



#### Numbering system

Subject.Year.Strand.Statement

Text shown in **bold** is a key term, and is defined in the Glossary.

	DOMAIN: COMPUTER SCIENCE								
	LOWER KEY STAGE 2								
	Year 3								
Sub-strand	Progression statement	What to look for guidance (Working towards expectations)	What to look for guidance (Meeting expectations)	What to look for guidance (Exceeding expectations)	Relevant Switched on Computing unit(s)	Switched on Computing badge			
Problem solving	C.3.1.1. Design, write and debug programs that accomplish specific goals.  C.3.1.2. Controlling or simulating physical systems.	which can run automatically without user interaction.  A typical <b>program</b> might be an animation to tell a joke or part of a story, or perhaps be linked to a curriculum topic studied by the children. The	to another area of the curriculum. Programs could use pre-built sprites or ones designed by the child. Expect programs to include movement and dialogue; they may also include sound effects and some use of costumes to allow for animated movement. There may be more than one sprite in the animation.  (E.g. In 3.1, create an animation in Scratch.)  The child can explore simulations of physical systems on screen.	The child can design, write and debug a program using a block language, without user interaction.  At this level, expect the child to have successfully debugged their animation programs, which would typically include movement, on-screen dialogue, sound, costume changes and multiple sprites. Animations could be linked to curriculum topics, or simply tell jokes or a story. The child should be able to explain what bugs they found and how they fixed these.  (E.g. In 3.1, create an animation in Scratch, independently debugging any errors they encounter. In 3.2, debug the Scratch programs given.)  The child can develop their own simulations of a simple physical system on screen.  The child can develop simulations of simple physical systems, e.g. a simple tennis game or a racing car moving around a track. Do not expect the child to have a full understanding of underlying physics. The child can discuss the limitations of their simulation.  (E.g. In 3.1, create an animation of a physical system. In 3.2, fix the tennis and racing car programs.)		Problem solver 2  Problem solver 2			





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Problem solving	C.3.1.3. Solve problems by decomposing them into smaller parts	The child can identify parts of a project.  When working on a project, such as an animation, a video or a survey, the child can identify the different stages of the project and/or the resources they will need for their project. In video work, parts of a project might include identifying a subject; storyboarding the video; sourcing media; recording video; filming; editing; exporting.  (E.g. In 3.1, consider the different elements of an animation project.  In 3.6, consider the different parts of a video project.  In 3.6, consider the different parts of an online survey-based project.)	The child can plan a project.  Working with the teacher and, perhaps, other children, the child can develop an outline plan for a project in computing, involving multiple steps and resources, e.g. creating an animation, filming a video or conducting a survey. In video work, the plan might include identifying a subject; storyboarding the video; sourcing media; recording video; filming; exporting.  (E.g. In 3.1, plan an animation project. In 3.3, plan their video project. In 3.6, plan their online survey-based project.)	The child can work with others to complete a project. In working on a project, such as an animation, a video or a survey, the child can contribute effectively to a team to accomplish the main project outcomes. In video work, the child could work with others to identify a subject; storyboard the video; source media; record video; film, edit and export.  (E.g. In 3.1, work with others to complete their animation project. In 3.8, work with others to complete their online survey-based project.)	3.1, 3.3, 3.6	Problem solver 2		
Programming	C.3.2.1. Use sequence, selection and repetition in programs; work with variables.	The child can understand that <b>programs</b> include <b>sequences</b> of instructions.  The child can understand that <b>programs</b> are made up of <b>sequences</b> of instructions (ideally in code they have created themselves, but possibly that of their peers or <b>programs</b> they have been provided with). A typical program could be a <b>scripted</b> animation using movement and onscreen text. The child can look at a <b>program</b> on screen and list some of the instructions it includes.  (E.g. In 3.1 and 3.2, notice that programs are made of sequences of instructions.)	In on-screen programming, the child's program should include a sequence of commands or blocks in an appropriate order.	The child can use sequence and repetition in programs.  In on-screen programming, the child can include sequences of commands or blocks. The child can include some repeating loops, typically using a 'forever' or 'while true' construction, or repetition for a fixed number of times. Programs could include simple animations (e.g. telling a joke, a story or explaining an idea taken from elsewhere on the curriculum) but could also include music as a sequence of steps to play notes or drawing as a sequence of steps to draw a shape.  (E.g. In 3.1, use sequence and repetition in their animation program.  In 3.2, debug programs using sequence and repetition.)		Programmer 2		
	C.3.2.2. Work with various forms of input and output	input and produce output.  The child can identify the most common forms of input (e.g. keyboard and mouse/trackpad or	output on screen, such as moving sprites or displayed text, e.g. a simple animation	The child can write a program to produce output on screen and through speakers/headphones.  The child can write a program that produces output on screen (e.g. displayed text and moving sprites in a simple animation) as well as some sound (e.g. recorded audio, computer-generated music or sound effects for an animation program).  (E.g. In 3.1, create an animation program in Scratch that includes some sound effects or recorded voices.)	3.1, 3.2, 3.3, 3.6	Programmer 2		





