



ST MICHAEL & ALL ANGELS C. E. (FOUNDATION) PRIMARY AND PRE-SCHOOL

Computing Progression of Skills

<u>Key Stage 1 National Curriculum Expectations</u>	<u>Key Stage 2 National Curriculum Expectations.</u>
<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • 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; • use technology purposefully to create, organise, store, manipulate and retrieve digital content; • recognise common uses of information technology beyond school; • use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. 	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> • 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; • 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; • 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; • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

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Reception Skills in Preparation for Year 1	
Computing systems and networks – Technology around us	<p>I can explain how these technology examples help us</p> <p>I can explain technology as something that helps us</p> <p>I can locate examples of technology in the classroom</p> <p>I can switch on and log into a computer</p> <p>I can type my name on a computer</p> <p>I can discuss how we benefit from these rules</p> <p>I can give examples of some of these rules</p> <p>I can identify rules to keep us safe and healthy when we are using technology in and beyond the home</p>
Creating media – Digital painting	<p>I can draw lines on a screen and explain which tools I used</p> <p>I can make marks on a screen and explain which tools I used</p>
Creating media – Digital writing	<p>I can identify and find keys on a keyboard</p>
Data and information – Grouping data	<p>I can describe objects using labels</p> <p>I can identify the label for a group of objects</p>
Programming A – Moving a robot	<p>I can match a command to an outcome</p> <p>I can predict the outcome of a command on a device</p> <p>I can run a command on a device</p> <p>I can follow an instruction</p> <p>I can give directions</p> <p>I can recall words that can be acted out</p> <p>I can compare forwards and backwards movements</p>

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Year 1	
Computing systems and networks – Technology around us	<p>I can explain how these technology examples help us</p> <p>I can explain technology as something that helps us</p> <p>I can locate examples of technology in the classroom</p> <p>I can name the main parts of a computer</p> <p>I can switch on and log into a computer</p> <p>I can use a mouse to click and drag</p> <p>I can click and drag to make objects on a screen</p> <p>I can use a mouse to create a picture</p> <p>I can use a mouse to open a program</p> <p>I can save my work to a file</p> <p>I can say what a keyboard is for</p> <p>I can type my name on a computer</p> <p>I can delete letters</p> <p>I can open my work from a file</p> <p>I can use the arrow keys to move the cursor</p> <p>I can discuss how we benefit from these rules</p> <p>I can give examples of some of these rules</p> <p>I can identify rules to keep us safe and healthy when we are using technology in and beyond the home</p>
Creating media – Digital painting	<p>I can draw lines on a screen and explain which tools I used</p> <p>I can make marks on a screen and explain which tools I used</p> <p>I can use the paint tools to draw a picture</p> <p>I can make marks with the square and line tools</p> <p>I can use the shape and line tools effectively</p> <p>I can use the shape and line tools to recreate the work of an artist</p> <p>I can choose appropriate shapes</p> <p>I can create a picture in the style of an artist</p> <p>I can make appropriate colour choices</p>

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	<p>I can choose appropriate paint tools and colours to recreate the work of an artist</p> <p>I can say which tools were helpful and why</p> <p>I know that different paint tools do different jobs</p> <p>I can change the colour and brush sizes</p> <p>I can make dots of colour on the page</p> <p>I can use dots of colour to create a picture in the style of an artist on my own</p> <p>I can explain that pictures can be made in lots of different ways</p> <p>I can say whether I prefer painting using a computer or using paper</p> <p>I can spot the differences between painting on a computer and on paper</p>
<p>Creating media – Digital writing</p>	<p>I can identify and find keys on a keyboard</p> <p>I can open a word processor</p> <p>I can recognise keys on a keyboard</p> <p>I can enter text into a computer</p> <p>I can use backspace to remove text</p> <p>I can use letter, number, and space keys</p> <p>I can explain what the keys that I have learnt about already do</p> <p>I can identify the toolbar and use bold, italic, and underline</p> <p>I can type capital letters</p> <p>I can change the font</p> <p>I can select all of the text by clicking and dragging</p> <p>I can select a word by double-clicking</p> <p>I can decide if my changes have improved my writing</p> <p>I can say what tool I used to change the text</p> <p>I can use 'undo' to remove changes</p> <p>I can explain the differences between typing and writing</p> <p>I can make changes to text on a computer</p> <p>I can say why I prefer typing or writing</p>
<p>Data and information – Grouping data</p>	<p>I can describe objects using labels</p> <p>I can identify the label for a group of objects</p>

