



## Computing Progression Framework

### Numbering system

Subject.Year.Strand.Statement

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| DOMAIN: COMPUTER SCIENCE |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                               |                                    |
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| LOWER KEY STAGE 2        |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                               |                                    |
| Year 4                   |                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                               |                                    |
| 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 <i>Switched on Computing</i> unit(s) | <i>Switched on Computing</i> badge |
| Problem solving          | C.4.1.1. Design, write and debug programs that accomplish specific goals.         | <p>The child can design and implement some elements of a <b>program</b> using a <b>block language</b> to a given brief, including simple interaction.</p> <p>The child can plan and partially implement a <b>program</b> in Scratch (or similar) in which the user has to provide some <b>input</b>, perhaps as an answer to a question on screen, or by using key presses or the mouse.</p> <p><i>(E.g. In 4.1, make progress towards developing a simple educational game, e.g. a maths quiz, in Scratch. In 4.2, develop some elements of their interactive toy prototype in Scratch.)</i></p> | <p>The child can design and write a <b>program</b> using a <b>block language</b> to a given brief, including simple interaction.</p> <p>The child can write a <b>program</b> in Scratch (or similar) in which the user has to provide some <b>input</b>, perhaps as an answer to a question on screen, or by using key presses or the mouse. The <b>program</b> could be a simple game or a set of questions and typed responses.</p> <p><i>(E.g. In 4.1, plan and develop a simple educational game, e.g. a maths quiz, in Scratch. In 4.2, plan and develop a prototype for an interactive toy in Scratch.)</i></p>                                                                                                                                                                 | <p>The child can design, write and <b>debug a program</b> using a <b>block language</b> to a given brief, including simple interaction.</p> <p>The child can write a <b>program</b> in Scratch (or similar) in which the user has to provide some <b>input</b>, perhaps as an answer to a question on screen, or by using key presses or the mouse. The child can <b>debug</b> their code thoroughly, explain what bugs they found and what they needed to do to correct these.</p> <p><i>(E.g. In 4.1, plan and develop a simple educational game in Scratch, e.g. a maths quiz, correcting any bugs themselves. In 4.2, plan and develop a prototype for an interactive toy in Scratch, correcting any bugs themselves.)</i></p>                                                        | 4.1, 4.2                                      | Problem solver 2                   |
|                          | C.4.1.2. Controlling or simulating physical systems.                              | <p>The child can implement some elements of a <b>simulation</b> on screen.</p> <p>The <b>simulation</b> could be of a physical system (such as an interactive toy or a set of traffic lights), perhaps as a simple animation or as an on-screen prototype for a product made in design and technology.</p> <p><i>(E.g. In 4.2, create some elements of an on-screen prototype for an interactive toy.)</i></p>                                                                                                                                                                                    | <p>The child can develop their own <b>simulation</b> of a simple physical system on screen.</p> <p>The child can create a Scratch (or similar) <b>program</b> to simulate a simple physical system. This could be in the form of a simple animation or an on-screen prototype for a product made in design and technology.</p> <p><i>(E.g. In 4.2, develop a prototype for an interactive toy.)</i></p>                                                                                                                                                                                                                                                                                                                                                                               | <p>The child can develop their own <b>simulation</b> of a physical system on screen including interactivity.</p> <p>The child can create a Scratch (or similar) <b>program</b> to simulate a simple physical system including some elements of interaction with the user. This could be in the form of a simple computer game or an interactive on-screen prototype for a product made in design and technology. Interaction is likely to be via the mouse pointer.</p> <p><i>(E.g. In 4.2, develop a working prototype for an interactive toy that responds to user input.)</i></p>                                                                                                                                                                                                      | 4.1, 4.2                                      | Problem solver 2                   |