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Logical thinking	C.3.3.1. Use logical reasoning to explain how some simple algorithms work.	The child can predict what an <b>algorithm</b> will do.  The child can explain what will happen when their <b>algorithm</b> is implemented as a <b>program</b> on a computer or when its instructions or rules are followed.  (E.g. In 3.1, use their storyboard to predict what happens next.)	The child can give an explanation for a simple algorithm based on a sequence of instructions. The algorithm could be one of their own, or a simple one with which they have been provided. The algorithms could be	The child can explain an algorithm using sequence and repetition in their own words.  The child can give an explanation for a simple algorithm based on a sequence of instructions with some repetition (either 'forever' or for a fixed number of times). The algorithm could be one of their own, or a simple one with which they have been provided. The algorithms could be recorded graphically, such as a storyboard, or in other forms, such as staff notation.  (E.g. In 3.1, explain the idea for their animation in their own words, discussing how they have used repetition in this.)	3.1, 3.3	Logical thinker 2		
	C.3.3.2. Use logical reasoning to detect and correct errors in algorithms and programs.	The child can spot errors in <b>programs</b> .  When running a <b>program</b> , the child can identify that there is an error and can describe what went wrong. The <b>programs</b> can be the child's own or ones provided for them.  (E.g. In 3.1, spot bugs in their animation. In 3.2, spot bugs in the programs provided.)	errors in programs.  The child can give well-thought-through reasons for errors they find in programs. Typically, the child can find errors by reasoning logically about the program code, but they might also be able to use logical reasoning to identify errors in programs when they are executed. The programs do not have to be written originally by the child.	The child can use logical reasoning to detect and correct errors in programs.  The child can give well-thought-through reasons for errors they find in programs and explain how they have fixed these. The child can find and correct errors by reasoning logically about the program code, but they might also be able to use logical reasoning to identify errors in programs when executed and confirm that they have fixed these by testing the new version of their program. The programs do not have to be written originally by the child.  (E.g. In 3.1, spot and correct errors in their animation using logical reasoning.  In 3.2, use logical reasoning to detect and correct errors in the provided programs.)	3.1, 3.2	Logical thinker 2		





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Sub-strand	Progression statement	What to look for guidance (Working towards expectations)	What to look for guidance (Meeting expectations)	What to look for guidance (Exceeding expectations)	Relevant Switched on Computing unit(s)	Switched on Computing badge			
Logical thinking	C.3.3.3. Understand computer networks including the internet.	The child can understand that computer networks transmit information.  The child can understand that information of many different sorts can be transmitted through computer networks including the internet. The child will understand that this is (generally) fast and reliable.  (E.g. In 3.4, recognise that information is communicated through the internet. In 3.5, understand that email and videoconferencing also take place via the internet.)	to be converted to numbers before it can travel	The child can understand some ways in which information can be converted into a binary code.  The child can explain that any information has to be converted to numbers before it can travel through computer <b>networks</b> ; these numbers are represented as binary (on/off or high/low) signals. The child should understand that this conversion happens according to an agreed system or code, and that a number of different systems are, or have been, used, e.g. Morse and <b>unicode</b> for text, bitmaps for images, <b>pulse code modulation (PCM)</b> encoding of audio.  (E.g. In 3.4 and 3.5, think of ways in which information can be converted to a binary code.)	3.4, 3.5	Communicator			
	C.3.4.1. Understand how network can provide multiple services, such as the world wide web.	ts C.3.4.2. The child can understand that email works through the internet.  The child can explain that email is sent and received via servers connected to the internet.  (E.g. In 3.5, understand that emails are routed via the internet.)	C.3.4.3. The child can understand that email and videoconferencing are made possible through the internet.  The child should know that email messages are sent and received through servers connected to the internet. The child should know that Skype and other videoconferencing systems also work through the internet, but these services may be direct, peer-to-peer connections rather than via servers.  (E.g. In 3.5, understand that emails and videoconferencing are routed via the internet.)	C.3.4.4. The child can understand that the internet can provide a number of services in addition to the web.  The child should demonstrate an understanding that the internet plays host to a range of different services including, e.g. the web, email, videoconferencing, online gaming, file sharing and instant messaging.  (E.g. In 3.4 and 3.5, understand that services such as ping, traceroute, nslookup, email and videoconferencing all function via the internet.)	3.4, 3.5	Communicator			



