Lancasterian Primary School

A safe and welcoming learning community where:

- we all aim high;
- everyone is included;
- creativity is valued.

KS1/2

Computing Curriculum Map

	EYFS	Y1	Y2	Y3	Y4	Y5	Y6
Autumn 1	**Interacting with a touch screen** To understand the rules for using devices responsibly. To identify the interactive screen as a device. To understand the importance of one person and one finger touching the screen. To move the cursor by swiping with one finger To select an object on the screen, click and drag (swiping) To undo a mistake Suggested Extended Abstract/Greater Depth Task: Create a self-portrait using an IPAD	**Computer Systems and Networks – Tech Around Us** To identify technology To identify a computer and its main parts To use a mouse in different ways To use a keyboard to type To use the keyboard to edit text To create rules for using technology responsibly Suggested Extended Abstract/Greater Depth Task: Create an image of an activity they like and use the keyboard to label this	**Computer Systems and Networks- IT Around Us** To recognise the uses and features of information technology To identify information technology in the home To identify information technology beyond school To explain how information technology benefits us To show how to use information technology safely To recognise that choices are made when using information technology Suggested Extended Abstract/Greater Depth Task: Imagine if there wasn't an electronic till in a shop, what would the impact of this be?	**Computer Systems and Networks – Connecting Computers** 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 Suggested Extended Abstract/Greater Depth Task: Create a map of the network throughout the school	**Computer Systems and Networks – The Internet** 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 To describe how content can be added and accessed on the World Wide Web To recognise how the content of the WWW is created by people To evaluate the consequences of unreliable content Suggested Extended Abstract/Greater Depth Task: Imagine a website had been hacked, how could you check the information on it is true?	**Computer Systems and Networks – Sharing Information** To explain that computers can be connected together to form systems To recognise the role of computer systems in our lives To recognise how information is transferred over the internet To explain how sharing information online lets people in different places work together To contribute to a shared project online To evaluate different ways of working together online Suggested Extended Abstract/Greater Depth Task: Consider what challenges would arise if there was no chat function when creating a shared online project	**Computer Systems and Networks – Communication** To identify how to use a search engine 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 recognise how we communicate using technology To evaluate different methods of online communication Suggested Extended Abstract/Greater Depth Task: Debate whether you should always click on the top result on a search engine

	Software	Software	Software	Software	Software	Software	Software
	Busythings	**Busythings – Paint/Publisher**	**J2e5/Busythings – Publisher/Purplemash**	**Busythings – Paint/Publisher, Purplemash 2Paint**	**Various Websites**	**Microsoft Teams**	**Microsoft Teams**
Autumn 2	**Computer Networks and Systems – Devices** To recognise that a range of technology is used in places such as home and school To understand the difference in how devices are used To name parts of a computer To identify the power button on different components of a computer To log into a device at school To use the mouse to click on objects To use the mouse to click, drag and make marks on the page. Suggested Extended Abstract/Greater Depth Task: Quiz your partner, can they name the different components of the computer and say what they do?	**Programming Control a Bee Bot** (linked to Geography Local Area) 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 Suggested Extended Abstract/Greater Depth Task: Generate ideas to find more than one solution to get from start to finish	**Programming Control a Blue Bot using ipads (**linked to History- Londinium) 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 (series of commands) To explain that programming projects can have code and artwork To design an algorithm To create and debug a program that I have written Suggested Extended Abstract/Greater Depth Task: Control the Blue Bot using the Blue Bot app (introduction to Bluetooth)	**Desktop Publishing** 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 Suggested Extended Abstract/Greater Depth Task: Create your own magazine cover and give reasons for your choice of layout and colour	**Photo Editing** To explain that digital images can be changed To change the composition of an image To describe how images can be changed for different uses To make good choices when selecting different tools To recognise that not all images are real To evaluate how changes can improve an image Suggested Extended Abstract/Greater Depth Task: Debate the risks and benefits of photoshopping images or not	**Video Editing** To recognise video as moving pictures, which can include audio To identify digital devices that can record video To capture video using a digital device To recognise the features of an effective video 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 Suggested Extended Abstract/Greater Depth Task: Create own film using different types of shots, effects, and music	**Web page Creation** 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 Suggested Extended Abstract/Greater Depth Task: Debate if it is a problem to use content which is owned by other people
	Software	**Software**	**Software**	**Software**	**Software**	**Software**	**Software**
	Busythings	**Bee Bot**	**Blue Bot app**	**Adobe Express**	**Paint.net/Paint 3D**	**Windows Movie Maker**	**Adobe Express**
Spring 1	**Keyboard skills** To use the arrow keys To use enter, shift, spacebar and backspace	**Digital Painting** To describe what different freehand tools do	**Data and Information- Pictograms** (linked to Science living things and their habitats)	**Data and Information- Branching Databases-** To create questions with yes/no answers	**Programming** To identify that accuracy in programming is important	**Programming – Selection - Scratch/ In O Bot (**linked to Science – Earth and Space) To explain how selection is used in computer programs	**Data and Information- Spreadsheets** To identify questions which can be answered using data

