**Computing-Long Term Plan**

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| ***Nursery and Reception*** | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
| Key Skills ([Sheffield elearning Service](http://sheffieldclc.net/sheffield-primary-computing-progression-framework/)) | Ensure children’s ‘***school readiness***’ and ‘***give them a broad range of knowledge and skills that provide the right foundation for good future progress through school and life’*** - Statutory Framework for EYFS September 2021.  Computational Thinking ideas Rationale from Barefoot Computing [here](https://www.barefootcomputing.org/docs/default-source/default-document-library/computational-thinking-overview-eng6672ffdbdcfc6c779083ff0100ba3f46.pdf?sfvrsn=438e93ea_0) | | | | | |
|  | **Programmable toys** | | | | | |
| - Use different digital devices.  - Recognise that you can access  content on a digital device.  - Use a mouse, touchscreen or  appropriate access device to target  and select options on screen.  - Recognise a selection of digital  devices.  - Recognise the basic parts of a  computer, e.g. mouse, screen,  keyboard.  - Select a digital device to fulfil a  specific task, e.g. to take a photo. | **Barefoot Computing-**  [Awesome Autumn](https://www.barefootcomputing.org/earlyyears)  **Technology around us**  <https://www.ilearn2.co.uk/computerdiscoveryfree.html>  <http://code-it.co.uk/wp-content/uploads/2015/05/bankplan.pdf>  <http://code-it.co.uk/wp-content/uploads/2015/05/supermarketplan.pdf>  <http://www.crickweb.co.uk/Early-Years.html>  <https://www.nurseryworld.co.uk/News/article/ict-in-role-play-check-it-out> | **Barefoot Computing-**  [Winter Warmers](https://www.barefootcomputing.org/earlyyears) | **Barefoot Computing-**  [Busy Bodies](https://www.barefootcomputing.org/earlyyears)  **Music creation**  <https://www.ilearn2.co.uk/freeyear1musiccreation.html/>  <https://springroll-tc.pbskids.org/music-maker/d0f261dffc3c8f713fa5a22bb99d7f9afd04cb56/release/index.html>  <https://musiclab.chromeexperiments.com/Voice-Spinner/> | **Barefoot Computing -**  [Springtime](https://www.barefootcomputing.org/earlyyears)  **Cooking**  Jam sandwich  <http://swaygrantham.co.uk/wp-content/uploads/2016/09/JamSandwichAlgorithm.pdf>  Pizza  <https://www.barefootcomputing.org/docs/default-source/at-home/pizza_party_activity.pdf?sfvrsn=154d91ea_2> | **Barefoot Computing-**  [Summer Fun](https://www.barefootcomputing.org/earlyyears)  **Other ideas**  [Lego Building](https://www.barefootcomputing.org/resources/lego-building-algorithm-activity)  Steam Park  [Crazy](https://www.barefootcomputing.org/resources/crazy-character-algorithms)  [Characters](https://www.barefootcomputing.org/resources/crazy-character-algorithms)  [Head, Shoulder, Knees and Toes](https://www.barefootcomputing.org/resources/head-shoulders-knees-and-toes-algorithms) | **Barefoot Computing-**  [Boats Ahoy](https://www.barefootcomputing.org/earlyyears)  **Art**  <https://www.j2e.com/jit5>  [Art and algorithms](http://www.helloruby.com/play/16) |

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| Key Stage 1 | NC Objectives |
|  | Pupils should be taught to:   * understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instruction * create and debug simple programs * use logical reasoning to predict the behaviour of simple program * use technology purposefully to create, organise, store, manipulate and retrieve digital content * recognise common uses of information technology beyond school * use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. |

