

## Computing Progression Map

Term	Topic	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn Term	Computing Systems and Networks	<ul style="list-style-type: none"> <li>-Shows an interest in technology in the environment</li> <li>-Refers to technology in their play (role play with phone, computer, till etc.)</li> <li>-Interacts with simple computer software and hardware</li> <li>-Knows that information can be retrieved from computers</li> </ul>	<p><b>Technology around us</b></p> <ul style="list-style-type: none"> <li>-Explains technology as something that helps us</li> <li>- Locates examples of technology in the classroom</li> <li>-Identifies a computer and its main parts</li> <li>-Uses a mouse to click and drag</li> <li>-Uses a keyboard to type and edit text</li> <li>-Saves work on a computer</li> <li>-Gives examples of rules for using technology responsibly</li> </ul>	<p><b>IT around us</b></p> <ul style="list-style-type: none"> <li>-Identifies that a computer is a part of Information Technology</li> <li>-Identifies Information technology and its use at home, in school and beyond.</li> <li>-Explains how Information Technology helps people</li> <li>-Recognises how to use Information Technology responsibly</li> <li>-Says how rules and guidelines help you</li> <li>-Opens a file on a computer</li> </ul>	<p><b>Connecting Computers</b></p> <ul style="list-style-type: none"> <li>-Explains that digital devices accept inputs and produce outputs</li> <li>-Identifies input and output devices</li> <li>-Designs a digital device</li> <li>-Recognises similarities and differences between digital and non-digital devices</li> <li>-Explains how a computer network can be used to share information</li> <li>-Understands the role of a network switch</li> <li>-Recognises that a computer network is made up of a number of devices</li> </ul>	<p><b>The Internet</b></p> <ul style="list-style-type: none"> <li>- Describes how networks physically connect to other networks</li> <li>- Outlines how websites can be shared via the World Wide Web (WWW)</li> <li>- Evaluates the consequences of unreliable content</li> </ul>	<p><b>Sharing Information</b></p> <ul style="list-style-type: none"> <li>- Explains that computers can be connected together to form systems</li> <li>- Recognises the role of computer systems in our lives</li> <li>- Recognises how information is transferred over the internet</li> <li>- Contributes to a shared project online</li> </ul>	<p><b>Internet Communication</b></p> <ul style="list-style-type: none"> <li>- Recalls how to use a search engine</li> <li>- Demonstrates that different search terms produce different results</li> <li>- Explains that search terms need to be chosen carefully</li> <li>- Explains the role of web crawlers</li> <li>- Explains how ranking is determined by rules, and that different search engines use different rules</li> <li>- Evaluates different methods of online communication</li> </ul>