	keys To begin to identify the letters on the keyboard. To identify the letters in their name and type this using the keyboard Suggested Extended Abstract/Greater Depth Task: Write a short phrase using the keyboard tools	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 Suggested Extended Abstract/Greater Depth Task: Create a piece of art in the style of an artist of your choice	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 Suggested Extended Abstract/Greater Depth Task: Create independent pictogram on own gathered data and generate questions from a peer	To create a branching database To explain why it is helpful for a database to be well structured To identify objects using a branching database To identify the object attributes needed to collect relevant data To compare the information shown in a pictogram with a branching database Suggested Extended Abstract/Greater Depth Task: Identify open and closed questions and decide which would be appropriate for a branching database	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 program into parts To create a program that uses count-controlled loops to produce a given outcome Suggested Extended Abstract/Greater Depth Task: Construct a program with a nested loop	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 Suggested Extended Abstract/Greater Depth Task: Design a quiz of choice with more than 3 questions using the above rules	To explain that objects can be described using data To explain that formula can be used to produce calculated data To apply formulas to data, including duplicating To create a spreadsheet to plan an event To choose suitable ways to present data Suggested Extended Abstract/Greater Depth Task: Calculate a budget using multiple formulas
	Software	**Software**	**Software**	**Software**	**Software**	**Software**	**Software**
	Busythings – Paint/Publisher	**JBusythings – 2Paint/Publisher**	**J2e – JiT5 - Pictograms**	**J2e- J2Data/Purplemash – 2Question**	**J2e – J2Logo**	**Scratch**	**Microsoft Teams- Excel**
Spring 2	**Animation** To use the mouse to draw images To use a range of tools from the toolbox to create a picture To select a tool to undo a mistake To click and drag the image to create a new frame To use the onion layer to make changes to the original image	**Digital Writing** 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	**Animation** (linked to History Great Fire of London) 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	**Programming- Sequencing Scratch** (linked to History – Ancient Egypt) 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	**Programming** To explore, design and write programs To debug programs and solve problems To explore directional language and use with a variety of software on digital devices To use logical reasoning to explain algorithms and programs are working To use repetition to practise decomposition skills	**Vector Drawing** 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 evaluate my vector drawing	**Creating Games** 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