|                          | C.4.1.3. Solve problems by decomposing them into smaller parts.                   | <p>The child can identify different ways to tackle a project.</p> <p>Given a particular project, the child can scope a number of alternative approaches to tackling it.</p> <p><i>(E.g. In 4.1 and 4.2, think of different ways to tackle these programming projects. In 4.5, think of different ways to work together on a wiki.)</i></p>                                                                                                                                                                                                                                                        | <p>The child can work with others to plan a project.</p> <p>Given a particular project, the child can work as part of a team to plan how to accomplish their goal, breaking the project down into a set of tasks. Examples of projects could include creating an educational game, developing a wiki or monitoring the weather.</p> <p><i>(E.g. In 4.1 and 4.2, work with a partner to plan how to tackle these programming projects. In 4.5 and 4.6, contribute to a discussion about how the class could create a wiki or monitor and forecast the weather.)</i></p>                                                                                                                                                                                                                | <p>The child can work collaboratively to complete a project according to an agreed plan.</p> <p>Given a particular project, the child can work as part of a team to plan how to accomplish their goal, breaking the project down into a set of tasks. They should use this plan to accomplish their project as a team. Examples of projects could include creating an educational game, developing a wiki or monitoring the weather.</p> <p><i>(E.g. In 4.1 and 4.2, work with a partner to plan and carry out these programming projects. In 4.5 and 4.6, contribute effectively to class projects on developing a wiki and monitoring and forecasting the weather.)</i></p>                                                                                                             | 4.1, 4.2, 4.5, 4.6                            | Problem solver 2                   |
| Programming              | C.4.2.1. Use sequence, selection and repetition in programs; work with variables. | <p>The child can use <b>sequence</b> in <b>programs</b>.</p> <p>In on-screen programming, the child's program should include a <b>sequence</b> of <b>commands</b> or <b>blocks</b> in an appropriate order. A typical program could be a simple <b>scripted</b> animation, a turtle graphic or a musical composition.</p> <p><i>(E.g. In 4.1, write a maths test program using sequences of instructions. In 4.2, create a prototype for an interactive toy using sequences of instructions. In 4.3, create compositions as sequences of notes.)</i></p>                                          | <p>The child can use <b>sequence</b> and <b>repetition</b> in <b>programs</b>.</p> <p>The child's program, typically written in Scratch, or similar, should include <b>sequences</b> of <b>commands</b> or <b>blocks</b> and some <b>repetition</b>. <b>Repetition</b> would typically be for a fixed number of times, but might also include exit conditions (e.g. repeat...until...). <b>Programs</b> might include turtle graphics, simple music or a simple game.</p> <p><i>(E.g. In 4.1, write a maths test program using sequences of instructions and repetition. In 4.2, create a prototype for an interactive toy using sequences of instructions and repetition. In 4.3, create compositions as sequences of notes with some repeating elements, e.g. a bass line.)</i></p> | <p>The child can use <b>sequence, selection</b> and <b>repetition</b> in <b>programs</b>.</p> <p>The child's program, typically written in Scratch, or similar, should include <b>sequences</b> of <b>commands</b> or <b>blocks</b>, some <b>repetition</b> and <b>selection</b>. <b>Repetition</b> might include exit conditions (e.g. repeat...until...). <b>Selection</b> would normally be of an if...then type. At this level, expect the child to be able to combine <b>repetition</b> with <b>selection</b>. <b>Programs</b> might include a simple game and an on-screen <b>simulation</b> or prototype.</p> <p><i>(E.g. In 4.1, use sequence, selection and repetition in their maths test game. In 4.2, use sequence, selection and repetition in their toy prototype.)</i></p> | 4.1, 4.2, 4.3                                 | Programmer 2                       |



