Computing and Online Safety Curriculum Progression

3 to 4 years	4 to 5 years	ELG
Personal, Social and Emotional Development Remember rules without needing an adult to remind them. Physical Development Match their developing physical skills to tasks and activities in the setting. Understanding the World Explore how thingswork.	Personal, Social and Emotional Development Show resilience and perseverance in the face of a challenge. Know and talk about the different factors that support their overall health andwellbeing: sensible amounts of 'screen time'. Physical Development Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Expressive Art and Design Explore, use and refine a variety of artistic effects to express their ideas and feelings.	Personal, Social and Emotional Development Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. Explain the reasons for rules, know right from wrong and try to behave accordingly. Expressive Arts and Design Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

Online Safety	Autumn	Spring	Summer
	KS1		
Y1 **Computer responsibility** **Identify rules to keep us safe and healthy when we are using technology in and beyond the home** **Discuss how we benefit from rules give examples of some of these rules**	<u>Technology around us (5,6)</u> 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	<u>Moving a robot</u> <u>mTiny devices (1,2,3)</u> 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 To find more than one solution to a problem	<u>Digital Painting (4,5)</u> 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
Y2 **Demonstrating safe use of IT** **Using IT responsibly** list different uses of information technology recognise how to use information technology responsibly say how those rules/guides can help me" enjoy a variety of activities explain simple guidance for using information technology in different environments and settings identify the choices that I make when using information technology	<u>Digital writing (4,5,6)</u> 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	<u>Robot Algorithms</u> <u>E.a.R.L. and Beebot (1,2,3)</u> 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	<u>Digital photography (4,5,6)</u> 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

KS1

Pupils should be taught to:

1. understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions
2. create and debug simple programs
3. use logical reasoning to predict the behaviour of simple programs
4. use technology purposefully to create, organise, store, manipulate and retrieve digital content
5. recognise common uses of information technology beyond school
6. use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologie

KS2

Y3 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	<u>Connecting Computers 4,7</u> 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	<u>Robot Algorithms* 1,2,3,6</u> <u>E.a.R.L. devices programing with Scratch</u> To explain how an external device moves in an existing project To create a program to move an external device 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 program to move a device through a maze-based challenge	<u>Desktop Publishing 5, 6</u> 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	
Y4 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact explain that not everything on the World Wide Web is true explain why some information I find online may not be honest, accurate, or legal explain why I need to think carefully before I share or re-share content	<u>The Internet 4,7</u> 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	<u>Controlling Robots 1,2,3</u> <u>Ozobots*</u> To understand how robots are used in industry and commercial operations To develop coding for robots to follow To use a range of coding formats to program devices To design a physical route / program for robots to follow To debug and evaluate programs and routes according to design brief	<u>Photo Editing 5, 6</u> 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	
Y5 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact Decide when I should and should not share Communication on the internet may not be private	<u>Physical Computing 1,2,3,6</u> <u>Ozobots*</u> To control a simple circuit connected to a computer To adapt a program to a new context To develop my program by adding features To identify and fix bugs in a program To conclude 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 controllable system that includes selection	<u>Video Editing 5, 6</u> 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	<u>Communication 4, 5,7</u> 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	
Y6 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact Decide when I should and should not share Explain that communication on the internet may not be private Be aware of copyright issues and know that not all resources they find on the Internet are legal to use or copy	<u>Web Page Creation 4, 5,7</u> 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	<u>Physical Computing</u> <u>Drones* 1,2,3, 6</u> To create a program to run on a controllable device To adapt a program to a new context To develop a program by adding features To create variables and loops in a program To identify and fix bugs in a program To solve real world problems on a simulated scale Accomplish challenging goals using programing to control physical devices	<u>Spreadsheets 5, 6</u> To identify questions which can be answered using data 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	<u>Sensing - Kinex* 1,2,3,6</u> 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

*select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals (uses in the real world). Design, write and debug programs that accomplish specific goals, including controlling physical systems

KS2

Pupils should be taught to:

1. design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
2. use sequence, selection, and repetition in programs; work with variables and various forms of input and output
3. use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
4. understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration
5. use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
6. select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
7. use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact