

EYFS Aims

Despite computing not being explicitly mentioned in the Early Years Foundation Stage (EYFS) framework, there are many opportunities for young children to use technology to solve problems and produce creative outcomes. Through providing children the opportunity to engage in activities that are based around computer science, information technology, online safety and digital literacy, we are preparing them for the digital world in which they live and ensuring that they are fully prepared to transition into key stage 1.

ELG Content

Physical Development

Pupils should be given the opportunity to:

- Use their core muscle strength to achieve a good posture when sitting at a table
- Know and talk about the different factors that support their overall health and wellbeing: sensible amounts of 'screen time'
- Develop manipulation and control
- Use and remember sequences and patterns of movement

Understanding the World

Pupils should be given the opportunity to:

- Explore how things work
- Have an understanding that repeated actions have an effect

Autumn 1	Spring 1	Summer 1
<p>Online Safety and Digital Literacy</p> <ul style="list-style-type: none"> • Discuss plugs and electricity. • Water around technology. <p>Information Technology</p> <ul style="list-style-type: none"> • Turing on and off any device. • Mouse only skills. • 	<p>Online Safety and Digital Literacy</p> <ul style="list-style-type: none"> • Sharing images with strangers. <p>Information Technology</p> <ul style="list-style-type: none"> • Write name and log in to computer. • Taking pictures using a tablet. 	<p>Online Safety and Digital Literacy</p> <ul style="list-style-type: none"> • Keeping things safe introduce passwords. <p>Computer Science</p> <ul style="list-style-type: none"> • Introduce basic algorithms (instructions) E.g. Turning left and right. Putting things in order, Getting ready for bed.
Key Vocabulary	Key Vocabulary	Key Vocabulary
<p>N - Switch, on, off, plug, click, safe, charge R - Electricity, safe, mouse, left, right, charge</p>	<p>N - safe, stranger, private, picture, camera, tablet, press R - Online safety, log in, image, iPad, computer, keyboard, key, space, enter, mouse, click, number, password</p>	<p>N - Password, instructions, up, down, turn R - Algorithm, order, left, right, memory, sequence</p>
Suggested Texts	Suggested Texts	Suggested Texts
http://www.switchedonkids.org.uk/	https://www.childnet.com/resources/smartie-the-penguin	Twinkl - texts
Autumn 2	Spring 2	Summer 2
<p>Online Safety and Digital Literacy</p> <ul style="list-style-type: none"> • Respect of devices and accessories. <p>Information Technology</p> <ul style="list-style-type: none"> • Mouse and keyboard skills. • Write name. 	<p>Online Safety and Digital Literacy</p> <ul style="list-style-type: none"> • Who do you tell if you see something that scares you? • <p>Information Technology</p> <ul style="list-style-type: none"> • Create a picture/image based on topic on a computer/tablet. 	<p>Online Safety and Digital Literacy</p> <ul style="list-style-type: none"> • Find information online with support (as a class) <p>Computer Science</p> <ul style="list-style-type: none"> • Introduce Beebots (teacher led)

	<ul style="list-style-type: none"> Create a story board (beginning, middle and end) - with support. 	
Key Vocabulary	Key Vocabulary	Key Vocabulary
N - Tablet, computer, click, charge R - iPad, button, keyboard, key, space, enter, mouse, number, left, right, respect, charge	N - safe, app, choose, colour R - Online safety, paint, storyboard, shape, eraser, select	N - find, Google, go, stop, turn, up, down, instruction R - search, algorithm, left, right memory, order, sequence, clear, search, facts
Suggested Texts	Suggested Texts	Suggested Texts
Golden Rules Animal Stories - we look after property.	https://www.saferinternet.org.uk/	https://www.terrapiinlogo.com/emu/beebot.html

KS1 - Aims

The national curriculum for computing aims to ensure that all pupils:

- Can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- Can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- Can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- Are responsible, competent, confident and creative users of information and communication technology.

KS1 - Content

Pupils should be taught to:

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs
- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- recognise common uses of information technology beyond school
- 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.