Sub-strand

E-safety

#### **Computing Progression Framework**

## Numbering system Subject, Year, Strand, Statement

(E.g. 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 3.1 and 3.2). Know that they should talk to their parents about concerns

and inappropriate behaviour outside school.)

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DOMAIN: DIGITAL LITERACY LOWER KEY STAGE 2 Year 3 Progression statement What to look for guidance (Working towards What to look for guidance (Meeting expectations) What to look for guidance (Exceeding expectations) Relevant Switched on Switched on Computing unit(s) Computing badge C.3.1.1. Use technology safely, The child can demonstrate that they can act responsibly when using 3.1, 3.2, 3.3, 3.4, 3.5, 3.6 The child can use digital technology safely. The child can use digital technology safely and show respect for F-safety 2 espectfully and responsibly others when working online The child should know that they need to keep themselves safe when using digital technology. E.g. The child should know that they need to keep themselves safe The child can demonstrate that they act responsibly when using They should take care when using the Command when using digital technology. E.g. They should show respect for computers. E.g. They should contribute positively to online prompt and should treat attachments and links in others when filming and should not normally post videos online. communities, if allowed to do so, observing the terms and conditions. mails with caution They should take care when using the Command prompt and They should take care when filming others and should not post videos should treat links and attachments in emails with caution. If of others online. They should treat links and attachments in emails (E.a. In 3.4. use the Command prompt with care esponding to online surveys, they should do so anonymously. with caution. If responding to online surveys, they should do so In 3.5 take care with links and attachments in email hinking carefully about information they give out. anonymously, thinking carefully about information they give out. espond appropriately to others.) (E.g. In 3.3, take care to film appropriately and not publish video of (E.g. In 3.1 and 3.2, contribute positively to the Scratch community, if In 3.4, use the Command prompt with care. In 3.3, take care to film appropriately and not publish video of other In 3.5, take care with links and attachments in email. children In 3.6, ensure questions are answered anonymously.) In 3.4, use the Command prompt with care In 3.5, take care with links and attachments in email. In 3.6, ensure questions are answered anonymously. C.3.1.2. Recognise The child can give examples of things that they should The child can recognise unacceptable behaviour when using digital. The child can understand the difference between acceptable and 3.1. 3.2. 3.3. 3.4. 3.5. 3.6 E-safety 2 acceptable/unacceptable or should not do when using digital technology. inacceptable behaviour when using digital technology. behaviour. The child can give some examples of things they The child can identify what would be unacceptable or inappropriate The child can discuss the difference between acceptable and should or should not do when using digital technology behaviour when using digital technology in a range of contexts. unacceptable behaviour when using digital technology in a range of in a range of contexts. Contexts could include the E.g. They should know what would be unacceptable when using Scratch website, or other online communities: using online communities, such as the Scratch website, or when shooting communities; using the Command prompt; using email; filming or the Command prompt; using email; filming or sharing or publishing video. They should know what would be unacceptable sharing video; using online survey tools. video; using online survey tools. ise of the Command prompt, email or online survey tools (E.g. In 3.1 and 3.2, understand the difference between acceptable (E.g. In 3.3, give examples of good or bad practice (E.g. In 3.1 and 3.2, recognise unacceptable behaviour when usi and unacceptable behaviour when using the the Scratch community. when shooting or publishing video. the Scratch community In 3.3, understand the difference between acceptable and In 3.4, give examples of good or bad practice when In 3.3, recognise unacceptable behaviour when shooting or unacceptable behaviour when shooting or publishing video. using the Command prompt. oublishina video In 3.4. understand the difference between acceptable and In 3.4, recognise unacceptable behaviour when using the In 3.5, give examples of good or bad practice when unacceptable behaviour when using the Command prompt. Command prompt. In 3.5. understand the difference between acceptable and usina email. In 3.6, give examples of good or bad practice when In 3.5, recognise unacceptable behaviour when using email. unaccentable behaviour when using email creating or completing online surveys.) In 3.6, recognise unacceptable behaviour when creating or In 3.6, understand the difference between acceptable and completing online surveys.) unacceptable behaviour when creating or completing online surveys.) C.3.1.3. Know a range of ways to Know who to talk to about inappropriate behaviour in Know who to talk to about concerns and inappropriate behaviour in Know who to talk to about concerns and inappropriate behaviour at 3.1, 3.2, 3.3, 3.4, 3.5, 3.6 F-safety 2 report concerns and home or in school Pupils should know to report inappropriate behaviour inappropriate behaviour when using technology in school to their teacher, the Pupils should know to report inappropriate behaviour when using Pupils should know to report inappropriate behaviour when using etwork manager or another trusted adult. echnology in school to their teacher, the network manager or technology in school to their teacher, the network manager or anothe another trusted adult, and that they can discuss any concerns they trusted adult, and that they can discuss any concerns they have with (F.g. Know to tell a teacher about inappropriate have with their teacher or other trusted adults in school. their teacher or other trusted adults in school. They should also know haviour in units 3.3, 3.4, 3.5 and 3.6.) that any concerns over inappropriate behaviour with digital technology at home can be discussed with their parents, with you or with another (E.g. Know to tell a teacher about any concerns or inappropriate trusted adult. Pupils might also know that they can report behaviour in any units. inappropriate behaviour to those running websites, to ChildLine, to CEOP or to the police.