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| **Year 1** | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
| Key Skills (Sheffield elearning Service) | IT-What is a computer  (Keep it short, select most relevant parts of unit. Add E-safety) | Programming- Unplugged | Programming- Physical | IT-digital imagery (Cross curricular) | Lego Spike  Lego League | IT-Presentation(Cross curricular) |
| - Recognise a range of digital  devices.  - Select a digital device to fulfil a  specific task, e.g. to take a photo.  - Name a range of digital devices,  e.g. laptop, phone, games console.  - Log on to the school computer /  unlock the school tablet with  support.  - Identify the basic parts of a  computer, e.g. mouse, keyboard,  screen.  - Use a suitable access device  (mouse, keyboard, touchscreen,  switch) to access and control an  activity on a computer.  - Open key applications  independently.  - Save and open files with support.  - Add an image to a document  from a given folder/source with  support. | **Technology Around Us**  <https://teachcomputing.org/curriculum/key-stage-1/computing-systems-and-networks-technology-around-us>  <https://www.abcya.com/games/find_the_tech>  Hello Ruby keyboard  <https://www.helloruby.com/play/12>  Paper computer  <http://www.helloruby.com/play/29>  Project Evolve | **Barefoot Computing- dancing**  [https://curriculum.code.org/hoc/unplugged/4/](https://l.facebook.com/l.php?u=https%3A%2F%2Fcurriculum.code.org%2Fhoc%2Funplugged%2F4%2F%3Ffbclid%3DIwAR2rgsYBNpDD9QScqpv5lXHVFa5pBt0YjReqFN-e2b670mhfWBR3ySF-NAo&h=AT17w3QZ_pbbn9r4cWCDqMEb-211IeGOa8V7tAIF4WUyVe82goKo5ZQw2TTC8oBUwHdmbUMeERwRz8yCerpjoFSGbxDCNnTVvyf0Ep3p5Be3JbsGzOK6-M0FFS7qBEncVZLBLnV8gS7CcWbGqDdMHpprDRdalr9OVK8I6G99jQ8)  [https://www.barefootcomputing.org/resources/dance-move-algorithms](https://www.barefootcomputing.org/resources/dance-move-algorithms?fbclid=IwAR2omEt1-pLQ6NZYK_fFl2UDSeHDUmK9vQqDBWRThsiB8Fh5TAkuc-dkSBw)  [https://www.barefootcomputing.org/resources/decomposition-unplugged-activity-k](https://www.barefootcomputing.org/resources/decomposition-unplugged-activity-ks1?fbclid=IwAR2kPlRQpCdYfaSujyHKdyZZklH8aYLe-YK3b7IsG2HOFocvFNQaWUHDgvc)  <https://curriculum.code.org/csf-18/coursea/3/> | **Moving a robot**  <https://www.bbc.co.uk/bitesize/topics/z3tbwmn/articles/z3whpv4>  <https://teachcomputing.org/curriculum/key-stage-1/programming-a-moving-a-robot>  [Beebot emulator](https://beebot.terrapinlogo.com/)  App  [Beebot](https://apps.apple.com/gb/app/bee-bot/id500131639)  Barefoot Computing  <https://www.barefootcomputing.org/resources/bee-bots-basics-activity> | **Digital Painting**  <https://teachcomputing.org/curriculum/key-stage-1/creating-media-digital-painting>  <https://www.j2e.com/jit5>  [Tuxpaint.org](http://www.tuxpaint.org/)  <https://www.tate.org.uk/kids/games-quizzes/tate-paint>  Mouse skills |  | **Digital Writing**  <https://teachcomputing.org/curriculum/key-stage-1/creating-media-digital-writing>  Combine image and text [https://www.j2e.com/jit5#mix](https://l.facebook.com/l.php?u=https%3A%2F%2Fwww.j2e.com%2Fjit5%3Ffbclid%3DIwAR0ADsy5JcbOn1suj0wUSPhgLY1bAIhgXj6yq0ARUhUreYoMzbdnMWqXCe4%23mix&h=AT2iwQAViYwUOQLGMEhhIq5jq9z6unPh7iAhCENCBr9PFQTr1-Hf8WafSVSvZhi2EGLM8vdOrmcrJKU0olRrgklGAjqk3ScMGE2JjJvwe_sZeHV84DXeL1Wu7mO2K4ykR0jK_whkV4DBlpa7PDYtG5BVjQ&__tn__=-UK-R&c%5B0%5D=AT2Fu-rZiA5HBBH1rwVkspI6LKhmbkHdcOMbXs1vtOWOdbZb9i3xzfCjrDyBxNeMkpMlhkU6UZKn5iHkboDqntmRiXotlxn30UJZaXlCxL3N5A6XWV8Ezcx1OGucyTipomA7s-vhphfGQ6f85ltTkBlnT-Bult2Kk_A)  Book creator  Typing skills  Project Evolve |
| **Year 2** | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
| Key Skills (Sheffield elearning Service) | IT-**Technology in the world**  *(Select most useful parts and keep it as a short unit)*  *E-safety* | Programming- **Introduction to Animation-**Scratch Jr | IT-**Digital Photographs** *Cross curricular*- | IT-**Making music** *Cross curricular* | Lego Spike | IT*-***Create an ebook linked to topic-**Book creator |