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| Year 4                   |                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                               |                                    |
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| Programming              | C.4.2.2. Work with various forms of input and output.                                   | <p>The child can write a <b>program</b> to produce <b>output</b> on screen.</p> <p>The child can write a <b>program</b> in which <b>sprites</b> move on screen and/or text is displayed on screen.</p> <p><i>(E.g. In 4.1, questions should be displayed on screen.</i><br/> <i>In 4.2, toy should be shown on screen.)</i></p>                                                                                                                                                                                                                                                                       | <p>The child can write a <b>program</b> that accepts keyboard <b>input</b> and produces on-screen <b>output</b>.</p> <p>In Scratch (or similar), the child can write a <b>program</b> that displays a question, accepts typed <b>input</b> and responds in an appropriate way to what is typed. This might be used as the basis for a dialogue <b>program</b> or a simple maths game.</p> <p><i>(E.g. In 4.1, display questions on screen and accept typed input.</i><br/> <i>In 4.2, show toy on screen and have it respond to key presses.)</i></p>                                                                                                                                                                                                 | <p>The child can write a <b>program</b> that accepts keyboard or other <b>input</b> and produces <b>output</b> on screen and through speakers.</p> <p>In Scratch (or similar), the child could write a <b>program</b> that displays a question on screen or reads a question aloud, accepts a typed answer and then shows appropriate <b>output</b> on screen and plays an appropriate effect through the speakers. Alternatively, or additionally, the child could create a simple computer game, using the keyboard or mouse for <b>input</b> and the screen and speakers for <b>output</b>.</p> <p><i>(E.g. In 4.1, display questions on screen and provide some stimulus or feedback through speakers (e.g. sound effects or voice-over); accept input via typed responses or through clicking on multiple-choice elements on screen.</i><br/> <i>In 4.2, show toy on screen and include some sound effects; respond to key presses or mouse clicks on screen.)</i></p> | 4.1, 4.2                                      | Programmer 2                       |
|                          |                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                               |                                    |
| Logical thinking         | C.4.3.1. Use logical reasoning to explain how some simple algorithms work.              | <p>The child can explain a simple, sequence-based <b>algorithm</b> in their own words.</p> <p>Given an <b>algorithm</b> using a <b>sequence</b> of steps, the child can give a coherent, logically reasoned explanation of what it does and how it works. The <b>algorithm</b> could be linked to an animation or music.</p> <p><i>(E.g. In 4.1, explain the algorithm for their question and answer game.</i><br/> <i>In 4.2, explain the algorithms used in their toy.</i><br/> <i>In 4.3, discuss their compositions.)</i></p>                                                                     | <p>The child can explain an <b>algorithm</b> using <b>sequence</b> and <b>repetition</b> in their own words.</p> <p>Given an <b>algorithm</b> using both <b>sequence</b> and <b>repetition</b>, the child can give a coherent, logically reasoned explanation of what it does and how it works. <b>Repetition</b> is likely to be 'forever' or for a set number of times, although end conditions (e.g. repeat...until...) could be used.</p> <p><i>(E.g. In 4.1, explain the algorithm for their question and answer game, including repeating elements.</i><br/> <i>In 4.2, explain the algorithms used in their toy, including repeating elements.</i><br/> <i>In 4.3, discuss their compositions, including repeating patterns of notes.)</i></p> | <p>The child can explain an <b>algorithm</b> using <b>sequence</b>, <b>repetition</b> and <b>selection</b> in their own words.</p> <p>Given an <b>algorithm</b> using <b>sequence</b>, <b>repetition</b> and <b>selection</b>, the child can give a coherent, logically reasoned explanation of what it does and how it works. <b>Repetition</b> is likely to be using end conditions (e.g. repeat...until...), and <b>selection</b> is likely to be simply if...then. The <b>algorithm</b> for a simple, multi-question arithmetic test might be a good example.</p> <p><i>(E.g. In 4.1, explain the algorithm for their question and answer game, including how they have used repetition and selection.</i><br/> <i>In 4.2, explain the algorithms used in their toy, including how they have used repetition and selection.)</i></p>                                                                                                                                    | 4.1, 4.2, 4.3                                 | Logical thinker 2                  |
|                          |                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                               |                                    |
|                          | C.4.3.2. Use logical reasoning to detect and correct errors in algorithms and programs. | <p>The child can use logical reasoning to detect errors in <b>programs</b>.</p> <p>The child can give well-thought-through reasons for errors they find in <b>programs</b>. Typically, the child can find errors by reasoning logically about the <b>program</b> code, but they might also be able to use logical reasoning to identify errors in <b>programs</b> when they are executed. The <b>programs</b> do not have to be written originally by the child.</p> <p><i>(E.g. Use logical reasoning to spot errors in their own programs in 4.1 and 4.2, or in their compositions in 4.3.)</i></p> | <p>The child can use logical reasoning to detect and correct errors in <b>programs</b>.</p> <p>The child can give well-thought-through reasons for errors they find in <b>programs</b> and explain how they have fixed these. The child can find and correct errors by reasoning logically about the <b>program</b> code; they might also be able to use logical reasoning to identify errors in <b>programs</b> when executed and confirm that they have fixed these by testing the new version of their <b>program</b>. The programs do not have to be written originally by the child.</p> <p><i>(E.g. Use logical reasoning to spot and correct errors in their own programs in 4.1 and 4.2, or in their compositions in 4.3.)</i></p>            | <p>The child can give reasons for errors in <b>programs</b> and explain how they have corrected these.</p> <p>The child can give well-thought-through reasons for errors they find in <b>programs</b> and can explain, again using clear and logical reasoning, how they have fixed these. The child can find and correct errors by reasoning about the <b>program</b> code without having to run the <b>program</b>.</p> <p><i>(E.g. In 4.1 and 4.2, explain the errors in their programs and how to fix them.</i><br/> <i>In 4.3, explain the errors in their compositions and how to correct them.)</i></p>                                                                                                                                                                                                                                                                                                                                                              | 4.1, 4.2, 4.3                                 | Logical thinker 2                  |
|                          |                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                               |                                    |