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	<p>I can match objects to groups</p> <p>I can count a group of objects</p> <p>I can count objects</p> <p>I can group objects</p> <p>I can describe an object</p> <p>I can describe a property of an object</p> <p>I can find objects with similar properties</p> <p>I can count how many objects share a property</p> <p>I can group objects in more than one way</p> <p>I can group similar objects</p> <p>I can choose how to group objects</p> <p>I can describe groups of objects</p> <p>I can record how many objects are in a group</p> <p>I can compare groups of objects</p> <p>I can decide how to group objects to answer a question</p> <p>I can record and share what I have found</p>
Programming A – Moving a robot	<p>I can match a command to an outcome</p> <p>I can predict the outcome of a command on a device</p> <p>I can run a command on a device</p> <p>I can follow an instruction</p> <p>I can give directions</p> <p>I can recall words that can be acted out</p> <p>I can compare forwards and backwards movements</p> <p>I can predict the outcome of a sequence involving forwards and backwards commands</p> <p>I can start a sequence from the same place</p> <p>I can compare left and right turns</p> <p>I can experiment with turn and move commands to move a robot</p> <p>I can predict the outcome of a sequence involving up to four commands</p> <p>I can choose the order of commands in a sequence</p>

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	<p>I can debug my program</p> <p>I can explain what my program should do</p> <p>I can identify several possible solutions</p> <p>I can plan two programs</p> <p>I can use two different programs to get to the same place</p>
Programming B – Introduction to animation	<p>I can compare different programming tools</p> <p>I can find which commands to move a sprite</p> <p>I can use commands to move a sprite</p> <p>I can run my program</p> <p>I can use a Start block in a program</p> <p>I can use more than one block by joining them together</p> <p>I can change the value</p> <p>I can find blocks that have numbers</p> <p>I can say what happens when I change a value</p> <p>I can add blocks to each of my sprites</p> <p>I can delete a sprite</p> <p>I can show that a project can include more than one sprite</p> <p>I can choose appropriate artwork for my project</p> <p>I can create an algorithm for each sprite</p> <p>I can decide how each sprite will move</p> <p>I can add programming blocks based on my algorithm</p> <p>I can test the programs I have created</p> <p>I can use sprites that match my design</p>

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Year 2	
Computing systems and networks – IT around us	<p>I can describe some uses of computers</p> <p>I can identify examples of computers</p> <p>I can identify that a computer is a part of IT</p> <p>I can identify examples of IT</p> <p>I can identify that some IT can be used in more than one way</p> <p>I can sort school IT by what it's used for</p> <p>I can find examples of information technology</p> <p>I can sort IT by where it is found</p> <p>I can talk about uses of information technology</p> <p>I can demonstrate how IT devices work together</p> <p>I can recognise common types of technology</p> <p>I can say why we use IT</p> <p>I can list different uses of information technology</p> <p>I can say how rules can help keep me safe</p> <p>I can talk about different rules for using IT</p> <p>I can explain the need to use IT in different ways</p> <p>I can identify the choices that I make when using IT</p> <p>I can use IT for different types of activities</p>
Creating media – Digital photography	<p>I can explain what I did to capture a digital photo</p> <p>I can recognise what devices can be used to take photographs</p> <p>I can talk about how to take a photograph</p> <p>I can explain the process of taking a good photograph</p> <p>I can explain why a photo looks better in portrait or landscape format</p> <p>I can take photos in both landscape and portrait format"</p> <p>I can discuss how to take a good photograph</p> <p>I can identify what is wrong with a photograph</p>