	Suggested Extended Abstract/Greater Depth Task: Explain which tools they used to create their animation	To compare writing on a computer with writing on paper Suggested Extended Abstract/Greater Depth Task: Create multiple phrases which show changes to text	Suggested Extended Abstract/Greater Depth Task: Design an animation and add speech or text to describe what is happening	Suggested Extended Abstract/Greater Depth Task: Design differing costumes for a spirit by using the next costume block	To use selection to work with various forms of inputs and outputs. Suggested Extended Abstract/Greater Depth Task: Why is it important for programmers to debug their programs?	Suggested Extended Abstract/Greater Depth Task: Create a picture using multiple objects that have been grouped together	Suggested Extended Abstract/Greater Depth Task: Design a multi-level game
	Software /Activities	**Software /Activities**	**Software /Activities**	**Software /Activities**	**Software /Activities**	**Software /Activities**	**Software /Activities**
	Purplemash – 2Create a Story	**Purplemash – 2Publish/ Busythings- Publisher**	**Purplemash – 2Animate**	**Scratch**	**Lego WeDo/ Code IT/ In O Bot**	**Microsoft Word**	**Scratch**
Summer 1	**Simulation** To select a program from an online resource To select the mouse or keyboard to move the sprite on the screen To navigate on the page to avoid obstacles To complete a simple program on the computer Suggested Extended Abstract/Greater Depth Task: Complete game which involves a maze and obstacles	**Data and Information Grouping Data** 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 Suggested Extended Abstract/Greater Depth Task: Generate groups to sort a set of given objects and decide on the criteria	**Digital Photography** To know what devices can be used to take photographs To use a digital device to take 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 images can be changed Suggested Extended Abstract/Greater Depth Task: Think of an example of a fake image you have seen, why may this be harmful to others? What are the reasons for it being changed?	**Programming -Events and Actions** To explore a new programming environment To identify that each sprite is controlled by the commands I choose 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 Suggested Extended Abstract/Greater Depth Task: Create a model of their choice using a motion sensor	**Data and Information-Data logging** 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 use data collected over a long duration to find information To identify the data needed to answer questions To use collected data to answer questions Suggested Extended Abstract/Greater Depth Task: Generate own criteria for collecting data e.g., could be data over a period of time and summarise what this shows	**Programming** 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, e.g. number of times To conclude that a loop can be used to repeatedly check whether a condition has been met To create a controllable system which includes selection Suggested Extended Abstract/Greater Depth Task: Design a physical project which includes selection	**Programming - Sensing** 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 Suggested Extended Abstract/Greater Depth Task: Design a program to connect one microbit with another
	Software	**Software**	**Software**	**Software**	**Software**	**Software**	**Software**
	Busythings - Computing	**J2e- JiT5**	**Cameras/ipads/ Paint 3D**	**Lego WeDo**	**Data loggers**	**Crumble Kit/ Scratch LED Rainbow Matrix using Scratch controller**	**BBC Micro bit/ J2e- J2Code Microbit**

Summer 2	**Control a Bee Bot** To introduce the Bee Bot To explore Bee Bot and try out the buttons To identify the commands on a Bee Bot and say what they do To instruct a Bee Bot to go forwards and backwards To instruct a Bee Bot to turn left or right Suggested Extended Abstract/Greater Depth Task: Instruct Bee Bot to reach an end goal using all four directions	**Programming - Animation** (linked to Geography Climate and seasons) 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 Suggested Extended Abstract/Greater Depth Task: Create a program using own algorithm	**Programming** 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 Suggested Extended Abstract/Greater Depth Task: Design own program using a variety of features e.g., recording, shrinking	**Stop Frame Animation** (linked to History Ancient Greece) 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 Suggested Extended Abstract/Greater Depth Task: Instruct a partner on how to create a successful stop frame animation, ensuring captures are only of what needs to be in the animation	**Programming – Repetition in Games** 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 which 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 Suggested Extended Abstract/Greater Depth Task: Design a program which adds in a score variable to calculate how many sprites have been clicked on	**Flat -file Databases** To use a form to record information To compare paper and computer-based databases To apply my knowledge of a database to ask and answer real-world questions To explain that tools can be used to select data to answer questions Suggested Extended Abstract/Greater Depth Task: Debate whether we should go back to paper-based databases	**Programming** To learn how to execute controlled movements (e.g., straight move, point turn, curved move) using a Driving Base Use the Ultrasonic Sensor to detect and respond to an object To program their Driving Base to stop and follow a black line To program the Driving Base to stop at specific angles To use My Blocks to help organise the programs Suggested Extended Abstract/Greater Depth Task: Explore how to move and release objects using the Driving Base
	Software	**Software**	**Software**	**Software**	**Software**	**Software**	**Software**
	Bee Bots, cards and maps	**Junior Scratch**	**Scratch Junior/J2e 2code**	**Ipads - imovie**	**Scratch/ Purplemash- 2Code – Free Code Gibbon**	**J2e- J2Data/ Purplemash – 2investigate**	**EV3 Robots** Robot Trainer | MINDSTORMS EV3 Unit Plan | LEGO® Education