Backworth Park Primary School Long Term Plan Computing

	Term 1	Term 2	Term 3
EYFS	**Online safety** Can I find information online? • Understand the importance of not sharing personal information. • Start to identify when I feel unsafe online • Learn that I should tell and adult if I feel unsafe online **Digital literacy** • With support, begin to understand the basics of what the internet is and how to access information or websites safely. • With support, begin to use different types of software or apps to begin to build skills in using technology for various tasks. • With support, learn how to search for and gather information using technology.	**Computer science** Can I move on object on a screen? • Explore and play with computer games. • Start to use and name different parts of technology (like buttons, screens, or keyboards). • Begin to plan and try out simple instructions (such as moving a character or object in a game). • Move objects or characters on the screen using technology. • Use simple programs or apps with help to play or create things.	**Information Technology** What technology do we use at home and at school? • Begin to recognise letters on a keyboard. • Start to type their own name using a keyboard. • Learn simple keyboard commands (e.g., pressing enter or space bar). • Identify and talk about different types of technology they see in everyday life (such as computers, phones, or tablets).
Year 1	**Online safety** Keeping safe online • Know when and why to take breaks from device time. • Discover that the internet can be used to visit faraway places and learn new things. • To recognise common uses of technology in the home • To understand how shops might use technology • To explore control technology devices • To explain how a control device works	**Digital literacy** Making multimedia stories • Begin to use two hands for typing, Name parts of a computer, Add text to a text box • Make simple changes to selected text, e.g. colour, style and size. • Use drawing tools effectively (e.g. make use of tools such as fill or shape tools). • Be able to select and listen to a sound from a bank of pre-recorded sounds. • Use drawing tools effectively (e.g. make use of tools such as fill or shape tools).	**Computer science** Action algorithms • To know what an algorithm is • To write an algorithm for a recipe • To write an algorithm for sharing • To improve an algorithm • To understand that computers follow programming languages or 'code' • To give clear, unambiguous instructions Programming direction • Give clear unambiguous instructions • Make predictions when giving instructions • Create algorithms for directions

	Digital literacy 📖	**Digital Literacy** 📖	• Create algorithms for directions including turning • Begin to create algorithms with a written programming language
	Explore digital sound • Explore making simple sounds • To combine layers of sound to compose a simple tune with a beat • Explore a range of electronic music and sound devices and software. • Explore a range of electronic music and sound devices and software • Create images to accompany a soundtrack • To create a soundtrack that matches the mood of an image	Digital art • Look at the differences between a computer art and paper-based art • Understand there are a variety of tools in a paint package, each for a different purpose. • Use shape, line and colour to create a artistic style called Impressionism. • Use shape, line and colour to create a artistic style called Pointillism. • Use shape, line and colour to create a artistic style called modern art. • Use shape, line and colour to create a artistic style called street art.	
Year 2	**Online safety** 💻	**Computer science** ⚙️	**Information Technology** 🖥️
	Keep safe and create • Understand the importance of being safe, responsible and respectful online. • Import images into multimedia resources to share ideas to engage others. • Know what to do when they don't have a good feeling when using technology. • Create an interactive survey to gather other people's opinions. • Learn to identify websites and apps that are "just right" and "not right" for them. • Learn to identify websites and apps that are "just right" and "not right" for them. • Know how to get help from an adult if they are unsure about a website **Digital literacy** 📖 Write in different styles • Begin to use two hands for typing	Program with Scratch jr • Create and debug simple programs • Program the movement and appearance of an on-screen sprite • Program sprites to create a short animation • Investigate different ways of triggering movement with code • Program scene changes in an animation • Design and program a simple game with multiple sprites • Use messaging to control sprites in a game Program with Logo • To understand that Logo is a programming language • To give simple commands using Logo • To decompose a bigger problem into smaller parts • To use repeat commands in Logo to draw regular shapes	Find and present information • Use and explore appropriate buttons, arrows, menus and hyperlinks to navigate teacher selected web sites. • Use and explore buttons, arrows, menus and hyperlinks to navigate a website. • Use simple graphing software to produce pictograms and other basic tables or graphs. • Sort and classify a group of items by asking simple yes / no questions. This may take place away from the computer, e.g. a 'Guess Who' game. • Use a database program, where appropriate, to sort and identify items.