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	<p>I can improve a photograph by retaking it</p> <p>I can experiment with different light sources</p> <p>I can explain why a picture may be unclear</p> <p>I can explore the effect that light has on a photo"</p> <p>I can explain my choices</p> <p>I can recognise that images can be changed</p> <p>I can use a tool to achieve a desired effect</p> <p>I can apply a range of photography skills to capture a photo</p> <p>I can identify which photos are real and which have been changed</p> <p>I can recognise which photos have been changed</p>
<p>Creating media – Making music</p>	<p>I can describe how music makes me feel, e.g. happy or sad</p> <p>I can identify simple differences in pieces of music</p> <p>I can listen with concentration to a range of music (links to the Music curriculum)"</p> <p>I can create a rhythm pattern</p> <p>I can explain that music is created and played by humans</p> <p>I can play an instrument following a rhythm pattern"</p> <p>I can identify that music is a sequence of notes</p> <p>I can refine my musical pattern on a computer</p> <p>I can use a computer to create a musical pattern using three notes</p> <p>I can identify that music is a sequence of notes</p> <p>I can refine my musical pattern on a computer</p> <p>I can use a computer to create a musical pattern using three notes</p> <p>I can describe an animal using sounds</p> <p>I can explain my choices</p> <p>I can save my work</p> <p>I can explain how I made my work better</p> <p>I can listen to music and describe how it makes me feel</p> <p>I can reopen my work"</p>
<p>Data and information –</p>	<p>I can compare totals in a tally chart</p>

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Pictograms	<p>I can record data in a tally chart</p> <p>I can represent a tally count as a total</p> <p>I can enter data onto a computer</p> <p>I can use a computer to view data in a different format</p> <p>I can use pictograms to answer simple questions about objects</p> <p>I can explain what the pictogram shows</p> <p>I can organise data in a tally chart</p> <p>I can use a tally chart to create a pictogram</p> <p>I can answer 'more than'/'less than' and 'most/least' questions about an attribute</p> <p>I can create a pictogram to arrange objects by an attribute</p> <p>I can tally objects using a common attribute</p> <p>I can choose a suitable attribute to compare people</p> <p>I can collect the data I need</p> <p>I can create a pictogram and draw conclusions from it</p> <p>I can give simple examples of why information should not be shared</p> <p>I can share what I have found out using a computer</p> <p>I can use a computer program to present information in different ways</p>
Programming A – Robot algorithms	<p>I can choose a series of words that can be enacted as a sequence</p> <p>I can follow instructions given by someone else</p> <p>I can give clear and unambiguous instructions</p> <p>I can create different algorithms for a range of sequences (using the same commands)</p> <p>I can show the difference in outcomes between two sequences that consist of the same commands</p> <p>I can use an algorithm to program a sequence on a floor robot</p> <p>I can compare my prediction to the program outcome</p> <p>I can follow a sequence</p> <p>I can predict the outcome of a sequence</p> <p>I can explain the choices I made for my mat design</p> <p>I can identify different routes around my mat</p>

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	<ul style="list-style-type: none">I can test my mat to make sure that it is usableI can create an algorithm to meet my goalI can explain what my algorithm should achieveI can use my algorithm to create a programI can plan algorithms for different parts of a taskI can put together the different parts of my programI can test and debug each part of the program
Programming B – An introduction to quizzes	<ul style="list-style-type: none">I can identify that a program needs to be startedI can identify the start of a sequenceI can show how to run my programI can change the outcome of a sequence of commandsI can match two sequences with the same outcomeI can predict the outcome of a sequence of commandsI can build the sequences of blocks I needI can decide which blocks to use to meet the designI can work out the actions of a sprite in an algorithmI can choose backgrounds for the designI can choose characters for the designI can create a program based on the new designI can build sequences of blocks to match my designI can choose the images for my own designI can create an algorithm"I can compare my project to my designI can debug my programI can improve my project by adding features

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Year 3	
Computing systems and networks – Connecting computers	<ul style="list-style-type: none"> I can explain that digital devices accept inputs I can explain that digital devices produce outputs I can follow a process I can classify input and output devices I can describe a simple process I can design a digital device I can explain how I use digital devices for different activities I can recognise similarities between using digital devices and non-digital tools I can suggest differences between using digital devices and non-digital tools I can discuss why we need a network switch I can explain how messages are passed through multiple connections I can recognise different connections I can demonstrate how information can be passed between devices I can explain the role of a switch, server, and wireless access point in a network I can recognise that a computer network is made up of a number of devices I can identify how devices in a network are connected together I can identify networked devices around me I can identify the benefits of computer networks
Creating media – Animation	<ul style="list-style-type: none"> I can create an effective flip book—style animation I can draw a sequence of pictures I can explain how an animation/flip book works I can create an effective stop-frame animation I can explain why little changes are needed for each frame I can predict what an animation will look like I can break down a story into settings, characters and events I can create a storyboard

