"Bringing out the best in everyone"

"Everyone matters; everyone is important"

COMPUTING

A computer scientist is someone who is creative, explorer, collaborative and a problem solver.

EYFS including nursery	Year 1	Year 2	Year 3 (KS2)
Computer science			
	NC: understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions		NC:use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
KNOWLEDGE			
Knows how to turn on an electronic device and navigate touch capable technology with support.	Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. Use logical reasoning to predict the behaviour of simple programs.		Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors

			in algorithms and programs
KNOWLEDGE			
Give commands/instructions e.g. forward, backwards, go, stop, when using simple software/hardware Make choices about the buttons/icons to press, touch or click on when using simple software/hardware.	An algorithm is a sequence of steps, instructions or rules that is used to perform a specific task. Algorithms can be followed by people or digital equipment. For algorithms to achieve the end goal, instructions have to be accurate and followed sequentially. Mistakes are called bugs and finding and fixing them is called debugging.	Computers' behaviour can be predicted and the outcome tested by following the steps of an algorithm and recognising that the computer will follow instructions precisely. Robots can be programmed to follow a series of instructions, using an algorithm.	Several pieces of hardware can be used together to complete one task, such as using a camera to take a photograph, uploading it to a computer and then printing it using a printer. Sequencing instructions is the step-by-step process that robots or other devices follow to achieve specific outcomes. This can be a single algorithm or series of algorithms called a program.
SKILLS			
Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or images.	Follow a sequence of steps to solve a problem and create instructions that others can follow. Observe and explore outcomes when buttons are **pressed in sequences** on a robot and identify and debug a simple algorithm.	Plan and enter a sequence of instructions using a robot, specifying **distance and angle of turn**. Create a simple solution that tests **an idea,** predict the outcome and test that the intended solution works.	Plan and enter a sequence of instructions using a robot or other device to achieve **specific outcomes**. Use familiar computer hardware to successfully complete a task.

VOCABULARY			
Push, pull, lift, camera, button, flap, twist, turn, Technology, control, click, google, internet,	Algorithm, program, predict, technology, code, e-safety	Debug, code, import, password protected, software, hardware, email	Sequence, bug, binary, database, virus
COVERAGE			
Investigation area **imakeAlgorithms FS.26**	iAlgorithm iprogram (unit 1)	Iprogram (unit 1)	Iprogram
DEBUGGING COMPUTER SCIENCE			
	NC: Create and debug simple programs		Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.
KNOWLEDGE			
	An algorithm is a sequence of steps, instructions or rules that is used to perform a specific task. Algorithms can be followed by people or digital equipment. For algorithms to achieve the end goal, instructions have to be accurate and followed sequentially. Mistakes are called bugs and finding and fixing them is called debugging.		Computers' behaviour can be predicted, and the outcome tested by following the steps of an algorithm and recognising that the computer will

			follow instructions precisely.
SKILLS			
Complete a simple algorithm following a small **sequence** of steps.	Follow a sequence of steps to **solve a problem** and create instructions that others can follow. Observe and explore outcomes when buttons are pressed in sequences on a robot and identify and **debug a simple algorithm.**	**Create a simple solution** that tests an idea, predict the outcome and test that the intended solution works.	Plan and enter a sequence of instructions using a robot or other device to **achieve specific outcomes and debug them.**
COVERAGE			
Ican program icatchAliens	Iprogram (unit 2)	Iprogram (unit 2)	Ido we do Iprogram (unit 3)
RESEARCH			
Knows information can be retrieved from digital devices and the internet.	NC: Use technology purposefully to create, organise, store, manipulate and retrieve digital content.		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.
KNOWLEDGE			
	Software is the programs that are used by a computer, such as word processing software, presentation software or image editing software. It can be used to create and combine digital content for different audiences and purposes.	Software is available that can be used to represent collected data digitally, such as in a pictogram or bar chart. Each type of software, such as word processing, presentation and image editing, can be used for different purposes, including	Several pieces of software can be used together to complete one task, such as adding a video to a word processed document.

	Hardware is the parts of a computer that you can touch, such as a mouse, tablet or floor robot. To search for digital content, the user needs to know the file name, file type and folder name or keywords and search terms to find the correct information. Digital technology is used in all parts of everyday life, such as on a tablet to play a game or using a microwave to heat food. Some of this digital technology can be used to connect with others locally, such as sharing digital work in the classroom, or globally, such as using Skype on a computer to speak to a friend overseas.	writing reports and creating slide shows or posters. Hardware, such as cameras, scanners and data loggers, can be used to collect data. Multimedia components, such as text, images, audio and video clips, can be created, edited and combined to create content for a range of tasks. A device is online if it is connected to the internet or a network and can communicate with other devices. A device is offline if it is not connected to the internet or network and cannot connect to other devices. Computers and devices can be linked in different ways, such as through a network, the internet and Bluetooth. This allows the sharing of resources.	Some programs or apps have special types of technology, such as a built in camera or microphone, or sensors that measure light level, temperature or sound level. Text, images, animation, audio and video clips can be combined using tools within a piece of software or by using a range of software. For example, an image could be inserted into a word processing document or a video could be inserted into a presentation. Digital technology can be used for a range of purposes in different settings, such as using a tablet in the classroom to access educational material, in the home to access entertainment and in the community to share local news.
SKILLS			
Log in and navigate with support on an electronic device.	Select appropriate software to complete tasks using text, images, audio, videos.	Create and edit multimedia components for a range of tasks.	Combine a range of text, images, animation and audio and video clips for given purposes.