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| Year 4                   |                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                   |                                        |
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| Logical thinking         | C.4.3.3. Understand computer networks including the internet.                               | <p>The child can understand that computer <b>networks</b> transmit information in a digital (binary) format.</p> <p>The child can explain that any information has to be converted to numbers before it can travel through computer <b>networks</b>. The child should understand that this conversion happens according to an agreed system or code.</p> <p><i>(E.g. In 4.3, understand that music is represented digitally on a computer.<br/>In 4.4, understand that HTML is transmitted digitally via the internet.<br/>In 4.6, understand that a process of digitisation happens in digital weather sensors.)</i></p> | <p>The child can understand that the internet transmits information as <b>packets of data</b>.</p> <p>When working online, the child can explain that the information they send and receive is automatically broken down into <b>packets of data</b>, and that these sometimes take different routes across the internet.</p> <p><i>(E.g. In 4.3, understand that music is broken down into packets for transmission over the internet.<br/>In 4.4, understand that the HTML for a web page is broken into packets for transmission over the internet.)</i></p> | <p>The child can understand that <b>packets</b> are not routinely <b>encrypted</b> on the internet.</p> <p>The child should show an awareness that their emails, requests for web pages and the contents of those pages, can be viewed by others, e.g. the school's <b>network</b> manager or internet provider. They might also show an awareness of when content is <b>encrypted</b> (e.g. passwords or <b>HTTPS web</b> traffic).</p> <p><i>(E.g. In 4.4, realise that the web pages they create are transmitted without any guarantee of privacy over the internet.<br/>In 4.5, realise that requests for, and contents of, wiki pages are transmitted without any guarantee of privacy over the internet.)</i></p> | 4.3, 4.4, 4.5                                     | Communicator                           |
|                          | C.4.4.1. Understand how networks can provide multiple services, such as the world wide web. | <p>The child can understand that the internet and the <b>web</b> are not the same.</p> <p>The child can give a clear explanation of some of the differences between the internet and the <b>web</b>.</p> <p><i>(E.g. In 4.4 and 4.5, recognise the difference between the web and the internet.)</i></p>                                                                                                                                                                                                                                                                                                                  | <p>The child can understand how the internet makes the <b>web</b> possible.</p> <p>The child can give an explanation of how requests for web pages, and the <b>HTML</b> for those pages, are transmitted via the internet.</p> <p><i>(E.g. In 4.4 and 4.5, recognise how the internet makes it possible to request and receive web pages.)</i></p>                                                                                                                                                                                                              | <p>The child can show an awareness of how <b>HTTP</b> operates.</p> <p>The child can give an explanation of how <b>HTTP</b> GET requests and responses are transmitted via the internet, and show some awareness of how <b>URLs</b> are made up.</p> <p><i>(E.g. In 4.4 and 4.5, recognise the request and response aspects of HTTP: show some understanding of how data can be sent to the web server, e.g. edit to a Wikipedia page; be familiar with 404 not-found errors.)</i></p>                                                                                                                                                                                                                                  | 4.4, 4.5                                          | Communicator                           |



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| Year 4                   |                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                               |                                    |
| Sub-strand               | Progression statement                                         | What to look for guidance<br>(Working towards expectations)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | What to look for guidance (Meeting expectations)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | What to look for guidance (Exceeding expectations)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Relevant <i>Switched on Computing</i> unit(s) | <i>Switched on Computing</i> badge |
| E-safety                 | C.4.1.1. Use technology safely, respectfully and responsibly. | <p>The child can use digital technology safely and show respect for others when working online.</p> <p>The child should know that they need to keep themselves safe when using digital technology. E.g. They should be respectful to others in online communities, such as the Scratch community, if they are allowed to use this. They should show respect when creating or remixing web pages. They should respect others' points of view when editing wiki pages.</p> <p><i>(E.g. In 4.1 and 4.2, show respect for others when using the Scratch community, if permitted to do so.<br/>In 4.4, take care to act respectfully when creating or remixing web pages.<br/>In 4.5, show respect for others' content and points of view when editing wiki pages.)</i></p>                                                                                                                                   | <p>The child can demonstrate that they can act responsibly when using computers.</p> <p>The child can act responsibly when using computers. E.g. 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.</p> <p><i>(E.g. In 4.1 and 4.2, act responsibly in developing their game and toy prototype.<br/>In 4.3, act responsibly when creating their composition.<br/>In 4.4, take care to act responsibly when creating or remixing web pages, including observing copyright.<br/>In 4.5, contribute positively to the class wiki.)</i></p>          | <p>The child can demonstrate that they can act responsibly when using the internet.</p> <p>The child can act responsibly when using the internet. E.g. They should act responsibly in participating in an online community, such as the Scratch community, if they are allowed to use this. 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 and/or Simple Wikipedia.</p> <p><i>(E.g. In 4.1 and 4.2, contribute positively to the Scratch community, if permitted to do so.<br/>In 4.4, take care to act responsibly when creating or remixing web pages, including observing copyright.<br/>In 4.5, contribute positively to the class wiki and to Simple Wikipedia.)</i></p> | 4.1, 4.2, 4.3, 4.4, 4.5                       | E-safety 2                         |
|                          | C.4.1.2. Recognise acceptable/unacceptable behaviour.         | <p>The child can recognise unacceptable behaviour when using digital technology.</p> <p>The child can identify what would be unacceptable or inappropriate behaviour when using digital technology in a range of contexts. E.g. They should know what would be unacceptable when using online communities, such as the Scratch website. They should recognise that copyright and the terms and conditions of web-based services should be respected. They should know what would be unacceptable in remixing a web page or editing a class wiki or Wikipedia.</p> <p><i>(E.g. In 4.1 and 4.2, recognise what would be unacceptable in the Scratch community.<br/>In 4.3, recognise the importance of respecting copyright.<br/>In 4.4, recognise what would be unacceptable in a remix of a web page.<br/>In 4.5, recognise what would be unacceptable edits in the class wiki or on Wikipedia.)</i></p> | <p>The child can understand the difference between acceptable and unacceptable behaviours when using digital technology.</p> <p>The child 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.</p> <p><i>(E.g. In 4.1 and 4.2, know the difference between acceptable and unacceptable behaviour in the Scratch community.<br/>In 4.4, know the difference between acceptable and unacceptable web pages and remixes, recognising what constitutes parody or fair use.<br/>In 4.5, recognise the difference between acceptable and unacceptable behaviour in a class wiki or on Wikipedia.)</i></p> | <p>The child can discuss the consequences of particular behaviours when using digital technology.</p> <p>The child 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; the use of others' original content, such as music samples or web pages; wikis, including Wikipedia.</p> <p><i>(E.g. In 4.1 and 4.2, consider the consequences of positive or negative behaviour in the Scratch community.<br/>In 4.4, consider the consequences of positive or negative behaviour when remixing web content or creating web pages.<br/>In 4.5, consider the consequences of positive or negative behaviour when editing a class wiki or Wikipedia.)</i></p>                 | 4.1, 4.2, 4.3, 4.4, 4.5                       | E-safety 2                         |