	• To apply simple formatting to text • Use speech bubbles, thought bubbles and text boxes • To design your own layout for a document • To import images into a document • To use a spell checker	• Use logical reasoning to predict what a simple program will do • To use repeat commands in Logo to draw regular shapes • To look for similarities and differences between two programming languages	
Year 3	**Digital literacy/online safety** Unit resources • Recognise the ways in which digital devices can be distracting. • Understand that they should never give out private information online. • Learn that the information they share online leaves a digital footprint or "trail" • Compare and contrast how they are connected to different people and places, in person and on the internet • Understand what online meanness can look like and how it can make people feel • Explain how giving credit is a sign of respect for people's work **Computer science** Patterns in nature • Acquire, store and retrieve images from cameras, scanners or the Internet for a purpose. • Understand the need for caution when using the Internet to search for images and what to do if they find unsuitable images (See school's Acceptable Use Policy/AUP) • Use a lasso tool to select specific areas of an image. • Use a lasso tool to select specific areas of an image.	**Information technology** Communication and collaboration • Log on to an email account, open emails, create and send appropriate replies. • Know and apply the school's rules for keeping safe online and be able to apply these beyond school. • Attach different files to emails, e.g. text document, sound file or image. • To understand, use and explain cloud storage • To log into, create and share a collaborative document or application • Understand the need for certain rules of conduct, particularly when using live forums of communication, e.g. chats, forums, live docs	**Computer science** Starting from Scratch • To understand and explain key vocabulary linked to programming. • To become familiar with the Scratch programming environment (blocks, sprites, stage, canvas, controls). • Use logic to debug existing code and explain your changes. • To sequence a series of commands accurately and in the most efficient way. • To plan and create an animation using code. • To create an animation using code. • To critically evaluate the work of a classmate and offer constructive feedback. Getting started with Kodu • Create and refine sequences of commands to make a character move • Use logical reasoning to debug algorithm • Plan and design a 3D game environment • Create and refine sequences of commands to make a character move • Use logical reasoning to debug algorithms • Design programs with sequence and selection that accomplish specific goals • Use logical reasoning to debug algorithms • Evaluate a program that they have created and say what they liked and what could be done to improve it • Plan and design a 3D game environment

	- Be able to resize various elements in a graphics or paint package. - Import music, stills or video into video editing software for a specific project.		- Create and refine sequences of commands to make a character move - Evaluate a program that they have created and say what they liked and what could be done to improve it - Make improvements to a game based on feedback
Year 4	**Online safety** **Digital Literacy and Online Safety** - Examine both in-person and online responsibilities. - Describe the Rings of Responsibility as a way to think about how our behaviour affects ourselves and others. - Define the term "password" and describe a password's purpose. - Understand why a strong password is important. - Consider how posting selfies or other images will lead others to make assumptions about them. - Define what a community is, both in person and online. - Understand that it's important to think about the words we use, because everyone interprets things differently. - Identify ways to respond to mean words online, using S-T-O-P. - Recognise that photos and videos can be altered digitally. **3D Design** - Navigate a 3D environment successfully - Create simple 3D models - Use the referencing tools in Sketchup to help keep elements in proportion - Use a range of simple drawing tools in Sketchup	**Information technology** **Search the web** - To explain in simple terms what a search engine is - To understand how search results are selected and ranked, including that search engines use 'web crawler programs'. - To stay safe when going online and to know what to do if they have a problem - To stay safe when going online and to know what to do if they have a problem - To research and validate information on websites - Make and explain judgements about the design of digital content - To compare and contrast different types of maps - To use a variety of tools in digital maps to find and explore places - To understand and explain artificial intelligence (AI) in simple terms - To create clear and precise prompts for a generative AI chatbot - To understand possible negative uses of generative AI	**Computer science** **Program Scratch** - To design an appropriate setting for a video game - To program the movement of a sprite - To understand and apply the use of coordinates when coding character movement - To understand and use conditions in programming - To debug a program, explaining errors you find and how to fix them - To understand and use variables - Understand and use broadcasts as event triggers - Talk about how they made their program and justify the choice they made for both function and design. - Critically evaluate programs and say what they liked and what could be done to improve it. **Program Kodu** - Identify different gaming genres. - Understand and explain how to stay safe when gaming. - Create a detailed plan for a video game - Clearly explain the key features of a video game plan - To independently create a 3D environment appropriate for a specific video game genre - To design, write and debug programs that accomplish specific goals.

	• Apply colour and materials to a 3D model • Create a detailed 3D building model • Create and use components in a Sketchup model • Design buildings that fit a particular architectural theme or period in history		• To make judgements about digital content when evaluating it. • To use evaluation criteria to identify and suggest improvements.
Year 5	**Online safety** Unit resources • Learn the "What? When? How Much?" framework for describing their media choices. • Use this framework and their emotional responses to evaluate how healthy different types of media choices are. • Identify the reasons why people share information about themselves online. • Explain the difference between private and personal information. • Define the term "digital footprint" and identify the online activities that contribute to it. • Define "social interaction" and give an example. • Describe the positives and negatives of social interaction in online games. • Reflect on the characteristics that make someone an upstanding digital citizen. • Define "copyright" and explain how it applies to creative work. **Digital literacy** Build collaborative websites • Log-in and manage an online account and password safely	**Computer science** Build retro games • Analyse an existing video game and explain how it works • Understand and use sequence, selection, and repetition in programs • Use X and Y coordinates effectively to control a sprite's movement • Understand and use variables to control functions in a game • Plan ways to add to and improve a program • Use sequence, selection, and repetition in programs • Use logical reasoning to debug programs • Plan ways to add to and improve a program • Analyse an existing video game and explain how it works • Understand and use variables to control functions in a game **Computer science** Lego robotics Understand and use variables to control functions in a game Plan ways to add to and improve a program Use sequence, selection, and repetition in programs	**Information technology** What is a computer • To recognise computers in machines around us • To understand and explain input and output devices for computers • To recognise that a range of digital devices can be considered a computer. • To explain the differences between types of common computers. • To understand the difference between hardware and software. • To understand and use the binary number system. • To convert decimal numbers to binary and vice versa. • To know that computers transfer data in binary. • To understand how bit patterns represent numbers and images. • To understand the relationship between colours in an image and data. • To compare and contrast different types of computer data storage. • To understand how computers store and process data. **Digital literacy** Manipulate sound • Use a variety of music software to experiment with capturing, repeating and sequencing sound patterns.

