

Computing knowledge progression

Digital Literacy	ELG PSED: <ul style="list-style-type: none"> Explain the reasons for rules, know right from wrong and try to behave accordingly. 		KS1 PoS Pupils should be taught to: <ul style="list-style-type: none"> 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. Recognise common uses of information technology beyond school. 		KS2 PoS Pupils should be taught to: <ul style="list-style-type: none"> 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 technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact; be discerning in evaluating digital content 				
	E-Safety	EYFS – Nursery	EYFS - Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes
	<ul style="list-style-type: none"> To remember rules without an adult needing to remind them 	<ul style="list-style-type: none"> To talk about factors which support their overall health. One of these being 'sensible amounts of screen time'. 	<ul style="list-style-type: none"> The pupil can keep themselves safe while using digital technology. The pupil can understand that they need to keep safe when using digital technology. E.g. They should know to use filtered Safe Search when looking for images on the web and that they should close the lid of a laptop (or turn over a tablet) and alert an adult if they come across unsuitable content (1.2, 1.3, 1.4, 1.6) The pupil can understand that information on the Internet can be seen by others (1.2, 1.3, 1.4, 1.6). The pupil should be aware that information stored on the web or transmitted via the Internet is available to other people. E.g. They should know that the images they find online can be found by others too, and that the queries they type in can be seen by those who run the search engine they use and the school's network (1.2, 1.3, 1.4, 1.6). The pupil can understand what to do if they see 	<ul style="list-style-type: none"> The pupil can keep safe and show respect to others while using digital technology (2.2, 2.4). The pupil should know that they need to keep themselves safe when using digital technology. E.g. They should know to use filtered SafeSearch when looking for images on the web and that they should close the lid of a laptop (or similar action) if they find inappropriate images (2.2, 2.3, 2.6). They should know to respect others' rights, including privacy and intellectual property when using computers, so should not look at someone else's work or copy it without permission and acknowledgement (2.2, 2.4). They should observe age restrictions on computer games (2.2, 2.3). The pupil can understand that they should not share personal information online (2.2, 2.6). The pupil should understand that personal information should 	<ul style="list-style-type: none"> The pupil can use digital technology safely and show respect for others when working online. The pupil should know that they need to keep themselves safe when using digital technology. For example, they should show respect for others when filming and should not normally post videos online. If responding to online surveys, they should do so anonymously, thinking carefully about information they give out. The pupil can recognise unacceptable behaviour when using digital technology. The pupil can identify what would be unacceptable or inappropriate behaviour when using digital technology in a range of contexts. For example, they should know what would be unacceptable when using online communities, such as the Scratch website, or when shooting or publishing video. They should know what would be unacceptable use of the Command prompt, email or online survey tools. Know who to talk to about concerns and inappropriate behaviour in school. Pupils should know to report inappropriate behaviour when using technology in school to their teacher, the network manager or another trusted adult, and that they can discuss any concerns they have with their 	<ul style="list-style-type: none"> The pupil can demonstrate that they can act responsibly when using computers. The pupil can act responsibly when using computers. For example, they should act responsibly when developing computer games or prototype products. They should behave responsibly when using sampled music or creating a composition. They should show responsibility when creating or remixing online content, including observing copyright and any terms and conditions. They should contribute positively to a shared wiki. The pupil can understand the difference between acceptable and unacceptable behaviours when using digital technology. The pupil can discuss the difference between acceptable and unacceptable behaviours when using digital technology in a range of contexts. Contexts could include the Scratch website, or other online communities; the use of others' original content, such as music samples or web pages; wikis, including Wikipedia. Know who to talk to about concerns and inappropriate 	<ul style="list-style-type: none"> The pupil can demonstrate that they can act responsibly when using the Internet. The pupil can act responsibly when using the Internet. For example, they should act responsibly when participating in an online community, such as the Scratch community, if permitted to do so. They should demonstrate that they understand the importance of encrypted (HTTPS) connections when browsing the web and of using strong passwords to protect their identity online. They should act responsibly when creating, editing or commenting on web pages or blog posts. The pupil can discuss the consequences of particular behaviours when using digital technology. The pupil can discuss the likely or possible consequences of particular behaviours when using digital technology in a range of contexts. Contexts