Lapford Primary School- Computing Overview

	Problem solving	Programming	Logical thinking	e-safety	Creating content	Searching
Year 1 and Year 2	Understand algorithms as sequences of instructions in everyday contexts. Plan a sequence of steps to solve real world problems. Understand algorithms as sequences of instructions or sets of rules in everyday contexts. Program on screen using sequences of instructions to implement an algorithm.	Program a digital device (eg. BeeBot) using sequences of instructions to implement an algorithm. Create a program on screen correcting any errors (e.g. using Scratch).	Make predictions about what a program will do. Give explanations for what they think a program will do.	Keep safe while using digital technology. Understand that information on the internet can be seen by others. Understand what to do if they see disturbing content online. Keep safe and show respect to others when using digital technology. Understand that they should not share personal information online. Understand where to go for support if they have concerns about content or contact on the internet or other online technologies.	Use digital technology to store and retrieve content. Create original content using digital technology. Store, organise and retrieve content on digital devices for a given purpose. Create and edit original content for a given purpose using digital technology.	Understand algorithms as sequences of instructions in everyday contexts. Plan a sequence of steps to solve real world problems.

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Year 3, Year 4 and Year 5	Design, write and debug programs that accomplish specific goals. Explore simulations of physical systems on screen. Plan a project. Design and write a program using a bloc language to a given brief, including simple interaction. (Eg. Use Scratch to create and simple game or a set of questions and responses) Develop their own simulation of a simple physical system on screen. Work with others to plan a project. Design, write and debug a program using a block language based on their own ideas. Use simple computer control and/or sensors with products they make in design and technology.	Use sequence in programs. Write a program to produce an output. Use sequence and repetition in programs. Work with various forms of input and output. (eg. Write a program that accepts keyboard input and produces on-screen output. Use sequence, selection and repetition in programs. Work with various forms of input and output. (eg write a program that accepts keyboard and mouse input and produces output on screen and through speakers.	Explain a simple, sequence- based algorithm in their own words. Use logical reasoning to detect and correct errors in programs. Understand that computer networks (including the internet) transmit information in a digital (binary) format. Understand that networks (such as the internet) can provide multiple services, such as video conferencing or email. Explain an algorithm using sequence and repetition in their own words. Use logical reasoning to detect and correct errors in algorithms and programs. Understand that the internet transmits information as packets of data. Understand how the internet makes the web possible: Explain how requests for web pages,	Use digital technology safely and show respect for others when working online. Recognise acceptable/unacceptable behaviour. Know a range of ways to report concerns and inappropriate behaviour. Be discerning in evaluating digital content (eg. decide whether a webpage is relevant for a given purpose or question). Use technology safely, respectfully and responsibly including when creating their own programs (eg. Selecting appropriate content and observing copyright.) Understand the difference between acceptable and unacceptable behaviours when using digital technology in a range of contexts. Know a range of ways to	Use a range of programs on a computer. Design and create content on a computer. Collect and present information on a computer. Use and combine a range of programs on a computer. Design and create programs on a computer in response to a given goal. Collect and present data on a computer. Use and combine a range of programs on multiple devices. Design and create programs on a computer in response to a given goal. Analyse and evaluate information found on a computer.	Search for information within a single site. Understand that search engines select pages according to keywords found in the content. Use a search engine effectively. Understand that search engines rank pages according to relevance. Use filters to make more effective use of a standard search engine. Understand that search engines use a cached copy of the crawled web to select and rank results.

	Plan a solution to a problem using decomposition.		and the HTML for those pages, are transmitted via the internet. Explain a rule-based algorithm in their own words. Use logical reasoning to detect errors in algorithms. Understand how data packets are routed from one computer to another on a separate network, which is also connected to the internet. Explain how HTML is used to create a web page and how it is transmitted as packets of digital data over the internet	report concerns and inappropriate behaviour. Be discerning in evaluating digital content (eg. decide whether digital content is relevant for a given purpose or question). Understand the opportunities networks offer for communication and collaboration (eg. work collaboratively with their peers on a shared project, such as a class wiki, making useful contributions and providing feedback to others). Understand the importance of encrypted (HTTPS) connections when browsing the web and of using strong passwords to protect their identity online. Act responsibly when creating, editing or commenting on web pages or blog posts. Discuss the likely or possible consequences of particular behaviours when using digital technology in a range of contexts.		

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				Know how to report concerns and inappropriate behaviour in a range of contexts. Discern whether digital content is reliable and unbiased. Understand the opportunities networks offer for communication and collaboration (eg. Work collaboratively with classmates on a class website or blog).		
	Problem solving	**Programming**	**Logical thinking**	**e-safety**	**Creating content**	**Searching**
Year 6	Design, write and debug a program using a second programming language (other than scratch) based on their own ideas. Design, write and debug their own computer control for a product made in design and technology or for a smart phone app. Solve problems using decomposition, tackling each part separately.	Use sequence, selection, repetition and variables in programs. Write a program that accepts inputs other than keyboard and mouse and produces outputs other than screen or speakers. (eg. create a smartphone app, using the touch screen and the GPS sensor or accelerometer for input, and the screen and speakers or headphones plus vibration motor or network connection for output.)	Give clear and precise logical explanations of a number of algorithms. Use logical reasoning to detect and correct errors in algorithms (and programs). Understand how mobile phone or other networks operate. Understand how domain names are converted into IP addresses on the internet.	Discuss likely and potential consequences of their actions when using digital technology in a range of contexts. Identify principles underpinning acceptable use of digital technologies. Know a range of ways to report concerns and inappropriate behaviour in a variety of contexts. Evaluate the effectiveness of digital content taking into account the intended audience and purpose of the content. Understand the opportunities networks offer for communication and collaboration (eg. use	Select, use and combine a range of programs on multiple devices. Design and create systems in response to a given goal. Analyse and evaluate data using a computer (e.g. using a spreadsheet).	Make use of a range of search engines appropriate to finding information that is required (e.g. Google or AppStore). Appreciate that search engines rank pages based on the number and quality of in-bound links *(*e.g. In developing their website recognise how its search rank can be improved by having links to it from other high-ranking websites).

				online tools to plan and carry out a collaborative project such as designing an app).		