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	While there is no formal expectation for Computing to be taught in EYFS it is important that pupils are exposed to technology in meaningful and appropriate ways. It is important to consider what experiences you want pupils to have so they are ready to access the year 1 curriculum. Barefoot Computing provides a series of units and resources that can be used to support this. • People who help us • Busy bodies • Super Space • Springtime • Summer Fun • Awesome Autumn • Boat Ahoy • Prompt Card to help embed Computing and thinking into other activities. Click here to access - https://www.barefootcomputing.org/earlyyears	**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,	**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	**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 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 Suggested Extended Abstract/Greater Depth Task: Debate whether you should always click on the	**Computer Systems and Networks – Communication** To explain the importance of internet addresses To recognise how data is transferred across the internet To explain how sharing information online can help people to work together To evaluate different ways of working together online To recognise how we communicate using technology To evaluate different methods of online communication Suggested Extended Abstract/Greater Depth Task: Debate whether you should

			what would the impact of this be?		website had been hacked, how could you check the information on it is true?	top result on a search engine.	always click on the top result on a search engine.
		Software	**Software**	**Software**	**Software**	**Software**	**Software**
		Busythings – Paintz.app	**Unplugged**	**Unplugged / Paintz.net**	**Various Websites**	**Various websites**	**Microsoft Powerpoint**
Autumn 2	**Concepts & Approaches:** **Creating, Pattern, Logic, Algorithms, Decomposition, Collaborating** Three Autumn themed activities which see the children explore patterns in Garlands Galore, create a leaf labyrinth and make Pumpkin Soup using computational thinking skills.	**Digital Painting** To describe what different freehand tools do 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	**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?	**Stop Frame Animation** 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.	**We are researchers** To understand how a search engine works. To be able to explore how a web crawler indexes the web To understand how to make a simple web search using keywords. To use a search engine to find information To understand what Creative Commons means. Suggested Extended Abstract/Greater Depth Task: Create an internet safety presentation to deliver to younger year groups.	**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 Suggested Extended Abstract/Greater Depth Task: Create a picture using multiple objects that have been grouped together	**3D Modelling** To recognise that you can work in three dimensions on a computer To identify that digital 3D objects can be modified To recognise that objects can be combined in a 3D model To create a 3D model for a given purpose To plan my own 3D model To create my own digital 3D model
		Software	**Software**	**Software**	**Software**	**Software**	**Software**
		Paintz.app	**iPads / Pixlr**	**iPads / iMotion**	**Google Slides**	**Microsoft Publisher**	**Tinkercad**

Spring 1	**Concepts & Approaches:** Algorithms, Decomposition, Debugging, Logic, Patterns, Abstraction Provides four activities that help children discover how bodies move and grow. Using the resources provided they explore and learn about parts of the body, growth and movement. Simple algorithms are created and adapted to form a routine of movements.	**Programming A** **Moving a robot** 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 A** **Robot algorithms** 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)	**Programming A:** **Sequencing Sounds** 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	**Programming A:** **Repetition in Shapes** To identify that accuracy in programming is important 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	**Programming A:** **Selection in Physical Computing** 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 explain that a loop can be used to repeatedly check whether a condition has been met To design a physical project that includes selection To create a program that controls a physical computing project Suggested Extended Abstract/Greater Depth Task: Design a physical project which includes selection	**Programming A:** **Variables in 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: Design a multi-level game
		Software	**Software**	**Software**	**Software**	**Software**	**Software**
		Beebot	**Beebot / Bluebot app**	**Scratch**	**J2E – J2Logo**	**Crumble Kit**	**Scratch**
Spring 2	Concepts & Approaches: **Abstraction, Tinkering, Creating, Collaborating, Algorithms, Persevering, Decomposition** Three Spring themed activities see the children make a Rabbit run, create Junk scarecrows and explore sequencing whilst planting seeds.	**Data and Information:** **Grouping Data** To label objects To identify that objects can be counted To describe objects in different ways	**Data and Information:** **Pictograms** (linked to Science living things and their habitats) To recognise that we can count and compare objects using tally charts	**Data and Information:** **Branching Databases** To create questions with yes/no answers To create a branching database	**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	**Data and Information:** **Flat-file Databases** To use a form to record information To compare paper and computer-based databases	**Data and Information:** **Spreadsheets** To identify questions which can be answered using data To explain that objects can be described using data

		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	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 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 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	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	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 /Activities	**Software / Activities**	**Software / Activities**	**Software / Activities**	**Software / Activities**	**Software / Activities**
		Unplugged	**J2E – J2Data**	**J2E / J2Data**	**Micro:bit / Makecode**	**J2E – J2Data**	**Microsoft Excel**
Summer 1	Concepts and Approaches: **Algorithms, Collaboration, Persevering, Creating, Pattern, Logical reasoning, Tinkering, Abstraction** Includes 3 space themed activities to develop pupils computational thinking and problem solving skills. Include creating algorithms to direct a rocket through space and spotting patterns in pictures of aliens.	**Creating Media: 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 To compare writing on a computer with writing on paper	**Presenting Information** To use a keyboard To use a word processor To add images and text to a presentation To plan a presentation To present information Suggested Extended Abstract/Greater Depth Task: Make a presentation to present to groups of	**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	**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	**Creating Media: Video Production** 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	**Programming B:** Sensing Movement 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 an conditional statement to compare a variable to a value

		Suggested Extended Abstract/Greater Depth Task: Create multiple phrases which show changes to text	learners from the previous year group.	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	To evaluate how changes can improve an image Suggested Extended Abstract/Greater Depth Task: Debate the risks and benefits of photoshopping images or not	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	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
		Software	**Software**	**Software**	**Software**	**Software**	**Software**
		J2E / Microsoft Word / Publisher	**Microsoft Word / Powerpoint**	**Microsoft Publisher**	**Paint.net / Pixlr**	**iMovie**	**Micro:bit / Makecode**
Summer 2	**Concepts & Approaches:** Tinkering, Persevering, Patterns, Logic, Decomposition, Debugging, Collaborating, Algorithms Children explore their surroundings and get creative, take a journey and make a map, and discover seaside tangrams, in these three fun activities.	**Programming B: Programming Animations** 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 B: Quizzes** 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	**Programming B: Events and Actions in Programs** 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 To design and create a maze-based challenge	**Programming B: 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	**Programming B: Selection in Quizzes** To explain how selection is used in computer programs 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 that uses selection To create a program that uses selection To evaluate my program	**AI Adventures** Know that Ai uses information to help it make decisions Identify current everyday uses of AI Explain how a machine learning system works Explain how machine learning could be used to solve a problem Describe some positive and negative aspects of using digital assistants Consider how AI could be used in the classroom

					Suggested Extended Abstract/Greater Depth Task: Design a program which adds in a score variable to calculate how many sprites have been clicked on		
		Software	**Software**	**Software**	**Software**	**Software**	
		Scratch Jr	**Scratch Jr**	**Scratch**	**Scratch**	**Scratch**	