Autumn 1	Spring 1	Summer 1
<p>Online Safety and Digital Literacy</p> <ul style="list-style-type: none"> Discuss devices are connected to the internet. <p>Information Technology</p> <ul style="list-style-type: none"> Log on to a computer. navigate around the screen with a mouse or touchpad. type text using space bar for separate words to create something meaningful. 	<p>Online Safety and Digital Literacy</p> <ul style="list-style-type: none"> Find information online with support (as a class) <p>Information Technology</p> <ul style="list-style-type: none"> independently find and use an app on a tablet for instance to take and view a video or photograph. add and create simple images. Save, retrieve and print work. 	<p>Online Safety and Digital Literacy</p> <ul style="list-style-type: none"> Know that they should tell a trusted adult if they are upset or worried about anything on a device. <p>Information Technology</p> <ul style="list-style-type: none"> Be able to combine simple text and graphics, for instance create a poster for a purpose Know how to type and format text including basic punctuation and capital letters.
Key Vocabulary	Key Vocabulary	Key Vocabulary
Internet, Computer, connected, drag, spacebar, key, enter, power, backspace, screen shot, key, power button, log on, shut down, mouse, programs.	Private, information, Search engine, app, save, print, monitor camera rotate edit filter, device, electronics, internet.	Image, textbox, keypad, log out, start, CTRL, number pad, right, click, file, save as.
Suggested Texts	Suggested Texts	Suggested Texts
Look Inside How Computers Work by Alex Frith (NF)	http://code-it.co.uk/csplanning.html https://swiggle.org.uk/	https://www.commonsemmedia.org/
Autumn 2	Spring 2	Summer 2
<p>Online Safety and Digital Literacy</p> <ul style="list-style-type: none"> Discuss who children can turn to if they have worries about technology. <p>Computer Science</p> <ul style="list-style-type: none"> Know which button on a device represents which action e.g. go on a Bee Bot Know how to program a robot to follow simple sequence of instructions Y1 - 3 parts Y2 - 6 parts Make a simple sequence of instructions (an algorithm) Be able to make simple predications about an algorithm and a program. Y1 - 3 parts Y2 - 6 parts (For example, The Bee Bot will go...) 	<p>Online Safety and Digital Literacy</p> <ul style="list-style-type: none"> Discuss devices that enable direct communication between people - images and text (phone, tablet, computer). Recognise common uses of information technology beyond school and common platforms (Facebook, Snapchat, Instagram, Email, Twitter, SMS). <p>Computer Science</p> <ul style="list-style-type: none"> Be able to change (debug) a program to improve the route Y1 - 3 parts Y2 - 6 parts Know how to program a robot to achieve set goal (sequence of instructions: Y1 - 3 parts Y2 - 6 parts in a maze, collect points, follow instructions) 	<p>Online Safety and Digital Literacy</p> <ul style="list-style-type: none"> With support, be able to use a safe search engine (e.g. swiggle) on a Chromebook to search for a desired outcome. <p>Computer Science</p> <ul style="list-style-type: none"> Begin to use block programming e.g. Scratch Junior (Alex, Daisy Dino) to complete a simple program. Y1 - parts Y2 - 6 parts Be able to debug more complex problems e.g. a route on a Bee Bot / Blue Bot / Alex / Logo etc... maze. Y1 - 3 parts Y2 - 6 parts
Key Vocabulary	Key Vocabulary	Key Vocabulary
Algorithm, instruction, prediction, program, command, switch, go, left, right, technology, bee bot.	Debug, sequence, chat, communication, improve, selection, function, scratch Jr, input, outcome, command.	Programming, search engine, www, scroll bar, tabs, pages, block coding, application (app), keyword link, sprite.
Suggested Texts	Suggested Texts	Suggested Texts
Oxford Reading Tree Read with Biff, Chip and Kipper First Chapter Books: The Enigma Plot https://www.terrapiologo.com/emu/beebot.html	http://code-it.co.uk/csplanning.html https://www.terrapiologo.com/emu/beebot.html	http://code-it.co.uk/csplanning.html https://www.terrapiologo.com/emu/beebot.html https://swiggle.org.uk/

KS2 - Aims

The national curriculum for computing aims to ensure that all pupils:

- Can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- Can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- Can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- Are responsible, competent, confident and creative users of information and communication technology.