could include the Scratch website, or other online communities; using cryptography and passwords; creating websites or writing blog posts. Know how to report concerns and inappropriate behaviour in a range of contexts. Pupils should know how to report inappropriate behaviour when using technology in school: preferably this will be to their teacher, the network manager or another 	<ul style="list-style-type: none"> The pupil can show that they can think through the consequences of their actions when using digital technology. The pupil can discuss likely and potential consequences of their actions when using digital technology in a range of contexts. Contexts might include developing smartphone apps; using online project management tools; collecting information for market research; posting original content online. Know a range of ways to report concerns and inappropriate behaviour in a variety of contexts. Pupils should know how to report inappropriate behaviour when using technology in school: preferably this will be to their teacher, the network manager or another trusted adult. They should know how to report any concerns over, or inappropriate behaviour with, digital technology at home. Preferably this would be through discussion with their parents, with you or with another trusted adult. Pupils should also know how to report inappropriate behaviour to those running websites which they regularly use, and to Childline, CEOP or the police. Pupils should know that illegal content or activities 	

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		<p>disturbing content online at home or at school.</p> <ul style="list-style-type: none"> The pupil should know to close their laptop lid or turn their tablet over if they find content, such as inappropriate images, which might disturb them or other pupils. They should know to tell their teacher or their parents/carers if this happens (1.3, 1.4). The pupil can show an awareness of how IT is used for communication beyond school (1.6). The pupil can mention some of the ways in which IT is used to communicate beyond school. E.g. They might know that some people use social media such as Facebook, email, video calls or online greetings to say happy birthday to their friends (1.6). 	<p>be kept private: it should not be posted online to a public audience and should only be shared privately with those who they (or their parents) would trust. E.g. The pupil should recognise that photos they take in school should not normally be posted to the open web (2.2, 2.6).</p> <ul style="list-style-type: none"> They should know that photos taken with smartphones often contain hidden information about where the photo was taken (2.6). The pupil can understand what to do if they have concerns about content or contact online (2.4). 	<p>teacher or other trusted adults in school.</p> <ul style="list-style-type: none"> The pupil can decide whether a web page is relevant for a given purpose or question. The pupil can form a judgement about whether a web page is appropriate for finding out the answer to a question they have or for a given purpose. The pupil can use email and videoconferencing in class. 	<p>behaviour at home or in school.</p> <ul style="list-style-type: none"> Pupils should know to report inappropriate behaviour when using technology in school to their teacher, the network manager or another trusted adult, and that they can discuss any concerns they have with their teacher or other trusted adults in school. They should also know that any concerns over, or inappropriate behaviour with, digital technology at home can be discussed with their parents, with you or with another trusted adult. The pupil can decide whether digital content is relevant for a given purpose or question. The pupil can form a judgement about whether a web page, such as a Wikipedia article, or other digital content is appropriate for finding out the answer to a question they have or for a given purpose. The pupil can work collaboratively with classmates on a shared wiki. The pupil can work collaboratively with their peers on a shared project, such as a class wiki, making useful contributions and providing feedback to others. 	<p>trusted adult. They should know how to report any concerns over inappropriate behaviour with digital technology at home. Preferably this would be through discussion with their parents, with you or with another trusted adult. Pupils should also know how to report inappropriate behaviour to those running websites which they regularly use, and to Childline, CEOP or to the police.</p> <ul style="list-style-type: none"> The pupil can decide whether digital content is reliable and unbiased. The pupil can discuss whether particular content (such as a web page, other pupils' pages or blog posts) is reliable and whether it has been written from a neutral point of view. They should be able to spot some examples of bias in digital content. The pupil can work collaboratively with classmates on a class website or blog. The pupil can work productively and positively with others when developing a shared website or contributing to a class blog. 	<p>can be reported to CEOP or the police.</p> <ul style="list-style-type: none"> The pupil can form an opinion about the effectiveness of digital content. Considering the intended audience and purpose of the content, the pupil can form a judgement as to, and provide reasons for, the extent to which they consider digital content to be effective. The content might be media resources or marketing materials. The pupil can use online tools to plan and carry out a collaborative project. The pupil can make use of an online tool to plan and carry out a collaborative project.
Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge
<ul style="list-style-type: none"> To know to tell a teacher or parent before using technology so that adults can help to keep them safe online. 	<ul style="list-style-type: none"> To know to close the laptop lid or turn the tablet over and tell a teacher or their parents if they find something upsetting. 	<ul style="list-style-type: none"> Know that some personal information and images should be kept private, and understand what should not be posted online (1.2, 1.3, 1.4 and 1.6). Know to close their laptop lid or turn their tablet over and tell a teacher or their parents/carers if they find 	<ul style="list-style-type: none"> Know that photos can contain metadata revealing where they were taken (2.6). Know not to post images with metadata to the open web (2.6) Know that they should observe age restrictions when playing games out of school (2.2, 2.3) Know to ask before taking photos of 	<ul style="list-style-type: none"> Know to tell a teacher about any concerns or inappropriate behaviour in any units. Know that some websites are reliable sources of information and others are not. Know what is respectful when interacting with others online in order to keep themselves and others safe. 	<ul style="list-style-type: none"> know the difference between acceptable and unacceptable behaviour in the Scratch community (4.1 and 4.2) know the difference between acceptable and unacceptable web pages and remixes, recognising what constitutes parody or fair use (4.4) Know to tell a teacher about any concerns or inappropriate behaviour in any units. Know that concerns in relation to the 	<ul style="list-style-type: none"> Know to tell a teacher about any concerns or inappropriate behaviour in any units. Know that concerns in relation to the Scratch community can be reported to the community moderators (units 5.1 and 5.3). Know that concerns over illegal web content can be reported to the police. Know that they should talk to their parents about concerns and inappropriate behaviour 	<ul style="list-style-type: none"> Identify principles underpinning acceptable smartphone and tablet use. (6.1, 6.4 and 6.5) Identify principles underpinning acceptable use of online project management tools. (6.2) Identify principles underpinning acceptable use of surveys and recorded interviews. (6.3) Identify principles underpinning acceptable creation and sharing of digital content. (6.6)

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		<p>inappropriate images (1.3, 1.4)</p> <ul style="list-style-type: none"> Recognise online collaboration tools such as Google Forms and the Google Suite (1.6) 	<p>others and know what to do if they encounter inappropriate content (2.4)</p> <ul style="list-style-type: none"> Know that photos of themselves or other people should not normally be uploaded to the open web (2.2, 2.6) Know to close the laptop lid or turn the tablet over and tell a teacher, their parents, another trusted adult or ChildLine if they find inappropriate content (2.4, 2.5). 	<p>Relevant units:</p> <p>3.3: We are presenters</p> <p>3.4: We are who we are</p> <p>3.5: We are co-authors</p> <p>3.6: We are opinion pollsters</p>	<p>Scratch community can be reported to the community moderators (units 4.1 and 4.2).</p> <ul style="list-style-type: none"> Know that they should talk to their parents about concerns and inappropriate behaviour outside school. <p>Relevant units:</p> <p>4.3: We are musicians</p> <p>4.4 We are bloggers</p> <p>4.6: We are meteorologists</p>	<p>outside school. (5.4 and 5.5)</p> <p>Relevant units:</p> <p>5.2: We are cryptographers</p> <p>5.3 We are architects</p> <p>5.4: We are web developers</p>	<p>Relevant units:</p> <p>6.3: We are publishers</p> <p>6.4: We are connected</p> <p>6.5: We are advertisers</p>	
	Key vocabulary	Key vocabulary	Key vocabulary	Key Vocabulary	Key Vocabulary	Key Vocabulary	Key Vocabulary	
	computer on off safe tablet	online screen time	e-safety copyright inappropriate permission personal private	metadata photograph upload respect post share	command prompt spam spoofed link virus anonymous	fair use feedback parody	bias cipher Morse code semaphore security	advert Creative Commons IP address marketing

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Digital Literacy	EYFS – Nursery	EYFS - Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Using ICT beyond school	People, culture and communities <ul style="list-style-type: none"> Describe their immediate environment using knowledge from observation, discussion, stories, nonfiction texts and maps. Expressive arts and design <ul style="list-style-type: none"> Make use of props and materials when role playing characters in narratives and stories 		Pupils should be taught to: <ul style="list-style-type: none"> Recognise common uses of technology at home and beyond school 					