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	<p>I can describe an animation that is achievable on screen</p> <p>I can evaluate the quality of my animation</p> <p>I can review a sequence of frames to check my work</p> <p>I can use onion skinning to help me make small changes between frames</p> <p>I can evaluate another learner's animation</p> <p>I can explain ways to make my animation better</p> <p>I can improve my animation based on feedback</p> <p>I can add other media to my animation</p> <p>I can evaluate my final film</p> <p>I can explain why I added other media to my animation</p>
<p>Creating media – Desktop publishing</p>	<p>I can explain the difference between text and images</p> <p>I can identify the advantages and disadvantages of using text and images</p> <p>I can recognise that text and images can communicate messages clearly</p> <p>I can change font style, size, and colours for a given purpose</p> <p>I can edit text</p> <p>I can explain that text can be changed to communicate more clearly</p> <p>I can create a template for a particular purpose</p> <p>I can define the term 'page orientation'</p> <p>I can recognise placeholders and say why they are important</p> <p>I can choose the best locations for my content</p> <p>I can make changes to content after I've added it</p> <p>I can paste text and images to create a magazine cover</p> <p>I can choose a suitable layout for a given purpose</p> <p>I can identify different layouts</p> <p>I can match a layout to a purpose</p> <p>I can compare work made on desktop publishing to work created by hand</p> <p>I can identify the uses of desktop publishing in the real world</p> <p>I can say why desktop publishing might be helpful</p>
<p>Data and information – Branching</p>	<p>I can create two groups of objects separated by one attribute</p>

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databases	<ul style="list-style-type: none">I can investigate questions with yes/no answersI can make up a yes/no question about a collection of objectsI can arrange objects into a tree structureI can create a group of objects within an existing groupI can select an attribute to separate objects into groupsI can group objects using my own yes/no questionsI can prove my branching database worksI can select objects to arrange in a branching databaseI can compare two branching database structuresI can create yes/no questions using given attributesI can explain that questions need to be ordered carefully to split objects into similarly sized groupsI can create questions and apply them to a tree structureI can select a theme and choose a variety of objectsI can use my branching database to answer questionsI can compare two ways of presenting informationI can explain what a branching database tells meI can explain what a pictogram tells me
Programming A – Sequence in music	<ul style="list-style-type: none">I can explain that objects in Scratch have attributes (linked to)I can identify the objects in a Scratch project (sprites, backdrops)I can recognise that commands in Scratch are represented as blocksI can choose a word which describes an on-screen action for my planI can create a program following a designI can identify that each sprite is controlled by the commands I chooseI can create a sequence of connected commandsI can explain that the objects in my project will respond exactly to the codeI can start a program in different waysI can combine sound commandsI can explain what a sequence isI can order notes into a sequence

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	<ul style="list-style-type: none">I can build a sequence of commandsI can decide the actions for each sprite in a programI can make design choices for my artworkI can identify and name the objects I will need for a projectI can implement my algorithm as codeI can relate a task description to a design
Programming B – Events and actions	<ul style="list-style-type: none">I can choose which keys to use for actions and explain my choicesI can explain the relationship between an event and an actionI can identify a way to improve a programI can choose a character for my projectI can choose a suitable size for a character in a mazeI can program movementI can choose blocks to set up my programI can consider the real world when making design choicesI can use a programming extensionI can build more sequences of commands to make my design workI can choose suitable keys to turn on additional featuresI can identify additional features (from a given set of blocks)I can match a piece of code to an outcomeI can modify a program using a designI can test a program against a given designI can evaluate my projectI can implement my designI can make design choices and justify them