KS2 - Content

Pupils should be taught to:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- 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
- 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
- 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
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Autumn 1	Spring 1	Summer 1
<p>Online Safety and Digital Literacy</p> <ul style="list-style-type: none"> • Create and use a simple password • Use a Search engine to find information given key words. <p>Information Technology</p> <ul style="list-style-type: none"> • Be able to log in to a Chromebook themselves and can find their documents (Google Drive) • Know how to open previously created documents and pictures • Know how to use features to create a simple brochure or poster (google slides or docs) • Create a meaningful document that contains both pictures and text • Be able to explain what a shared area is and find it on a computer. 	<p>Online Safety and Digital Literacy</p> <ul style="list-style-type: none"> • Know which websites are useful and begin to understand all might not be trustworthy. • Be able to log in and out of websites used at school (TTRS) <p>Information Technology</p> <ul style="list-style-type: none"> • Be able to save a document in a shared folder and retrieve this to continue working on it. On an iPad, work could be shared by Airdrop or equivalent. • Know how to change font size and style; include shapes and backgrounds and to use the Spellcheck function on google docs. • Know how to sequence and add to slides to make a simple presentation on google slides or iMovie on iPad. 	<p>Online Safety and Digital Literacy</p> <ul style="list-style-type: none"> • Know that having a balance of online and offline activities is important - create a paper-based poster or leaflet to promote this. • Creates and reliably uses a more complex password to access resources. <p>Information Technology</p> <ul style="list-style-type: none"> • To be able to use sequence to create an effective presentation or video in google slides or iMovie • Be able to deliver a simple presentation to their peers • Be able to organise their personal folder effectively for instance by organising work into folders for each year at school
Key Vocabulary	Key Vocabulary	Key Vocabulary
Password, shared, documents, folder, privacy, digital, security, font, resize, picture, format, cloud-based networks.	Share, username, word processor, online, URL, background, spell check, layout, shapes, insert, world wide web, text box, presentation, bold, italics,	CAPS Lock, browser, network, slideshow, full screen, slides, template, transition, animation, alignment, transition, animation, screen time.
Suggested Texts	Suggested Texts	Suggested Texts
https://www.freepik.com/free-vector/kids-playing-infographics_1538042.htm	Hacking for Kids (NF)	Technology Timelines: Digital Technology by Tom Jackson (NF)
Autumn 2	Spring 2	Summer 2
<p>Online Safety and Digital Literacy</p> <ul style="list-style-type: none"> • Discuss that some people are the internet should not be trusted. • Discuss concerns about what they see online and distinguish what should be reported to a trusted adult. <p>Computer Science</p> <ul style="list-style-type: none"> • Be able to use a block program (Scratch Jr, Scratch 3) to make a simple programme using sequencing and timing. • Inputs sets of instructions according to programming language and environment (Logo, Scratch Jr, Scratch 3). • Independently be able to debug basic mistakes. 	<p>Online Safety and Digital Literacy</p> <ul style="list-style-type: none"> • Know that pictures and text share on-line can end up with strangers. • Reliably know what to do if they are exposed to unpleasant materials on any device. <p>Computer Science</p> <ul style="list-style-type: none"> • Use repeat loops for instance to create a program to draw regular 2D shapes (Logo, Scratch) • Be able to explain how their program works by annotating a print out of their program. • Begin to use conditionals. For example, if I click here then this happens... (Scratch Jr, Scratch 3). 	<p>Online Safety and Digital Literacy</p> <ul style="list-style-type: none"> • Know what the key words are to enter into a search engine to find information they want. • Can select useful websites from the results of a search (Related to curriculum topics). <p>Computer Science</p> <ul style="list-style-type: none"> • Be able to modify their program and be able to predict the effects of any changes. • Know how to break sets of instructions into short steps to achieve goal. For instance, drawing repeated squares to make a pattern. • Be able to use a program to sequence, use conditionals and use a variety of inputs and outputs (Scratch- steer an object by using keys).
Key Vocabulary	Key Vocabulary	Key Vocabulary

Timing, page, link, hardware, usb, Bluetooth, output, input, LED, Variable.	Loop, repeat, conditionals, scam, phishing, if, events, sensing, motion, costumes, sprites, backdrop.	Keyword, outcome, interface, script, control, loop, pen down, pen up, variables, x and y values, decomposing, modify, search engines, key word, rankings of searches.
Suggested Texts	Suggested Texts	Suggested Texts
Technology Scribble Book by Alice James, Tom Mumbray (NF)	http://code-it.co.uk/csplanning.html https://hourofcode.com/uk	The Little Inventors Handbook A Guide to Becoming an Ingenious Inventor - Dominic Wilcox (NF) http://code-it.co.uk/csplanning.html https://hourofcode.com/uk