	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes
	<ul style="list-style-type: none"> Pupils use a phone, tablet or computer in an appropriate way in provision e.g. pretending to talk or type Pupils may be able to name familiar communication devices 	<ul style="list-style-type: none"> Pupil may talk about family members and friends using devices for communication. Pupil may understand that phones, tablets and computers can be used for texting and different types of calls Pupils may describe and / or re-enact their own personal experiences of communicating with devices. 	<ul style="list-style-type: none"> The pupil can show an awareness of how IT is used for communication beyond school. The pupil can mention some of the ways in which IT is used to communicate beyond school. E.g. They might know that some people use social media such as Facebook, email, video calls or online greetings to say happy birthday to their friends. 	<ul style="list-style-type: none"> The pupil can show an awareness of how IT is used for a range of purposes beyond school. The pupil can name a number of purposes for which IT is used beyond school. The pupil might know that adults can share work and discuss ideas in online communities; that photos can be taken, edited and shared easily using digital technology; that the web is made up of information shared by people and organisations; that people use email for a range of purposes and in a variety of contexts; that scientists use computers when collecting and analysing data. 				
	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge
	<ul style="list-style-type: none"> Recognising familiar devices used for communication 	<ul style="list-style-type: none"> How different devices may be used The names of different devices 	<ul style="list-style-type: none"> Recognise online collaboration tools such as Google Forms and the Google Suite Relevant units: 1.2: We are TV chefs 1.3: We are digital artists 1.4: We are publishers 1.5: We are rhythmic 1.6: We are detectives	<ul style="list-style-type: none"> Recognise that people can share work and discuss ideas using online communities (2.1, 2.2). Recognise that people take, edit and share photographs using digital technology (2.3). Recognise that people publish useful information on the web (2.4). Recognise that videos can be edited digitally to great effect (2.5). Recognise that scientists use a range of digital technologies when collecting and analysing data (2.6). 				
	Key vocabulary	Key vocabulary	Key vocabulary	Key Vocabulary	Key Vocabulary	Key Vocabulary	Key Vocabulary	Key Vocabulary
			email video call communicate social media search engine greetings	online communities publish information digital editing data				

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Computer Science	EYFS – Nursery	EYFS - Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Problem Solving	ELG Listening, attention and understanding <ul style="list-style-type: none"> Listen attentively and respond to what they hear with relevant questions, comments and actions when being read to and during whole class discussions and small group interactions 		Pupils should be taught to: <ul style="list-style-type: none"> Understand what algorithms are. Understand that algorithms are implemented as programs on digital devices. Understand that programs execute by following precise and unambiguous instructions. 		Pupils should be taught to: <ul style="list-style-type: none"> design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts 			
	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes
		<ul style="list-style-type: none"> Follow instructions on how to use a Bee Bot, tablet or computer appropriately 	<ul style="list-style-type: none"> Understand that there are algorithms for grouping or sorting things (1.4). Create a Bee Bot program, implementing the complete algorithm for their solution (1.1). Create a Bee Bot program, implementing the complete algorithm for their solution (1.1). 	<ul style="list-style-type: none"> Think of the steps to taking and editing photographs as an algorithm (2.3). Program the Bee Bot and the Space Simulator to solve the problems set (2.1). Recognise how the Scratch games implement sets of rules (2.2). 	