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	DOMAIN: DIGITAL LITERAC	Υ				
	LOWER KEY STAGE 2					
	Year 3					
Sub-strand	Progression statement	What to look for guidance (Working towards expectations)	What to look for guidance (Meeting expectations)	What to look for guidance (Exceeding expectations)	Relevant Switched on Computing unit(s)	Switched on Computing badge
E-safety	C.3.1.4. Be discerning in evaluating digital content.	The child can make choices about which web page they consider most useful.  When given a list of web pages, the child can decide which they think will be most useful for their purpose or to answer a question they have.	The child can decide whether a web page is relevant for a given purpose or question.  The child 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 child can decide whether digital content is relevant for a given purpose or question.  The child can form a judgement about whether a web page or other digital content is appropriate for finding out the answer to a question they have or for a given purpose.  (E.g. In 3.1, 3.3 and 3.6, carefully consider whether their work is well suited to its intended purpose.)	Across the curriculum and 3.1, 3.3, 3.6	Searcher
	C.3.1.5. Understand the opportunities networks offer for communication and collaboration	The child can use email to communicate with a classmate.  The child can email to communicate effectively with a classmate. This will typically be part of a whole-class activity.  (E.g. In 3.5, use email to communicate.)	The child can use email and videoconferencing in class.  When working as part of the class, the child can use email effectively and participate in a whole-class videoconference.  (E.g. In 3.5, use both email and videoconferencing to communicate.)	The child can use email and videoconferencing effectively for a given purpose.  When working as part of the class and with a given purpose, the child can use email effectively and actively participate in a whole-class videoconference.  (E.g. In 3.5, use email and videoconferencing effectively for the given purpose.)	3.5	Communicator









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# DOMAIN: INFORMATION TECHNOLOGY LOWER KEY STAGE 2 Year 3 Progression statement | What to look for guidance (Meeting (Working towards expectations) | What to look for guidance (Exceeding expectations) | Relevant Switched on Computing | Switched on Computing | Computing badge