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Year 4	
Computing systems and networks – The Internet	<p>I can demonstrate how information is shared across the internet</p> <p>I can describe the internet as a network of networks</p> <p>I can discuss why a network needs protecting</p> <p>I can describe networked devices and how they connect</p> <p>I can explain that the internet is used to provide many services</p> <p>I can recognise that the World Wide Web contains websites and web pages</p> <p>I can describe how to access websites on the WWW</p> <p>I can describe where websites are stored when uploaded to the WWW</p> <p>I can explain the types of media that can be shared on the WWW</p> <p>I can explain that internet services can be used to create content online</p> <p>I can explain what media can be found on websites</p> <p>I can recognise that I can add content to the WWW</p> <p>I can explain that there are rules to protect content</p> <p>I can explain that websites and their content are created by people</p> <p>I can suggest who owns the content on websites</p> <p>I can explain that not everything on the World Wide Web is true</p> <p>I can explain why I need to think carefully before I share or reshare content</p> <p>I can explain why some information I find online may not be honest, accurate, or legal</p>
Creating media – Audio editing	<p>I can identify digital devices that can record sound and play it back</p> <p>I can identify the inputs and outputs required to play audio or record sound</p> <p>I can recognise the range of sounds that can be recorded</p> <p>I can discuss what other people include when recording sound for a podcast</p> <p>I can suggest how to improve my recording</p> <p>I can use a device to record audio and play back sound</p> <p>I can discuss why it is useful to be able to save digital recordings</p> <p>I can plan and write the content for a podcast</p> <p>I can save a digital recording as a file"</p> <p>I can discuss ways in which audio recordings can be altered</p>

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	<p>I can edit sections of of an audio recording</p> <p>I can open a digital recording from a file</p> <p>I can choose suitable sounds to include in a podcast</p> <p>I can discuss sounds that other people combine</p> <p>I can use editing tools to arrange sections of audio</p> <p>I can discuss the features of a digital recording I like</p> <p>I can explain that digital recordings need to be exported to share them</p> <p>I can suggest improvements to a digital recording"</p>
<p>Creating media – Photo editing</p>	<p>I can explain the effect that editing can have on an image</p> <p>I can explore how images can be changed in real life</p> <p>I can identify changes that we can make to an image</p> <p>I can change the composition of an image by selecting parts of it</p> <p>I can consider why someone might want to change the composition of an image</p> <p>I can explain what has changed in an edited image</p> <p>I can choose effects to make my image fit a scenario</p> <p>I can explain why my choices fit a scenario</p> <p>I can talk about changes made to images</p> <p>I can choose appropriate tools to retouch an image</p> <p>I can give examples of positive and negative effects that retouching can have on an image</p> <p>I can identify how an image has been retouched</p> <p>I can combine parts of images to create new images</p> <p>I can sort images into 'fake' or 'real' and explain my choices</p> <p>I can talk about fake images around me</p> <p>I can compare the original image with my completed publication</p> <p>I can consider the effect of adding other elements to my work</p> <p>I can evaluate the impact of my publication on others through feedback</p>
<p>Data and information – Data logging</p>	<p>I can choose a data set to answer a given question</p> <p>I can identify data that can be gathered over time</p> <p>I can suggest questions that can be answered using a given data set</p>

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	<p>I can explain that sensors are input devices</p> <p>I can identify that data from sensors can be recorded</p> <p>I can use data from a sensor to answer a given question</p> <p>I can identify a suitable place to collect data</p> <p>I can identify the intervals used to collect data</p> <p>I can talk about the data that I have captured</p> <p>I can import a data set</p> <p>I can use a computer program to sort data</p> <p>I can use a computer to view data in different ways</p> <p>I can plan how to collect data using a data logger</p> <p>I can propose a question that can be answered using logged data</p> <p>I can use a data logger to collect data"</p> <p>I can draw conclusions from the data that I have collected</p> <p>I can explain the benefits of using a data logger</p> <p>I can interpret data that has been collected using a data logger</p>
Programming A – Repetition in shapes	<p>I can create a code snippet for a given purpose</p> <p>I can explain the effect of changing a value of a command</p> <p>I can program a computer by typing commands</p> <p>I can test my algorithm in a text-based language</p> <p>I can use a template to create a design for my program</p> <p>I can write an algorithm to produce a given outcome</p> <p>I can identify everyday tasks that include repetition as part of a sequence, eg brushing teeth, dance moves</p> <p>I can identify patterns in a sequence</p> <p>I can use a count-controlled loop to produce a given outcome</p> <p>I can choose which values to change in a loop</p> <p>I can identify the effect of changing the number of times a task is repeated</p> <p>I can predict the outcome of a program containing a count-controlled loop</p> <p>I can explain that a computer can repeatedly call a procedure</p> <p>I can identify 'chunks' of actions in the real world</p>

