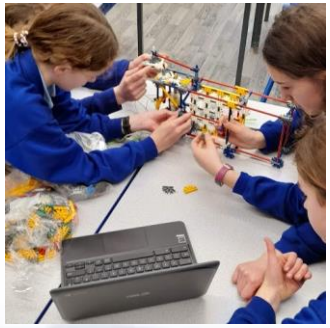
Computing Curriculum Progression

securly

vitalize
Leading Light



COMPUTING						
0-11 months	**8-20 months**	**16-26 months**	**22-36 months**	**30-50 months**	**40-60 months/ELG**	**Key Vocabulary**
Engages in age appropriate toys.	Beginning to explore and make sense of familiar objects.	Shows an interest in toys with buttons, flaps and simple mechanisms and beginning to learn to operate them. Anticipates repeated sounds, sights and actions e.g. when an adult demonstrates an action toy several times.	Seeks to acquire basic skills in turning on and operating some ICT equipment. Operates mechanical toys e.g. Turns the knob on wind-up toys or pull back on a friction car.	Shows an interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phones. Knows that information can be retrieved from computers. Shows skills in making toys work by pressing parts or lifting flaps to anticipate movements. Knows how to operate simple equipment e.g. CD player and remote control.	Completes a simple programme on a computer. Uses ICT hardware to interact with age-appropriate computer software. Children recognise that a range of technology is used in places such as homes and schools. They select technology for particular purposes. Knows that information can be retrieved from books and computers.	Toy, programme, computer, iPad, Laptop, camera, microphone, torch, press, on, off. Finding out and exploring Being confident and willing to have a go Developing ideas of grouping, sequences cause and effect

Online Safety	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
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</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>Digital Painting</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	<u>Moving a robot</u> <u>mTiny devices</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 writing</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>Grouping data</u> 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 To use my algorithm to create a program
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>IT around us</u> 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	<u>Digital photography</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	<u>Robot Algorithms</u> <u>E.a.R.L. devices</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>Pictograms</u> 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	<u>Making music</u> To say how music can make us feel To identify that there are patterns in music To describe how music can be used in different ways To show how music is made from a series of notes To create music for a purpose To review and refine our computer work

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</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>Sequencing Music</u> To explore a new programming environment I can 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	<u>Robot Algorithms*</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</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	<u>Stop Frame Animation</u> 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
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</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>Audio Editing</u> To identify that sound can be digitally recorded: To use a digital device to record sound: To explain that a digital recording is stored as a file: To explain that audio can be changed through editing: To show that different types of audio can be combined and played together: To evaluate editing choices made:	<u>Controlling Robots</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</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	<u>Repeat Commands</u> 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
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>Sharing Information</u> To explain that computers can be connected together to form systems (Gsuite) 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	<u>Physical Computing</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</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>Databases / Spreadsheet</u> To use a form to record information To compare paper and computer-based databases To outline how grouping and then sorting data allows us to answer questions To explain that tools can be used to select specific data To explain that computer programs can be used to compare data visually To apply my knowledge of a database to ask and answer real-world questions	<u>Communication</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	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	Game creation 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	Physical Computing Drones* 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 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	Spreadsheets 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	Sensing Kinex* 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

*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