<ul style="list-style-type: none"> Create an animation in Scratch (3.1) Explore the tennis and racing car simulator programs (3.2) Plan an animation project (3.1). Plan their video project (3.3). Plan their online survey-based project (3.6) 	<ul style="list-style-type: none"> Plan and develop a simple educational game, e.g. a maths quiz, in Scratch (4.1). Plan and develop a prototype for an interactive toy in Scratch (4.2). Develop a prototype for an interactive toy (4.2) Work with a partner to plan how to tackle these programming projects (4.1 and 4.2) Contribute to a discussion about how the class could create a wiki or monitor and forecast the weather (4.1). 	<ul style="list-style-type: none"> Design, write and debug their own game in Scratch (5.1) Design, program and debug their own geometric pattern in Scratch (5.1). Use decomposition to plan how they will create a game, a website and a virtual art gallery. (5.1 and 5.6) 	<ul style="list-style-type: none"> Plan, implement and debug their own app for a smartphone or tablet. (6.1, 6.4 and 6.5) Incorporate additional input and output available in the smartphone or tablet for which they are developing their app, if appropriate. (6.1, 6.4 and 6.5) Use decomposition to plan how they will tackle the app development project; follow their plan in subsequent units. (6.2)
	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge
		<ul style="list-style-type: none"> To know what is appropriate when using technology in the classroom 	<ul style="list-style-type: none"> To know that a set of directions is an algorithm (1.1). To know that steps in a recipe can be seen as an algorithm (1.2). 	<ul style="list-style-type: none"> To know that sets of directions are algorithms (2.1). To know that the rules of a game are an algorithm (2.2). 	<ul style="list-style-type: none"> To know how to plan a project to fulfil a purpose, for <ul style="list-style-type: none"> an animation a video an online-survey 	<ul style="list-style-type: none"> To know how to plan a project to fulfil a purpose, for <ul style="list-style-type: none"> an educational game an interactive toy 	<ul style="list-style-type: none"> To know how to decompose a problem to create <ul style="list-style-type: none"> a game a website a virtual art gallery 	<ul style="list-style-type: none"> To know how to decompose a problem to create <ul style="list-style-type: none"> an app
	Key vocabulary	Key vocabulary	Key vocabulary	Key Vocabulary	Key Vocabulary	Key Vocabulary	Key Vocabulary	Key Vocabulary
			debug edit instructions	rules	research storyboard survey	Data-logging interactive prototype reliable	decomposition	

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Computer Science	EYFS – Nursery	EYFS - Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Programming	ELG PSED: Be confident to try new activities and show independence, resilience and perseverance in the face of challenge.		Pupils should be taught to: <ul style="list-style-type: none"> Create simple programs, Debug simple programs. 		Pupils should be taught to: <ul style="list-style-type: none"> use sequence, selection, and repetition in programs; work with variables and various forms of input and output 			
	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes
	<ul style="list-style-type: none"> To explore using a Bee Bot 	<ul style="list-style-type: none"> To input one given set of simple instructions to program a Bee Bot e.g. forward, forward, left using symbol cards 	<ul style="list-style-type: none"> Give the Bee Bot a complete program (1.1). 	<ul style="list-style-type: none"> Create their own program for the space simulator, correcting any errors (2.1). 	<ul style="list-style-type: none"> Use sequences of instructions in their Scratch animation program (3.1). Create a simple animation program in Scratch (3.1) 	<ul style="list-style-type: none"> Create compositions as sequences of notes with some repeating elements, e.g. a bass line(4.3) Display questions on screen and accept typed input(4.1) Show toy on screen and have it respond to key presses (4.2) 	<ul style="list-style-type: none"> Use the keyboard and/or mouse for input for their game, produce output on screen and use sound effects, music or narration. (5.1) 	<ul style="list-style-type: none"> Make use of sequence, selection, repetition and variables in their app. (6.5)
	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge
	<ul style="list-style-type: none"> To know that their own actions can create movement in a BeeBot 	<ul style="list-style-type: none"> To know that Bee Bots follow instructions 	<ul style="list-style-type: none"> To know how to program a Bee Bot 	<ul style="list-style-type: none"> To know how to program a simulation To know how to debug a program 	<ul style="list-style-type: none"> To know how to program an animation 	<ul style="list-style-type: none"> To know how to write a maths test program using sequences of instructions and repetition(4.1) To know how to create a prototype for an interactive toy using sequences of instructions and repetition (4.2) 	<ul style="list-style-type: none"> To know how to program a game which includes sequence, selection and repetition. (5.1) 	<ul style="list-style-type: none"> To know how to use touch screen and other input (e.g. GPS or accelerometer) and screen, speaker and other output (e.g. vibration motor, network connectivity) in their app. (6.4 and 6.5)
	Key vocabulary	Key vocabulary	Key vocabulary	Key Vocabulary	Key Vocabulary	Key Vocabulary	Key Vocabulary	Key Vocabulary
	backwards Bee Bot forwards press turn	clear direction left right robot	algorithm code logical predict program programming	Scratch simulation simulator Sprite test	animation binary code bugs input output script video conference	HTML HTTP (hyper text transfer protocol) interface Packet of data repetition sequence variable	decrypt encrypt virtual	Bluetooth Cellular telephone system Domain Name Service (DNS) Geotagging GPS Network NFC (Near Field Communication) procedure pseudocode Python selection sort syntax

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Computer Science	EYFS – Nursery	EYFS - Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Logical Thinking		ELG Self-regulation Set and work towards simple goals, being able to wait for what they want and control their immediate impulses when appropriate	Pupils should be taught to: <ul style="list-style-type: none"> Use logical reasoning to predict the behaviour of own programs. Use logical reasoning to predict the behaviour of others' programs. 		Pupils should be taught to: <ul style="list-style-type: none"> use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 			
	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes
		<ul style="list-style-type: none"> Wait to take their turn at touch screen table or with Bee Bots, tablets etc. Ask for help when struggling to use a device Control immediate impulses when frustrations arise during technology use e.g. an app isn't working 	<ul style="list-style-type: none"> Explain what their own or another child's program will do before it is run (1.1). 	<ul style="list-style-type: none"> Give logical explanations for what their own or their peers' programs will do (2.1). Give logical explanations for what happens in the games (2.2). 	<ul style="list-style-type: none"> Explain the idea for their animation in their own words (3.1). Explain the idea for their video in their own words (3.3) Use logical reasoning to spot bugs in their animation (3.1). Use logical reasoning to spot the bugs in the programs provided (3.2) 	<ul style="list-style-type: none"> Explain the algorithm for their question and answer game, including repeating elements (4.1) Explain the algorithms used in their toy, including repeating elements (4.2) Discuss their compositions, including repeating patterns of notes (4.3) 	<ul style="list-style-type: none"> Explain the rules of their game in their own words. (5.1) Spot and correct errors in the rules of their game. (5.1) Spot and correct errors in the algorithm for their geometric pattern (5.3) Gain experience of creating web pages using content management systems and understand how these pages are transmitted via the internet.) (5.4 and 5.5) 	<ul style="list-style-type: none"> Give clear and precise explanations of the event-driven algorithms they've used in the app. (6.4 and 6.5) Use logical reasoning to detect and correct errors in the event-based algorithms they use in their app and in their code. (6.4 and 6.5)
	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge
		<ul style="list-style-type: none"> To know that technology is not always available for immediate use To know that, sometimes, technology can be frustrating and how to respond appropriately 	<ul style="list-style-type: none"> To know what a program will do based on what has been input. 	<ul style="list-style-type: none"> To know how to explain what a program will do based on what has been input. 	<ul style="list-style-type: none"> To know that information is communicated through the internet in a binary code (3.4). To know that email and videoconferencing also take place through transmitting binary information (3.5). To know that emails and video-conferencing are routed via the internet (3.5) 	<ul style="list-style-type: none"> To know that the HTML for a web page is broken into packets for transmission over the internet (4.4) To know how the internet makes it possible to request and receive web pages (4.4 and 4.5) To know that music is broken down into packets for transmission over the internet (4.3) 	<ul style="list-style-type: none"> To know how encrypted messages are routed on the internet. (5.2) To know how web pages are routed on the internet (5.4 and 5.5) 	<ul style="list-style-type: none"> Demonstrate an understanding of how networks such as the cellular telephone system, Bluetooth and NFC operate. (6.1) To know how a domain name is converted into an IP address. (6.6)