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	<p>I can use a procedure in a program</p> <p>I can design a program that includes count-controlled loops</p> <p>I can develop my program by debugging it</p> <p>I can make use of my design to write a program</p>
Programming B – Repetition in games	<p>I can list an everyday task as a set of instructions including repetition</p> <p>I can modify a snippet of code to create a given outcome</p> <p>I can predict the outcome of a snippet of code</p> <p>I can choose when to use a count-controlled and an infinite loop</p> <p>I can modify loops to produce a given outcome</p> <p>I can recognise that some programming languages enable more than one process to be run at once</p> <p>I can choose which action will be repeated for each object</p> <p>I can evaluate the effectiveness of the repeated sequences used in my program</p> <p>I can explain what the outcome of the repeated action should be</p> <p>I can explain the effect of my changes</p> <p>I can identify which parts of a loop can be changed</p> <p>I can re-use existing code snippets on new sprites</p> <p>I can develop my own design explaining what my project will do</p> <p>I can evaluate the use of repetition in a project</p> <p>I can select key parts of a given project to use in my own design</p> <p>I can build a program that follows my design</p> <p>I can evaluate the steps I followed when building my project</p> <p>I can refine the algorithm in my design</p>

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Year 5	
Computing systems and networks – Sharing information	<p>I can describe that a computer system features inputs, processes, and outputs</p> <p>I can explain that computer systems communicate with other devices</p> <p>I can explain that systems are built using a number of parts</p> <p>I can explain the benefits of a given computer system</p> <p>I can identify tasks that are managed by computer systems</p> <p>I can identify the human elements of a computer system</p> <p>I can explain that data is transferred over networks in packets</p> <p>I can explain that networked digital devices have unique addresses</p> <p>I can recognise that data is transferred using agreed methods</p> <p>I can explain that the internet allows different media to be shared</p> <p>I can recognise that connected digital devices can allow us to access shared files stored online</p> <p>I can send information over the internet in different ways</p> <p>I can compare working online with working offline</p> <p>I can make thoughtful suggestions on my group's work</p> <p>I can suggest strategies to ensure successful group work</p> <p>I can explain how the internet enables effective collaboration</p> <p>I can identify different ways of working together online</p> <p>I can recognise that working together on the internet can be public or private</p>
Creating media – Vector drawing	<p>I can discuss how a vector drawing is different from paper-based drawings</p> <p>I can identify the main drawing tools</p> <p>I can recognise that vector drawings are made using shapes</p> <p>I can explain that each element added to a vector drawing is an object</p> <p>I can identify the shapes used to make a vector drawing</p> <p>I can move, resize, and rotate objects I have duplicated"</p> <p>I can explain how alignment grids and resize handles can be used to improve consistency</p> <p>I can modify objects to create different effects</p> <p>I can use the zoom tool to help me add detail to my drawings</p>

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	<p>I can change the order of layers in a vector drawing</p> <p>I can identify that each added object creates a new layer in the drawing</p> <p>I can identify which objects are in the front layer or in the back layer of a drawing"</p> <p>I can copy part of a drawing by duplicating several objects</p> <p>I can group to create a single object</p> <p>I can reuse a group of objects to further develop my vector drawing</p> <p>I can apply what I have learned about vector drawings</p> <p>I can suggest improvements to a vector drawing</p> <p>I create alternatives to vector drawings</p>
<p>Creating media – Video editing</p>	<p>I can compare features in different videos</p> <p>I can explain that video is a visual media format</p> <p>I can identify features of videos</p> <p>I can experiment with different camera angles</p> <p>I can identify and find features on a digital video recording device</p> <p>I can make use of a microphone</p> <p>I can capture video using a range of filming techniques</p> <p>I can review how effective my video is</p> <p>I can suggest filming techniques for a given purpose</p> <p>I can create and save video content</p> <p>I can decide which filming techniques I will use</p> <p>I can outline the scenes of my video</p> <p>I can explain how to improve a video by reshooting and editing</p> <p>I can select the correct tools to make edits to my video</p> <p>I can store, retrieve, and export my recording to a computer</p> <p>I can evaluate my video and share my opinions</p> <p>I can make edits to my video and improve the final outcome</p> <p>I can recognise that my choices when making a video will impact on the quality of the final outcome</p>
<p>Data and information – Flat-file</p>	<p>I can create multiple questions about the same field</p> <p>I can explain how information can be recorded</p>