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	<b>Creating Media</b>	<p><b>CLC workshop</b></p> <ul style="list-style-type: none"> <li>-uses a paint program to create a simple picture</li> <li>-adds their name to their work using a text tool</li> <li>-Records their voice</li> </ul>	<p><b>Digital painting</b></p> <ul style="list-style-type: none"> <li>-Describes what different free hand painting tools do</li> <li>-Uses paint tools to draw a picture</li> <li>-Creates a picture in the style of an artist</li> <li>-Makes careful choices about the tools and colours to make a digital picture</li> <li>-Knows that different paint tools do different jobs</li> <li>-Knows the difference between painting on paper and on a computer</li> </ul>	<p><b>Digital Photography</b></p> <ul style="list-style-type: none"> <li>-Knows what devices are used to take photographs</li> <li>-Sorts devices into old and new</li> <li>-Uses a digital device to take landscape and portrait photographs</li> <li>-Describes what makes a good photograph</li> <li>-Discusses how photographs can be improved</li> <li>-Experiments with different light sources</li> <li>-Focuses on an object being photographed</li> <li>-Recognises images that are real and that have been changed</li> </ul>	<p><b>Animation</b></p> <ul style="list-style-type: none"> <li>-Explains that an animation is a sequence of drawings or photographs</li> <li>-Creates an effective stop frame animation</li> <li>-Predicts what an animation will look like</li> <li>-Plans an animation</li> <li>-Creates a story board (setting, characters, events)</li> <li>-Identifies the need to work consistently and carefully when creating an animation</li> <li>-Reviews and improves an animation</li> </ul>	<p><b>Audio editing</b></p> <ul style="list-style-type: none"> <li>- Recognises that sound can be digitally recorded</li> <li>- Recognises that some digital devices have microphones</li> <li>- Recognises that recorded audio is stored as a file</li> <li>- Understands that audio can be edited and altered</li> <li>- Understands that sound can be layered</li> <li>- Considers the results of editing choices made</li> </ul>	<p><b>3D modelling – Purple Mash</b></p> <ul style="list-style-type: none"> <li>- Explores the different viewpoints</li> <li>2Design and Make whilst designing a building</li> <li>- Adapts one of the vehicle models by moving the points to alter the shape of the vehicle while still maintaining its form</li> <li>- explore how to edit the polygon 3D models to design a 3D model for a purpose</li> <li>- refine and print a model</li> </ul>	<p><b>3D modelling</b></p> <ul style="list-style-type: none"> <li>- to recognise that 3D objects comprise length, width and height (depth)</li> <li>- recognise the differences when working in 3D compared with 2D</li> <li>- recognise that structures can be broken down into collection of 3D objects</li> <li>- recognise the similarities and differences between real-life 3D and virtual 3D</li> </ul>
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Spring Term	Creating Media	<p><b>Digital Photography</b> -Uses i-pads and cameras to experiment with taking photos</p> <p><b>Busy Bodies</b> -Makes predictions -Identifies patterns -Follows a set of instructions to make a model -Creates a sequence of steps (algorithm) to make a model -Sorts animals into groups -Follows instructions for a simple set of movements -Debugs their algorithm and suggests ways of improving it</p>	<p><b>Digital Writing</b> -Finds keys on a keyboard -Opens a word processor -Adds and removes text on a computer -Identifies the toolbar and use bold, italic and underline -Types capital letters -Changes the font -Uses letter, number and space keys -Explains what tool they used to change the text -Compares writing on a computer with writing on paper</p>	<p><b>Making Music</b> -Describes how music makes us feel -Identifies simple differences in pieces of music -Identifies that there are patterns in music -Creates a rhythm pattern -Connects images with sounds -Uses a computer to experiment with pitch and duration -Identifies that music is a sequence of notes -Uses a computer to create a musical pattern using three notes -Creates music for a purpose</p>	<p><b>Desktop Publishing</b> -Recognises that text and images can communicate messages clearly -Knows that text and layout can be edited -Changes the font, size and colours for a purpose -Chooses appropriate page settings (template, orientation) -Creates a template for a particular purpose -Adds content to a desktop publishing publication -Chooses suitable layouts for a given purpose -Explains the benefits of using desktop publishing</p>	<p><b>Photo editing</b> - explain that digital images can be changed - change the composition of an image - describe how images can be changed for different uses - make good choices when selecting different tools - recognising that not all images are real - evaluating how changes can improve an image</p>	<p><b>Video editing</b> - recognising video as moving pictures, which can include audio - identify digital devices that can record video - capturing video using a digital device - capturing video using a digital device - recognising the features of an effective video - identifying that video can be improved and editing - considering the impact of the choices made when making and sharing a video</p>	<p><b>Web page creation</b> - reviewing an existing website and consider its structure - planning the features of a web page - considering the ownership and use of images (copyright) - recognising the need to preview pages - outlining the need for navigation path - recognising the implications of linking to content owned by other people</p>