	Year 3							
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	C.3.1.1. Select, use and combine a variety of software (including internet services) on a range of digital devices.	The child can use a range of <b>software</b> on laptop or tablet computers, with support when necessary. <b>Software</b> might include video editing, email clients, videoconferencing (with the teacher or	or tablet computers with some degree of independence. Software might include video editing, diagnostic tools, email clients, videoconferencing (with the teacher or another adult), survey design software, spreadsheets and presentation software.  (E.g. Use Movie Maker in 3.3, use the Command	The child can use and combine a range of <b>programs</b> on a computer.  The child can use multiple <b>programs</b> on laptop or tablet computers to achieve particular goals. E.g. They might create a presentation and then email this to a classmate; create a survey using a survey design application, analyse the results in a spreadsheat and then make a presentation about their findings.  (E.g. In 3.5, combine email and presentation software. In 3.6, combine Google Forms, Google Sheets and Google Slides.)	3.3, 3.4, 3.5, 3.6	Content creator 2		
	C.3.1.2. Design and create a range of programs, systems and content that accomplish given goals.	The child can create content on a computer. The child can use <b>software</b> on a laptop or tablet to create digital content, with support if necessary. E.g. They could shoot a video, create a presentation on a given topic or create an online survey.  (E.g. In 3.3, shoot video. In 3.5, compose emails and create a presentation. In 3.6, write survey questions and create a presentation.)	they use software on a laptop or fablet to create digital content with some degree of independence. E.g. They could plan and shoot a video, plan and create a presentation on a given topic or plan and then create an online survey.  (E.g. In 3.3, plan and shoot video. In 3.5, plan and create a presentation.	The child can design and create content on a computer in response to a given goal.  With a given goal, the child can plan and execute a project in which they use software on a laptop or tablet to create digital content with some degree of independence. E.g. They could plan and shoot a video, plan and create a presentation on a given topic or plan and then create an online survey. They should evaluate how effectively they have met the requirements of the original goal.  (E.g. In 3.3, plan and shoot video for a given goal. In 3.6, plan and create a presentation for a given goal. In 3.6, plan and then write survey questions, and plan and create a presentation for a given research topic.)	3.3, 3.5, 3.6	Content creator 2		
	C.3.1.3. Collecting, analysing, evaluating and presenting data and information.	video, read an email or conduct an online survey. They should be able to do this with	The child can collect and present information.  The child can use computers to collect information and present this to an audience. E.g. They could shoot and then show a video, read and respond to an email or conduct an online survey and present the results. They should be able to do this with a degree of independence.  (E.g. In 3.3, shoot and then show video. In 3.5, read and respond to email. In 3.6, collect and present survey results.)	The child can collect, evaluate and present information.  The child can use computers to collect and evaluate information and present this to an audience. E.g. They could shoot, review and then show a video; read, consider and respond to an email or conduct an online survey, evaluate or summarise the results and present these. They should be able to do this independently for the most part.  (E.g. In 3.3, shoot, review and then show video. In 3.6, collect, review and present survey results.)	3.3, 3.5, 3.6	Content creator 2		







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Searching	G.3.2.1. Use search technologies effectively.	The child can search for information on a web page.  The child can use skimming and scanning strategies, and their web browser's Find command, to find specific information on a web page.	The child can search for information within a single site.  The child can 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.	The child can use a standard search engine to find information.  The child can use a common search engine (such as Google with safe search mode locked in place) effectively to search for particular information on the web.	To be covered across the curriculum.	Searcher				
	C.3.2.2. Appreciate how search results are selected and ranked.	The child can understand that search engines make it easier to find content online.  The child can use at least one search engine to find appropriate online content. The child should consider how much harder it would be to find online content without a search engine.	The child can understand that search engines select pages according to keywords found in the content.  When using search engines, the child should demonstrate their understanding that the pages shown include the keywords they have specified. The child can use this knowledge by thinking of good keywords appropriate for what they are searching.	The child can understand that search engines rank pages according to relevance.  The child can demonstrate their understanding that search engine results are ranked according to relevance, and that normally the top results on the first page are likely to be those most relevant to their query. If the child is unable to find good results on the first page, expect them to reconsider their keywords rather than looking at further pages of results.	Covered across the curriculum.	Searcher				