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databases	<ul style="list-style-type: none">I can order, sort, and group my data cardsI can choose which field to sort data by to answer a given questionI can explain what a 'field' and a 'record' is in a databaseI can navigate a flat-file database to compare different views of informationI can combine grouping and sorting to answer more specific questionsI can explain how information can be groupedI can group information to answer questionsI can choose multiple criteria to answer a given questionI can choose which field and value are required to answer a given questionI can outline how 'AND' and 'OR' can be used to refine data selection"I can explain the benefits of using a computer to create graphsI can refine a chart by selecting a particular filterI can select an appropriate chart to visually compare dataI can ask questions that will need more than one field to answerI can present my findings to a groupI can refine a search in a real-world context
Programming A – Selection in physical computing	<ul style="list-style-type: none">I can create a simple circuit and connect it to a microcontrollerI can explain what an infinite loop doesI can program a microcontroller to make an LED switch onI can connect more than one output component to a microcontrollerI can design sequences that use count-controlled loopsI can use a count-controlled loop to control outputsI can design a conditional loopI can explain that a condition is either true orI can program a microcontroller to respond to an inputI can explain that a condition being met can start an actionI can identify a condition and an action in my projectI can use selection (an 'if...then...' statement) to direct the flow of a programI can create a detailed drawing of my project

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	<p>I can describe what my project will do</p> <p>I can identify a real-world example of a condition starting an action</p> <p>I can test and debug my project</p> <p>I can use selection to produce an intended outcome</p> <p>I can write an algorithm that describes what my model will do</p>
Programming B – Selection in quizzes	<p>I can identify conditions in a program</p> <p>I can modify a condition in a program</p> <p>I can recall how conditions are used in selection</p> <p>I can create a program with different outcomes using selection</p> <p>I can identify the condition and outcomes in an 'if... then... else...' statement</p> <p>I can use selection in an infinite loop to check a condition</p> <p>I can design the flow of a program which contains 'if... then... else...'</p> <p>I can explain that program flow can branch according to a condition</p> <p>I can show that a condition can direct program flow in one of two ways</p> <p>I can identify the outcome of user input in an algorithm</p> <p>I can outline a given task</p> <p>I can use a design format to outline my project</p> <p>I can implement my algorithm to create the first section of my program</p> <p>I can share my program with others</p> <p>I can test my program</p> <p>I can extend my program further</p> <p>I can identify the setup code I need in my program</p> <p>I can identify ways the program could be improved</p>

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Year 6	
Computing systems and networks – Communication	<p>I can compare results from different search engines</p> <p>I can complete a web search to find specific information</p> <p>I can refine my search</p> <p>I can explain why we need tools to find things online</p> <p>I can recognise the role of web crawlers in creating an index</p> <p>I can relate a search term to the search engine's index</p> <p>I can explain that a search engine follows rules to rank relevant pages</p> <p>I can explain that search results are ordered</p> <p>I can suggest some of the criteria that a search engine checks to decide on the order of results"</p> <p>I can describe some of the ways that search results can be influenced</p> <p>I can explain how search engines make money</p> <p>I can recognise some of the limitations of search engines</p> <p>I can choose methods of communication to suit particular purposes</p> <p>I can explain the different ways in which people communicate</p> <p>I can identify that there are a variety of ways of communicating over the internet</p> <p>I can compare different methods of communicating on the internet</p> <p>I can decide when I should and should not share</p> <p>I can explain that communication on the internet may not be private</p>
Creating media – 3D Modelling	<p>I can discuss the similarities and differences between 2D and 3D shapes</p> <p>I can explain why we might represent 3D objects on a computer</p> <p>I can select, move, and delete a digital 3D shape</p> <p>I can change the colour of a 3D object</p> <p>I can identify how graphical objects can be modified</p> <p>I can resize a 3D object</p> <p>I can position 3D objects in relation to each other</p> <p>I can rotate a 3D object</p> <p>I can select and duplicate multiple 3D objects</p> <p>I can create digital 3D objects of an appropriate size</p>