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	<b>Data and information</b>	<p><b>Map Programs</b></p> <ul style="list-style-type: none"> <li>-Looks at maps of the local area on Google maps</li> <li>-Identifies features on a map</li> <li>-Draws a simple map</li> </ul> <p><b>Boats Ahoy</b></p> <ul style="list-style-type: none"> <li>-Makes predictions</li> <li>-Identifies patterns</li> <li>-Follows an algorithm to make a boat</li> <li>-Tests and debugs their design</li> </ul>	<p><b>Grouping data</b></p> <ul style="list-style-type: none"> <li>-Describes objects using labels</li> <li>-Matches objects to groups</li> <li>-Identifies that objects can be counted in groups</li> <li>-Describes a property of an object</li> <li>-Finds objects with similar properties</li> <li>-Groups objects in more than one ways</li> <li>-Compares groups of objects</li> <li>-Answers questions about groups of objects</li> </ul>	<p><b>Pictograms</b></p> <ul style="list-style-type: none"> <li>-Recognises that we can compare and count objects using a tally chart</li> <li>-Records data in a tally chart</li> <li>-Uses a pictogram to answer simple questions about objects</li> <li>-Uses a tally chart to create a pictogram</li> <li>-Creates a pictogram to arrange objects by an attribute</li> <li>-Recognises that people can be described by attributes</li> <li>-Draws conclusions from a pictogram and shares what they have found</li> </ul>	<p><b>Branching databases</b></p> <ul style="list-style-type: none"> <li>-Creates questions with yes/no answers</li> <li>-Arranges objects into a tree structure</li> <li>-Selects an attribute to separate objects</li> <li>-Creates a branching database</li> <li>-Selects objects to arrange in a branching database</li> <li>-Uses a branching database to answer questions</li> <li>-Explains why it is helpful for a database to be well structured</li> <li>-Compares the information shown in a pictogram with a branching database</li> </ul>	<p><b>Data and Data loggers</b></p> <ul style="list-style-type: none"> <li>- explaining the data gathered over time can be used to answer questions</li> <li>- using a digital device to collect data automatically</li> <li>- explaining that a data logger collects 'data points' from sensors over time</li> <li>- using data collected over a long duration to find information</li> <li>- identifying the data needed to answer questions</li> <li>- using collected data to answer questions</li> </ul>	<p><b>Data and Flat file databases</b></p> <ul style="list-style-type: none"> <li>- Use a form to record information</li> <li>- compare paper and computer-based databases</li> <li>- outline how grouping and then sorting data allows us to answer questions</li> <li>- explain that tools can be used to select specific data</li> <li>- explain that computer programs can be used to compare data visually</li> <li>- apply my knowledge of a database to ask and answer real-world questions</li> </ul>	<p><b>Spreadsheets</b></p> <ul style="list-style-type: none"> <li>- identify questions which can be answered using data</li> <li>- explain that objects can be described using data</li> <li>- explain that formula can be used to produce calculated data</li> <li>- apply formulas to data, including duplicating</li> <li>- create a spreadsheet to plan an event</li> <li>- choose suitable ways to present data</li> </ul>
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Summer Term	Programming A	<b>Programmable Toys</b> -Compares programmable toys to old mechanical toys	<b>Moving a robot</b> -Explains what a given command will do -Matches a command to an outcome -Runs a command on a device -Follows an instruction -Gives directions -Combines forwards and backwards demands to make a sequence -Starts a sequence from the same place -Combines four direction commands to make a sequence - Plans and debugs a simple program -Explains what their program should do	<b>Robot algorithms</b> -Follows instructions given by someone else -Gives clear and unambiguous instructions -Creates different algorithms for a range of sequences -Explains what happens when they change the order of instructions -Uses logical reasoning to predict the outcome of a program -Understands that programming projects can have artwork and code -Uses an algorithm to create a program -Plans algorithms and puts together the different parts of a program -Tests and debugs each part of a program they have created	<b>Sequence in music</b> -Identifies the objects in a Scratch project and their attributes -Recognises that commands are represented as blocks -Creates a program following a design -Identifies that each sprite is controlled by a command -Explains that a program has a start -Creates a sequence of connected commands -Changes the appearance of their project -Makes design choices for their artwork -Combines sound commands -Orders notes into a sequence	<b>Repetition in shapes</b> - identifying that accuracy in programming is important - creating a program in a text-based language - explaining what 'repeat' means - modifying a count-controlled loop to produce a given outcome - decompose a program into parts - creating a program that uses count-controlled loops to produce a given outcome	<b>Selection in physical computing</b> - control a simple circuit connected to a computer - write a program that includes count-controlled loops - explain that a loop can stop when a condition is met, eg number of times - conclude that a loop can be used to repeatedly check whether a condition has been met - design a physical project that includes selection - create a controllable system that includes selection	<b>Variables in games</b> - define a variable as something that is changeable - explain why a variable is used in a program - choose how to improve a game by using variables - design a project that builds on a given example - use their design to create a project - evaluate their project

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	<b>Programming B</b>	<b>CLC workshop</b> -Shows an interest in technology controlled toys -understands that pressing specific buttons causes the robot to move -Debugs and begins to correct mistakes -Gestures where the robot needs to go -Begins to combine buttons -understands that some buttons will perform opposite movements -develops a simple algorithm including turns	<b>Introduction to animation</b> -Chooses a command for a given purpose -Uses commands to move a sprite -Uses a start block in a program -Uses more than one block by joining them together -Finds blocks with numbers and says what happens if they change a value -Explains that each sprite has its own instruction -Creates an algorithm for each sprite -Adds programming blocks based on their algorithm -Tests the program they have created	<b>Introduction to quizzes</b> -Understands that a sequence of commands has a start -Identifies the start of a sequence -Changes the outcome of a sequence of commands -Matches two sequences with the same outcome -Predicts the outcome of a sequence of commands -Creates a program using a given design -Describes the actions of a sprite in an algorithm -Changes a given design (background, character) -Creates a program using their own design -Debugs a program	<b>Events and actions</b> -Explains how a sprite moves in an existing project -Chooses which keys to use for an action and explains their choices -Creates a program to move a sprite in four directions -Adapts a program to a new context -Chooses blocks for a program -Uses programming extensions -Chooses suitable keys to turn on additional features -Identifies and fixes bugs in a program -Matches a piece of code to an outcome -Tests a program against a given design	<b>Repetition in games</b> - developing the use of count-controlled loops in a different programming environment - explaining that in programming there are infinite loops and count controlled loops - developing a design which includes two or more loops which run at the same time - modify an infinite loop in a given program - design a project that includes repetition - create a project that includes repetition	<b>Selection in quizzes</b> - explain how selection is used in computer programs - relate that a conditional statement connects a condition to an outcome - explain how a selection directs the flow of a program - design a program which uses selection - create a program which uses selection - evaluate their project	<b>Sensing</b> - create a program to run on a controllable device - explain that selection can control the flow of a program - update a variable with a user input - use an conditional statement to compare a variable to a value - design a project that uses inputs and outputs on a controllable device - develop a program to use inputs and outputs on a controllable device
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