# Computing Progression Framework

## Numbering system

Subject.Year.Strand.Statement

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

| DOMAIN: DIGITAL LITERACY |                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                               |                                    |
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| LOWER KEY STAGE 2        |                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                               |                                    |
| Year 4                   |                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                               |                                    |
| Sub-strand               | Progression statement                                                                     | What to look for guidance<br>(Working towards expectations)                                                                                                                                                                                                                                                                                                                                                                                                        | What to look for guidance (Meeting expectations)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | What to look for guidance (Exceeding expectations)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Relevant <i>Switched on Computing</i> unit(s) | <i>Switched on Computing</i> badge |
| E-safety                 | C.4.1.3. Know a range of ways to report concerns and inappropriate behaviour.             | <p>Know who to talk to about concerns and inappropriate behaviour in school.</p> <p>Pupils should know to report inappropriate behaviour when using technology in school to their teacher, the <b>network</b> manager or another trusted adult, and that they can discuss any concerns they have with their teacher or other trusted adults in school.</p> <p><i>(E.g. Know to tell a teacher about any concerns or inappropriate behaviour in any units.)</i></p> | <p>Know who to talk to about concerns and inappropriate behaviour at home or in school.</p> <p>Pupils should know to report inappropriate behaviour when using technology in school to their teacher, the <b>network</b> 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.</p> <p><i>(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 4.1 and 4.2). Know that they should talk to their parents about concerns and inappropriate behaviour outside school.)</i></p> | <p>Know how to report concerns and inappropriate behaviour in a range of contexts.</p> <p>Pupils should know how to report inappropriate behaviour when using technology in school: typically this will be to their teacher, the <b>network</b> 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 to the police.</p> <p><i>(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 4.1 and 4.2). In unit 4.3, know that concerns over illegal web content can be reported to the police, but be aware that other countries have different legal codes. In unit 4.5, have some understanding of how the Wikipedia community deals with concerns and inappropriate behaviour. Know that they should talk to their parents about concerns and inappropriate behaviour outside school.)</i></p> | 4.1, 4.2, 4.3, 4.4, 4.5, 4.6                  | E-safety 2                         |
|                          | C.4.1.4. Be discerning in evaluating digital content.                                     | <p>The child can decide whether a web page is relevant for a given purpose or question.</p> <p>The child can form a judgement about whether a web page, such as a Wikipedia article, is appropriate for finding out the answer to a question they have or for a given purpose.</p> <p><i>(E.g. In 4.5, decide if a given Wikipedia page is helpful for the topic they are researching.)</i></p>                                                                    | <p>The child can decide whether digital content is relevant for a given purpose or question.</p> <p>The child 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.</p> <p><i>(E.g. In 4.5, decide if a given Wikipedia page or other content is helpful for the topic they are researching.)</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <p>The child can decide whether digital content is reliable and unbiased.</p> <p>The child can discuss whether particular content, such as a Wikipedia article or a page in a class wiki, 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.</p> <p><i>(E.g. In 4.5, decide if pages in the class wiki are reliable and presented from a neutral point of view; decide whether Simple Wikipedia pages meet the Wikipedia community's standards for authority and neutrality.)</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 4.5                                           | Searcher                           |
|                          | C.4.1.5. Understand the opportunities networks offer for communication and collaboration. | <p>The child can contribute to a shared wiki.</p> <p>The child can contribute positively to a shared project such as a class wiki.</p> <p><i>(E.g. In 4.5, contribute to the class wiki.)</i></p>                                                                                                                                                                                                                                                                  | <p>The child can work collaboratively with classmates on a shared wiki.</p> <p>The child can work collaboratively with their peers on a shared project, such as a class wiki, making useful contributions and providing feedback to others.</p> <p><i>(E.g. In 4.5, make useful contributions to the class wiki and provide feedback to others on their pages.)</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <p>The child can work collaboratively on a shared wiki, making changes to others' pages.</p> <p>The child can work collaboratively with their peers on a shared project, such as a class wiki, making useful contributions and constructive edits to pages begun by others.</p> <p><i>(E.g. In 4.5, make positive contributions to the class wiki and helpful edits to others' pages.)</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 4.5                                           | Communicator                       |

# Computing Progression Framework

## Numbering system

Subject.Year.Strand.Statement

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### DOMAIN: INFORMATION TECHNOLOGY