	Key vocabulary	Key vocabulary	Key vocabulary	Key Vocabulary	Key Vocabulary	Key Vocabulary	Key Vocabulary	Key Vocabulary
			algorithm code logical predict program programming robot	Scratch simulation simulator Sprite test	animation binary code bugs input output script video conference	HTML HTTP (hyper text transfer protocol) interface Packet of data repetition sequence variable	decrypt encrypt virtual	Bluetooth Cellular telephone system Domain Name Service (DNS) Geotagging GPS Network NFC (Near Field Communication) procedure pseudocode Python selection sort syntax

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Information Technology	EYFS – Nursery	EYFS - Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Creating Content	ELG EAD <ul style="list-style-type: none"> Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. PSED: <ul style="list-style-type: none"> Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. 		Pupils should be taught to: <ul style="list-style-type: none"> Use technology purposefully to organise, store and retrieve digital content. Use technology to purposefully create and manipulate digital content. 		Pupils should be taught to: <ul style="list-style-type: none"> 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 			
	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes
	<ul style="list-style-type: none"> To explore using a paint program. To explore age appropriate software. 	<ul style="list-style-type: none"> To create an image using a paint program. To type text on a computer. To complete a game on an iPad. 	<ul style="list-style-type: none"> Film and upload a child cooking (1.2). Create an original painting (1.3). Create original digital audio (1.5). Type their own text (1.6). 	<ul style="list-style-type: none"> Review, reject and rate the photographs they have taken (2.3). Use questions to sort and classify objects; take, upload and organise photographs; add information to a map (2.6). Take and edit original digital photographs (2.3). Create and edit their own presentation (2.4). Write and edit an email (2.5). Take and edit photographs and create and edit charts (2.6). 	<ul style="list-style-type: none"> Plan and shoot video (3.3). Plan and create a presentation (3.5). Plan and then write survey questions, and plan and create a presentation (3.6). Shoot and then show video (3.3). Read and respond to email (3.5). Collect and present survey results (3.6) 	<ul style="list-style-type: none"> Combine composition and audio editing software (4.3) Combine a text editor and web browser (4.4) Combine spreadsheet and presentation software i(4.6.) Compose original music for a particular purpose (4.3) Contribute content to a wiki for a particular purpose(4.5) Create a presentation on the weather (4.6) Record and use audio samples(4.3) Collect weather data and make a presentation about the weather(4.6) 	<ul style="list-style-type: none"> Combine local media with web-based Scratch programs. (5,1) Combine local media, including that captured using portable technology, with a web-based content management system. (5.4 and 5.5) Use digital photographs and other media in a virtual art gallery. (5.6) Evaluate the quality of the information on which they are drawing. Analyse this to provide a clear and coherent summary on their own page. (5.4) 	<ul style="list-style-type: none"> Use a range of media to create an effective pitch presentation in software of their own choice. (6.1) Use a range of media packages of their own choice to market their app. (6.6) Conduct market research into their planned app, evaluating and analysing the data obtained. (6.3)
	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge
<ul style="list-style-type: none"> To know that their actions can move the paint in a program. To know how their touch affects movement on a screen. 	<ul style="list-style-type: none"> To know that they can use a variety of tools to create a desired effect in paint. To know how to follow instructions to complete a game. 	<ul style="list-style-type: none"> To know how to open an e-book, import illustrations, add them to the e-book and save their work (1.3). To know how to retrieve previous work, import further illustrations and save their work (1.4). To know how to open the template, record audio, import it to the computer and save their work (1.5). To know how to open the card template, find images online and save their work (1.6). To know how to film digital video (1.2). 	<ul style="list-style-type: none"> To know how to find useful information on websites (2.4). To know how to save and retrieve their presentations; add images or other media as appropriate (2.5). 	<ul style="list-style-type: none"> To know how to use Movie Maker (3.3) To know how to use the Command prompt and network program (3.4) To know how to use Outlook or webmail and Skype (3.5) To know how to use Google Forms, Google Sheets and Google Slides (3.6). 	<ul style="list-style-type: none"> To know how to combine software to reach a goal. To know how to create web content through writing HTML code for a particular purpose (4.4) 	<ul style="list-style-type: none"> To know how to design and create a computer game in response to a given brief. (5.1) To know how to design and create a geometric pattern using turtle graphics in response to a given brief. (5.3) 	<ul style="list-style-type: none"> To know how to design and build a smartphone or tablet app for an agreed purpose. (6.1, 6.4 and 6.5) 	

Computing knowledge progression

	Key vocabulary	Key vocabulary	Key vocabulary	Key Vocabulary	Key Vocabulary	Key Vocabulary	Key Vocabulary	Key Vocabulary
	click screen	cursor keyboard monitor mouse	audiobook clip e-Book film illustration keyboard microphone recording save sound effects type video camera	address attachment classification key data database fact file header image pixel portfolio research search search engine	audio close-up footage panning questions rating scale shooting video camera zooming	composition digital hyperlink pitch sample software Spreadsheet style tag URL	blog blogroll dashboard gallery geometric password podcast screencast Selection virtual	Desktop publishing (DTP) Final cut flowchart rough cut Rushes of footage Smartphone Tracklog typeface Webserver

Computing knowledge progression

Information Technology	EYFS – Nursery	EYFS - Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
searching					Pupils should be taught to: <ul style="list-style-type: none"> use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content 			
	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes	Key Learning Outcomes
					<ul style="list-style-type: none"> Use browser-specific tools (e.g. the Find command) and site-specific tools (such as the search tools for Wikipedia or YouTube) to locate particular information on a web page or within a website. Use keywords when searching. 	<ul style="list-style-type: none"> Use Google to support their wiki research project(4.5) Appreciate how Wikipedia's search engine ranks results(4.6) 	<ul style="list-style-type: none"> Use the filters in Google to search for information relevant to the topic of their web page and appropriate for its intended audience. (5.4) Understand that Google uses a cached copy of the crawlable web to generate search results, using the links between the pages in the cache to determine the rank order in which results are displayed. (5.4) 	<ul style="list-style-type: none"> Use a number of search engines to find out about smartphone or tablet apps. (6.1) In developing their website in 6.6, recognise how its search rank can be improved by having links to it from other high-ranking websites. (6.6)
	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge	Key Knowledge
					<ul style="list-style-type: none"> To know how to navigate web pages using their built-in tools. To know how to select keywords for searching. 	<ul style="list-style-type: none"> To know how to carry out research using Google. To know how Wikipedia's search engine ranks results. 	<ul style="list-style-type: none"> To know how to use filters in Google. To know how Google generates it's search results. To know how Google ranks it's search results. 	<ul style="list-style-type: none"> To know that there is a choice of search engines. To know how to improve a website's search rank.
	Key vocabulary	Key vocabulary	Key vocabulary	Key Vocabulary	Key Vocabulary	Key Vocabulary	Key Vocabulary	Key Vocabulary
					keywords navigate web page	information page rank wiki	cache revision history	binary search linear search random search selection sort quick sort

Numbers in brackets refer to the unit this appears in 'Switched on Computing'.