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	<p>I can group a digital 3D shape and a placeholder to create a hole in an object</p> <p>I can identify the 3D shapes needed to create a model of a real-world object</p> <p>I can choose which 3D objects I need to construct my model</p> <p>I can modify multiple 3D objects</p> <p>I can plan my 3D model</p> <p>I can decide how my model can be improved</p> <p>I can evaluate my model against a given criterion</p> <p>I can modify my model to improve it</p>
<p>Creating media – Web page creation</p>	<p>I can discuss the different types of media used on websites</p> <p>I can explore a website</p> <p>I know that websites are written in HTML</p> <p>I can draw a web page layout that suits my purpose</p> <p>I can recognise the common features of a web page</p> <p>I can suggest media to include on my page</p> <p>I can describe what is meant by the term 'fair use'</p> <p>I can find copyright-free images</p> <p>I can say why I should use copyright-free images</p> <p>I can add content to my own web page</p> <p>I can evaluate what my web page looks like on different devices and suggest/make edits</p> <p>I can preview what my web page looks like</p> <p>I can describe why navigation paths are useful</p> <p>I can explain what a navigation path is</p> <p>I can make multiple web pages and link them using hyperlinks</p> <p>I can create hyperlinks to link to other people's work</p> <p>I can evaluate the user experience of a website</p> <p>I can explain the implication of linking to content owned by others"</p>
<p>Data and information – Spreadsheets</p>	<p>I can answer questions from an existing data set</p> <p>I can ask simple relevant questions which can be answered using data</p> <p>I can explain the relevance of data headings</p>

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	<ul style="list-style-type: none">I can apply an appropriate number format to a cellI can build a data set in a spreadsheet applicationI can explain what an item of data isI can construct a formula in a spreadsheetI can explain the relevance of a cell's data typeI can identify that changing inputs changes outputs"I can apply a formula to multiple cells by duplicating itI can create a formula which includes a range of cellsI can recognise that data can be calculated using different operationsI can apply a formula to calculate the data I need to answer questionsI can explain why data should be organisedI can use a spreadsheet to answer questionsI can produce a graphI can suggest when to use a table or graphI can use a graph to show the answer to questions
Programming A – Variables in games	<ul style="list-style-type: none">I can explain that the way that a variable changes can be definedI can identify examples of information that is variableI can identify that variables can hold numbers or lettersI can explain that a variable has a name and a valueI can identify a program variable as a placeholder in memory for a single valueI can recognise that the value of a variable can be changedI can decide where in a program to change a variableI can make use of an event in a program to set a variableI can recognise that the value of a variable can be used by a programI can choose the artwork for my projectI can create algorithms for my projectI can explain my design choicesI can choose a name that identifies the role of a variableI can create the artwork for my project

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	<p>I can test the code that I have written</p> <p>I can extend my game further using more variables</p> <p>I can identify ways that my game could be improved</p> <p>I can share my game with others</p>
Programming B – Sensing	<p>I can apply my knowledge of programming to a new environment</p> <p>I can test my program on an emulator</p> <p>I can transfer my program to a controllable device</p> <p>I can determine the flow of a program using selection</p> <p>I can identify examples of conditions in the real world</p> <p>I can use a variable in an if, then, else statement to select the flow of a program</p> <p>I can experiment with different physical inputs</p> <p>I can explain that if you read a variable, the value remains</p> <p>I can use a condition to change a variable</p> <p>I can explain the importance of the order of conditions in else, if statements</p> <p>I can modify a program to achieve a different outcome</p> <p>I can use an operand (e.g. <=>) in an if, then statement</p> <p>I can decide what variables to include in a project</p> <p>I can design the algorithm for my project</p> <p>I can design the program flow for my project</p> <p>I can create a program based on my design</p> <p>I can test my program against my design</p> <p>I can use a range of approaches to find and fix bugs</p>

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