#### LOWER KEY STAGE 2

#### Year 4

| Sub-strand       | Progression statement                                                                                               | What to look for guidance<br>(Working towards expectations)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | What to look for guidance (Meeting expectations)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | What to look for guidance (Exceeding expectations)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Relevant <i>Switched on Computing</i><br>unit(s) | <i>Switched on<br/>Computing</i> badge |
|------------------|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|----------------------------------------|
| Creating content | C.4.1.1. Select, use and combine a variety of software (including internet services) on a range of digital devices. | <p>The child can use a range of <b>programs</b> on a computer.</p> <p>The child can use a range of <b>software</b> on laptop or tablet computers, possibly with some support as appropriate. <b>Software</b> might include audio editing, music composition, web browsers, text editors, spreadsheets and presentation <b>software</b>.</p> <p><i>(E.g. Use music software in 4.3, use web browsers in 4.4 and 4.5, use a text editor in 4.4, use spreadsheet and presentation software in 4.6.)</i></p>                                                                                                                                                        | <p>The child can use and combine a range of <b>programs</b> on a computer.</p> <p>The child can use multiple <b>programs</b> on laptop or tablet computers to achieve particular goals. E.g. They might record audio and then use this as samples in a composition; create <b>HTML</b> content in a text editor and preview it in a browser; analyse <b>data</b> in a spreadsheet and then create a presentation to show the results of their analysis.</p> <p><i>(E.g. Combine composition and audio editing software in 4.3, combine a text editor and web browser in 4.4, combine spreadsheet and presentation software in 4.6.)</i></p>                                                                                                                                                                                                                                   | <p>The child can use and combine a range of <b>programs</b> on multiple devices.</p> <p>The child can use multiple <b>digital devices</b> (such as tablets and laptops or digital cameras and laptops) to achieve particular goals. The devices might include web <b>servers</b>, allowing them to use cloud-based applications. E.g. They might use portable audio recorders to collect audio samples and then laptop-based sequencing <b>software</b> to use these in their own composition; a laptop text editor and a web <b>server</b> to create and host a web page; a digital weather station and a laptop spreadsheet <b>program</b> to collect and record weather <b>data</b>.</p> <p><i>(E.g. Use audio recorders, computers and web-based applications in 4.3, use desktop and web-based applications in 4.4, use weather sensors, desktop computers and web-based services in 4.6.)</i></p>                                                                                                                                                                                                                                                                                     | 4.3, 4.4, 4.5, 4.6                               | Content creator 2                      |
|                  | C.4.1.2. Design and create a range of programs, systems and content that accomplish given goals.                    | <p>The child can design and create content on a computer.</p> <p>The child can plan and execute a project in which they use <b>software</b> on a laptop or tablet to create digital content, with appropriate support if necessary. E.g. They could plan and compose original music using sequencing software; plan and create a web page; plan how they could contribute to a shared wiki and then do so; plan and create a presentation about the weather.</p> <p><i>(E.g. In 4.3, compose original music. In 4.4, create web content through writing HTML code. In 4.5, contribute content to a wiki. In 4.6, create a presentation on the weather.)</i></p> | <p>The child can design and create content on a computer in response to a given goal.</p> <p>With a given goal, the child can plan and execute a project in which they use <b>software</b> on a laptop or tablet to create digital content with some degree of independence. E.g. They could plan and compose original music using sequencing software; plan and create a web page; plan how they could contribute to a shared wiki and then do so; plan and create a presentation about the weather. They should evaluate how effectively they have met the requirements of the original goal.</p> <p><i>(E.g. In 4.3, compose original music for a particular purpose. In 4.4, create web content through writing HTML code for a particular purpose. In 4.5, contribute content to a wiki for a particular purpose. In 4.6, create a presentation on the weather.)</i></p> | <p>The child can design and create content on a computer in response to a given goal, paying attention to the needs of a known audience.</p> <p>With a given goal and a known audience in mind, the child can plan and execute a project in which they use <b>software</b> on a laptop or tablet to create digital content with some degree of independence. E.g. They could plan and compose original music using sequencing software; plan and create a web page; plan how they could contribute to a shared wiki and then do so; plan and create a presentation about the weather. They should evaluate how effectively they have met the requirements of the original goal and the needs of the intended audience.</p> <p><i>(E.g. In 4.3, compose original music for a particular purpose and with a particular audience in mind. In 4.4, create web content through writing HTML code for a particular purpose and with a particular audience in mind. In 4.5, contribute content to a wiki for a particular purpose and with a particular audience in mind; contribute to Simple Wikipedia. In 4.6 create a presentation on the weather with a particular audience in mind.)</i></p> | 4.3, 4.4, 4.5, 4.6                               | Content creator 2                      |
|                  | C.4.1.3. Collecting, analysing, evaluating and presenting data and information.                                     | <p>The child can collect <b>data</b>.</p> <p>The child can use computers to collect numerical <b>data</b> with appropriate support, if necessary. E.g. They could collect and present <b>data</b> about the weather over a period of time.</p> <p><i>(E.g. In 4.3, record audio samples. In 4.6, record weather data.)</i></p>                                                                                                                                                                                                                                                                                                                                  | <p>The child can collect and present <b>data</b>.</p> <p>The child can use computers to collect numerical <b>data</b> and present this to an audience. E.g. They could collect and present <b>data</b> about the weather over a period of time. They should be able to do this with a degree of independence.</p> <p><i>(E.g. In 4.3, record and use audio samples. In 4.6, collect weather data and make a presentation about the weather.)</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                          | <p>The child can collect, analyse and present <b>data</b>.</p> <p>The child can use computers to collect numerical <b>data</b>, analyse this (typically in a spreadsheet) and present this to an audience. E.g. They could collect, analyse and present <b>data</b> about the weather over a period of time. They should be able to do this with a degree of independence.</p> <p><i>(E.g. In 4.6, collect weather data, use this to look for trends or patterns, and make a presentation about the weather.)</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 4.3, 4.6                                         | Content creator 2                      |

