To identify network devices around me. * To explain how networks can be connected to other networks. | * To outline how information can be shared via the World Wide Web * To describe how networks connect to other networks * To explain that the global interconnection of networks is the internet * To recognise the need for security on the internet * To describe the types of content/media that can be added, created, and shared on the World Wide Web * To explain how the content of the World Wide Web is created, owned, and shared by people * To evaluate the reliability of content and the consequences of unreliable content | * To describe the input and * output of a search engine * To demonstrate that different search terms produce different results * To explain why search engines create indices, and that they are different for each search engine * To evaluate the results of search terms | * To outline methods of communicating and collaborating using the internet * To choose methods of internet communication and collaboration for given purposes * To evaluate different methods of online communication and collaboration * To decide what you should and should not share online |
| Programming | * To choose a series of words that can be enacted as a program * To choose a series of commands that can be run as a program * To run a program on a device * To predict the outcome of a command on a device * To list which commands can be used on a given device * To run a command on a floor robot * To choose a command for a given purpose * To build a sequence of commands in steps * To combine commands in a program | * To choose a series of words that can be enacted as a sequence * To choose a series of instructions that can be run as a program * To create a program * To trace a sequence to make a prediction * To run a program on a device * To debug a program that I have written * To test a prediction by running the sequence * To explain what happens when we change the order of instructions | * To build a sequence of commands * To combine commands in a program * To order commands in a program * To create a sequence of commands to produce a given outcome | * To list an everyday task as a set of instructions including repetition * To use an indefinite loop to produce a given outcome * To use a count-controlled loop to produce a given outcome * To plan a program that includes appropriate loops to produce a given outcome * To recognise tools that enable more than one process to be run at the same time (concurrency) * To create two or more sequences that run at the same time | * To create a condition-controlled loop * To use a condition in an ‘if...then…’ statement to start an action * To use selection to switch the program flow in one of two ways * To use a condition in an ‘if...then...else…’ statement to produce given outcomes * To choose a condition to use in a program * To use selection to switch program flow | * To identify a variable in an existing program * To experiment with the value of an existing variable * To choose a name that identifies the role of a variable to make it more usable (to humans) * To choose a name that identifies the role of a variable to make it easier for humans to understand it * To decide where in a program to set a variable * To use an event in a program to update a variable * To update a variable with a user input * To use a variable in a conditional statement to control the flow of a program * To use the same variable in more than one location in a program |
| Data and Information | * To identify some attributes of an object * To collect simple data * To show that collected data can be counted * To describe the properties of an object * To choose an attribute to group objects by * To group objects to answer questions * To explain that objects can be grouped by similarities (attribute) * To describe a group of objects (based on commonality) | * To show I can enter data onto a computer * To recognise that people, animals and objects can be described by attributes * To use a computer to view data in different formats * To use pictograms to answer single-attribute questions * To use a computer to answer comparison questions (graphs, tables) | * To create questions with yes/no answers * To choose questions that will divide objects into evenly sized subgroups * To repeatedly create subgroups of objects * To identify an object using a branching database * To retrieve information from different levels of the branching database | * To use a digital device to collect data automatically * To choose how often to automatically collect data samples * To use a set of logged data to find information * To use a computer program to sort data by one attribute * To export information in different formats | * To choose different ways to view data * To choose which attribute and value to search by to answer a given question (operands) * To ask questions that need more than one attribute to answer * To choose which attribute to sort data by to answer a given question * To choose multiple criteria to search data to answer a give question (AND and OR) * To select an appropriate graph to visually compare data * To choose suitable ways to present information to other people | * To choose suitable ways to present spreadsheet data * To use existing cells within a formula * To use functions to create new data * To calculate data using a formula for each operation |
| Creating Media | * To create a picture using freehand tools * To use shape and line tools when precision is needed * To use a range of paint colours * To use the fill tool to colour an enclosed area * To use the undo button to correct a mistake * To combine a range of tools to create a piece of artwork * To use letter, number, and Space keys to enter text into a computer * To use punctuation and special characters * To select text * To choose options to achieve a desired effect * To change the appearance of text on a computer * To use the Backspace key to remove text * To position the text cursor in a chosen location * To use Undo | * To capture a digital image * To take photographs in both landscape and portrait format * To view photographs on a digital device * To decide which photographs to keep * To use zoom to change the composition of a photograph * To hold the camera still to take a clear photograph * To consider lighting before taking a photograph * To improve a photograph by retaking it * To use filters to edit the appearance of a photograph * To experiment with musical patterns on a computer * To experiment with different sounds on a computer * To use a computer to create a musical pattern * To use a computer to compose a rhythm and a melody on a given theme * To use a computer to play the same music in different ways (e.g. tempo) * To evaluate a musical composition created on a computer * To improve a musical composition created on a computer | * To show that page orientation can be changed * To add text to a placeholder * To organise text and image placeholders in a page layout * To add and remove images to and from placeholders * To move resize and rotate images * To edit text in a placeholder * To choose fonts and apply effects to text * To review a document * To plan an animation using a storyboard * To set up the work area with awareness of what will be captured * To capture an image * To use the onion skinning tool to review subject position * To move a subject between captures * To review a captured sequence of frames as an animation * To remove frames to improve animation * To add media to enhance an animation * To review a completed project. | * To recognise that digital images can be manipulated * To recognise that digital images can be changed for different purposes * To choose the most appropriate tool for a particular purpose * To consider the impact of changes made on the quality of the image * To record sound using a computer * To import audio into a project * To play recorded audio * To change the volume of tracks in a project * To delete a section of audio | * To add an object to a vector drawing * To select one object or choices made multiple objects * To delete objects * To move objects between the layers of a drawing * To group and ungroup selected objects * To duplicate objects using copy and paste * To modify objects * To reposition objects * To combine options to achieve a desired effect * To create a vector drawing for a given purpose * To use different camera angles * To use pan, tilt and zoom * To identify features of a video recording device or application * To combine filming techniques for a given purpose * To determine what scenes will convey your idea * To decide what changes I will make when editing * To choose to reshoot a scene or improve later through editing * To use split, trim and crop to edit a video | * To position 3D shapes relative to one another * To use digital tools to modify 3D objects * To combine objects to create a 3D digital artefact * To use digital tools to   accurately size 3 objects   * To construct a 3D model which reflects a real world object * To review an existing website (navigation bars, header) * To create a new blank web page * To add text to a web page * To set the style of text on a web page * To change the appearance of text * To embed media in a web page * To add web pages to a website * To insert hyperlink between pages * To insert hyperlinks to another site * To preview a web page (different screen sizes) |