	• To work effectively with others on a collaborative document or application • Recognise the features of good design in electronic media • To work effectively with others on a collaborative document or application • Understand that images, sounds and text can be subject to copyright and abide by copyright rules. • Through peer and self-assessment, evaluate work and make improvements. • Develop and use criteria to evaluate design and layout of a website.	Use X and Y coordinates effectively to control a sprite's movement Use logical reasoning to debug programs Analyse an existing video game and explain how it works Understand and use variables to control functions in a game	• Understand the difference between digital and analogue sound • Use music software to experiment with capturing, repeating and sequencing sound patterns. • Talk about software which allows the creation and manipulation of sound and music. • Locate and use sound files from online sources. • Select, import and edit existing sound files in sound editing software. • Use editing tools to alter recorded sounds for a specific purpose e.g to alter the mood or atmosphere. • Understand issues relating to copyright when choosing music samples and files and apply to their work. • Select, edit, manipulate and combine sound files from a range of sources to create a composition which could be broadcast for a specific purpose and audience • Upload and download projects to other devices and online space, collaborating and communicating with audiences in locations beyond school.
Year 6	**Online safety** 🖥️ Searching the web • **To explain in simple terms what a search engine is** • To understand how search results are selected and ranked, including that search engines use 'web crawler programs'. • To stay safe when going online and to know what to do if they have a problem • To use a variety of tools when searching for images • To stay safe when going online and to know what to do if they have a problem • To stay safe when going online and to know what to do if they have a problem • To compare and contrast different types of maps	**Information technology** 🖧 Spreadsheet masters • Explain what a spreadsheet is; • Describe how a spreadsheet could be used by someone at work; • Label the different areas of a spreadsheet using the correct vocabulary; • Create simple formulae in a spreadsheet. • Use cell references to complete formulae • Use a set of data in a spreadsheet to create an appropriate chart • Use tools in a spreadsheet to help someone understand the information more quickly • Create a spreadsheet to test maths facts • Use Conditional formatting to mark the questions Inside the internet	**Computer science** ⚛️ Starting out with micro:bit • To create simple programs to control the LED matrix on the micro:bit • To edit and adapt simple programs on the micro:bit • To download, load and test the .hex file on the micro:bit. • To create simple programs to control the LED matrix on the micro:bit • To understand inputs and outputs on a computer Designs algorithms that use variables, and selection and arithmetic operators • Use logical reasoning to predict the behaviour of programs • Build and program a physical game that utilises inputs and outputs. • Understand what conditional statements are

- To use a variety of tools in digital maps to find and explore places
- To understand and explain artificial intelligence (AI) in simple terms
- To create clear and precise prompts for a generative AI chatbot

Digital literacy

[Manipulate images](#)

- To use a range of photo editing tools and techniques to create a pop art style image inspired by Andy Warhol's work
- To effectively work with multiple layers in an image
- To use a range of photo editing tools and techniques to create a pop art style image inspired by Andy Warhol's work
- To effectively work with multiple layers in an image
- To successfully use the lasso, marquee and eraser tools to successfully combine a number of separate images into one.
- To develop familiarity with 3D modelling tools and techniques
- To work independently with a range of 3D modelling tools and techniques
- To create a 3D digital sculpture for a specific real- life location
- To work independently with a range of 3D modelling tools and techniques
- To create a 3D digital sculpture for a specific real-life location

- To know and explain the purpose of key components in a typical school network
- To draw, label and explain a typical school network
- To know and explain the services offered by a typical school network
- To understand how data travels around the Internet
- To understand that web pages are written in HTML
- To recognise simple HTML formatting language
- To view the HTML page in a browser
- To understand that web pages are written in HTML
- To recognise simple HTML formatting language
- To edit CSS code to change the style of a web page
- To independently edit HTML code and remix a web page
- To independently edit CSS code to change the style of a web page

- Understand what conditional statements (selection) are, and why and when to use them in a program
- Understand what variables are and why and when to use them in a program.
- Learn how to create, set and change a variable value within a micro:bit program.

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Key:

📖	Digital Literacy
⚛	Computer Science
🔐	Online Safety
🖥	Information Technology