# Computing Progression Framework

## Numbering system

Subject.Year.Strand.Statement

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### DOMAIN: INFORMATION TECHNOLOGY

#### LOWER KEY STAGE 2

#### Year 4

| Sub-strand | Progression statement                                           | What to look for guidance<br>(Working towards expectations)                                                                                                                                                                                                                                                                                                                                                                                    | What to look for guidance (Meeting expectations)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | What to look for guidance (Exceeding expectations)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Relevant <i>Switched on Computing</i><br>unit(s) | <i>Switched on<br/>Computing</i> badge |
|------------|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|----------------------------------------|
| Searching  | C.4.2.1. Use search technologies effectively.                   | <p>The child can search for information within a single site.</p> <p>The child can use browser- and site-specific tools to locate particular information on a web page or within a website such as Wikipedia.</p> <p><i>(E.g. In 4.5, find information on Wikipedia.)</i></p>                                                                                                                                                                  | <p>The child can use a standard search engine to find information.</p> <p>The child can use a common search engine (such as Google with <b>safe search mode</b> locked in place) effectively, to search for particular information on the <b>web</b>, such as answers to questions they identify in a research project.</p> <p><i>(E.g. In 4.5, use Google to support their wiki research project.)</i></p>                                                                                                                                                      | <p>The child can use filters to make more effective use of a standard search engine.</p> <p>The child can use a common search engine (such as Google with <b>safe search mode</b> locked in place) effectively, to search for particular information on the <b>web</b>, such as answers to questions they identify in a research project. They should use built-in search tools to filter their results, such as by time, location or reading level.</p> <p><i>(E.g. In 4.5, use filters to make their use of Google in support of their research project more effective.)</i></p> | 4.5 and across the curriculum.                   | Searcher                               |
|            | C.4.2.2. Appreciate how search results are selected and ranked. | <p>The child can understand that search engines select pages according to keywords found in the content.</p> <p>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're searching.</p> <p><i>(E.g. In 4.6, know how to search for content in Wikipedia.)</i></p> | <p>The child can understand that search engines rank pages according to relevance.</p> <p>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.</p> <p><i>(E.g. In 4.6, appreciate how Wikipedia's search engine ranks results.)</i></p> | <p>The child can understand that search engines use a <b>cached</b> copy of the crawled <b>web</b> to select and rank results.</p> <p>The child can explain how a search engine creates an index from a <b>cached</b> copy of the <b>web</b> and uses this to select and rank results. The child might also show an awareness of the Page Rank <b>algorithm</b> in which results are ranked according to the number and quality of in-bound links.</p> <p><i>(To be assessed across the curriculum.)</i></p>                                                                       | 4.6                                              | Searcher                               |