	Begin to use a range of software for different purposes. Use a range of computing hardware for **different purposes**. Search for or retrieve digital content, including images and information, in digital folders and, with supervision, online. Explain simply that digital technology can be used to connect with others locally and globally.	Use **different types of software** and identify their purpose. Use computing hardware in different ways to **collect data.** Recognise and demonstrate that some digital content can be found online and some offline. Use data handling skills to represent data digitally. Recognise that computers can be linked to share resources.	Use a **range of different software** to successfully complete a project. Use digital technology in different ways in the classroom, home and community. Log light level, temperature or sound level using a program or app.
COVERAGE			
Investigation area FS1 **icancontrol** **iorganise data**	**iData** **imodel** **iWrite**	**iSearch** **iPub** **iBlog** **iAnimate**	**iData** **iConnect** **iNetwork**
ONLINE SAFETY			
	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 technologies.		Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.
KNOWLEDGE			
	Private information includes name, address, date of birth or school and this information should not be shared online. Any concerns or worries should be reported to a trusted adult.	Digital technology, such as email, social media platforms or blogs, can be used by individuals to communicate and connect with others but should be used appropriately, including using language that is not hurtful or disrespectful to	Advantages of communicating electronically are that it is available at any time, instant and global. Disadvantages include

		others, having adult supervision or following the school's acceptable use policy. Some websites are not age-appropriate and so it is important to tell a trusted adult about any concerns or worries.	easier misunderstandings, lack of privacy (once something is published online, it cannot be removed) and a threat to personal safety (access to personal information). Concerns should be reported to a trusted adult. Images and data should not be shared online without the permission of the owner. Personal information, such as full name, age, school and address, should not be shared online. Different software, websites and apps can be used to collaborate and communicate online. Each one has different terms and conditions that need to be adhered to stay safe, such as age restrictions.
SKILLS			
	Recognise that some websites ask for private information and discuss how to handle these requests. Talk as a class about communication over the internet and what is it useful for locally e.g. text/email.	Use digital technology appropriately to communicate and connect with others locally and globally. Stay safe online by choosing websites that are appropriate to visit.	Use appropriate tools (software, websites and apps) to collaborate and communicate safely online. Describe simple rules for sharing images and data safely.

			Explain the advantages and disadvantages of communicating electronically and strategies for preventing issues.
COVERAGE			
Digi duck and Smartie the Penguin Internet safety Day i-compute unit – istay safe FS13 isearchonline FS10	Icompute-isafe	Icompute-isafe	Icompute-isafe
INFORMATION TECHNOLOGY			
	Recognise common uses of information technology beyond school		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. Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.
KNOWLEDGE			
Technology is used in many ways to do different jobs, such as using an interactive whiteboard in the classroom, using a tablet to do online shopping at	Digital technology is used in all parts of everyday life, such as on a tablet to play a game or using a microwave to heat food. Some of this digital technology can	The internet is used to connect computers or devices around the world.	When work is saved, it is stored on a storage device, such as the computer's hard drive, a

home or using scanners in a shop in the community.	be used to connect with others locally, such as sharing digital work in the classroom, or globally, such as using Skype on a computer to speak to a friend overseas. Software available online, such as email, social media platforms or blogs, can be made by individuals to communicate their ideas.	Digital technology is used in everyday life and can be used to support learning and connect with others.	USB flash drive, a shared server or online. This work can then be retrieved from another device (except if it is saved on the computer's hard drive). Different software, websites and apps can be used to collaborate and communicate online. Each one has different terms and conditions that need to be adhered to stay safe, such as age restrictions. The World Wide Web is a collection of web pages that are run via the internet. The information requested can be displayed as text, images or videos.
SKILLS			
	Explain simply that digital technology can be used to connect with others locally and globally. Understand that there are online tools that can help people to create and communicate. Recognise the ways digital technology can be used in the classroom, home and community.	Recognise some uses of the internet, in simple terms. Recognise why digital technology is used in the classroom, home and community.	Recognise that saved work can be retrieved from another device on the same network. Use appropriate tools (software, websites and apps) to collaborate and communicate safely online. Explain that the World Wide Web contains lots

			of web pages about different subjects that can be searched.
PROJECTS			
COVERAGE			
FS1 **FS2**	iSearchOnline	iDoMail	iNetwork
KEY TEXTS			
FS1 **FS2**			
VOCABULARY			
FS1 **FS2**			