Autumn 1	Spring 1	Summer 1
<p>Online Safety and Digital Literacy</p> <ul style="list-style-type: none"> Discuss how to reduce the risks posed by using Social Media by managing their friends lists and privacy settings. Be able to maintain a healthy balance of online and offline activities and know that some activities may affect their emotional wellbeing. <p>Information Technology</p> <ul style="list-style-type: none"> To be able to share their work from their personal folder to work collaboratively with others. Know how to use software to create and effective poster or leaflet. Be able to select the best program for the task. Independently, prepare an effective presentation to show their learning to others which includes some elements of timing or sequence. For instance, in Google Slides or iMovie. 	<p>Online Safety and Digital Literacy</p> <ul style="list-style-type: none"> Discuss the risks posed to them by using Social Media, including understanding that people may not be who they say they are. Discuss that it is irresponsible to share images of friends on-line without their permission. <p>Information Technology</p> <ul style="list-style-type: none"> Using software know how to add data into a prepared spreadsheet to answer simple questions. For instance, using Google Sheets. Know how to create a simple formula in a spreadsheet to work out given mathematical tasks such as adding a set of numbers (link to Maths LTP). 	<p>Online Safety and Digital Literacy</p> <ul style="list-style-type: none"> Discuss how to validate information found through searches by checking more than one source. Discuss that some news is 'fake.' Discuss that a balance of online and offline activities is important to maintain good health. <p>Information Technology</p> <ul style="list-style-type: none"> Know how to use the main features of google software to produce suitable documents and presentations for an audience. To create and sequence a video, add sound effects, transitions and title/subtitles. To be able to use two or more programmes to create a final piece of work. (For example, edit a picture before inserting into a document). Know how to edit a picture. For instance, in Paint.net
Key Vocabulary	Key Vocabulary	Key Vocabulary
Social media, cyber security, toolbar, whatsapp age restriction, software, personal information, chatrooms, direct and private messages, emails	Spreadsheet, cell, data, equation, formula, column, row, sum, average.	Hacking, pop-up format, title, subtitle, audience, subtitle, trim, crop, overlay, thesaurus, cut, past, copy, timings, resize, effects, crop, theme, bullet point, subheading, table, smart art, hyperlink, navigate.
Suggested Texts	Suggested Texts	Suggested Texts
	https://www.bbc.co.uk/bitesize/topics/zf2f9j6/articles/z8yk87h	
Autumn 2	Spring 2	Summer 2
<p>Online Safety and Digital Literacy</p> <ul style="list-style-type: none"> Discuss how to report concerns online. Effectively use a search engine to find multiple criteria using and/or to refine searches <p>Computer Science</p> <ul style="list-style-type: none"> Use customisation to change a working program to change its effect (For example, backgrounds and sprite in scratch). Uses loops to achieve goals (Scratch - shapes, letters), Use conditional sentences (when/then) to program objects (Kodu, Scratch, Microbit) 	<p>Online Safety and Digital Literacy</p> <ul style="list-style-type: none"> Discuss how to compare information from different websites and know that some sites may show bias. Know that it is illegal to post or view 'rude' images of children. <p>Computer Science</p> <ul style="list-style-type: none"> Be able to explain what a program will do and accurately predict the effect of changes. Be able to reliably modify existing algorithms and code to change the effect of the program. Use conditional sentences using mathematical expressions when constructing conditionals e.g. trigger winning when (If loops >5 then...) 	<p>Online Safety and Digital Literacy</p> <ul style="list-style-type: none"> Discuss that hacking or misusing someone else's account is illegal. Discuss that search results can be manipulated by sponsorship and advertising. <p>Computer Science</p> <ul style="list-style-type: none"> Uses variables, conditional sentences (when/then), external triggers and loops to achieve set goals. For example, when creating a game in Scratch, an interactive slide in Google Slides, creating a game in Kodu with a scoring system or when creating an electronic die with a Microbit.

		<ul style="list-style-type: none"> Be able to make an efficient program by using an effective algorithm and techniques such as loops and procedures.
Key Vocabulary	Key Vocabulary	Key Vocabulary
Domain, junk mail, refine, browser, advertisements, sponsored, x and y, positional rotation	Illegal, copyright, criminal activity, procedure, expression modify, simplify, mathematical conditionals, conditional, illegal/sensitive data.	System, interactive, hyperlink, cookies, manipulated, electronic, scoring, x and y values, decomposing, Microbits, variable, modify, bias, sponsorship, advertisements, validity, fake news. Python language.
Suggested Texts	Suggested Texts	Suggested Texts
http://code-it.co.uk/csplanning.html https://scratch.mit.edu/projects/31876/ https://www.barefootcomputing.org/	http://code-it.co.uk/csplanning.htm https://scratch.mit.edu/projects/31876/ https://hourofcode.com/uk https://www.barefootcomputing.org/	http://code-it.co.uk/csplanning.html https://scratch.mit.edu/projects/31876/ https://www.barefootcomputing.org/ https://microbit.org/code/

Additional resources can be found at: <https://teachcomputing.org/curriculum>