| - Recognise what a computer is  (input > process > output).  - Recognise that a range of digital  devices contain computers, e.g.  phone, games console, smart  speaker.  - Explain what the basic parts of a  computer are used for.  - Identify and use input devices,  e.g. mouse, keyboard; and output  devices, e.g. speakers, screen.  - Open key applications  independently.  - Save and open files to/from a  given folder.  - Add an image to a document  from a given folder/source.  - Resize an image in a document.  - Highlight text and use the arrow  keys.  - Capture media independently  (e.g. take photos, record audio). | <https://teachcomputing.org/curriculum/key-stage-1/computing-systems-and-networks-it-around-us>  <https://projectevolve.co.uk/toolkit/resources/content/privacy-and-security/early-years-7/i-can-explain-how-some-people-may-have-devices-in-their-homes-connected-to-the-internet-and-give-examples-e-g-lights-fridges-toys-televisions/?from=years> | [**https://teachcomputing.org/curriculum/key-stage-1/programming-b-introduction-to-animation**](https://teachcomputing.org/curriculum/key-stage-1/programming-b-introduction-to-animation)  **Scratch Jr**  Barefoot Computing Tinkering in Scratch Jr  <https://www.barefootcomputing.org/resources/scratchjr-tinkering-activity>  Scratch Jr Knock Knock  <https://www.barefootcomputing.org/resources/scratchjr-knock-knock-joke-activity>  [Scratch Jr twinkl planning](https://content.twinkl.co.uk/resource/09/79/TP-I-0105-PlanIt-Computing-Year-1-Programming-with-ScratchJr-Planning-Overview_ver_1.pdf?__token__=exp=1591131128~acl=%2Fresource%2F09%2F79%2FTP-I-0105-PlanIt-Computing-Year-1-Programming-with-ScratchJr-Planning-Overview_ver_1.pdf%2A~hmac=e637b10cc7aaf4c89f9651d9d107e8682fd8ae37b221e30b34ce52aad70d0a51) | <https://teachcomputing.org/curriculum/key-stage-1/creating-media-digital-photography>  <https://www.kapowprimary.com/subjects/computing/key-stage-1/year-1/digital-imagery/>  Web [Book Creator](https://bookcreator.com) free  App free if already purchased | <https://teachcomputing.org/curriculum/key-stage-1/creating-media-making-music>  [Song Maker](https://musiclab.chromeexperiments.com/Song-Maker/)  [Incredibox](https://www.incredibox.com/demo/v4)  <http://www.isleoftune.com/> |  | Searching effectively and safely  <https://swiggle.org.uk/>  Digital Literacy  <https://projectevolve.co.uk/toolkit/resources/years/year-two/managing-online-information/>  **Book Creator***-Cross curricular*  <https://www.commonsense.org/education/lesson-plans/using-technology-to-enhance-an-all-about-me-book#1>  <https://www.commonsense.org/education/lesson-plans/creating-nonfiction-books-about-animals-in-book-creator> |

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| Key Stage 2 | NC Objectives |
|  | Pupils should be taught to:   * design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts * use sequence, selection, and repetition in programs; work with variables and various forms of input and out * use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs * understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration * use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content * select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information * use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact |

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| **Year 3** | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
| Key Skills (Sheffield elearning Service) | IT-Presenting information- **Desktop publishing**  *Cross curricular links*  Adobe Creative Express  Canva | Programming- **Sequencing** | Programming- **Events and actions** | E-Safety  Branching databases  Cross curricular links | Lego Spike  Lego League | IT-**Stop-frame animation-**  *Cross curricular links* |
| - Describe what a computer is  (input > process > output).  - Explain the difference between  input and output devices on a  computer.  - Know where to save and open  files (e.g. in shared folder).  - Save files with appropriate  names.  - Use a keyboard effectively to type  in text.  - Use left-, right- and double-click  on the mouse.  - Add an image to a document  from the internet.  - Resize and move an image in a  document.  - Use a search engine to find  simple information.  - Recognise that school computers  are connected (if using PCs).  <https://zty.pe> | <https://teachcomputing.org/curriculum/key-stage-2/creating-media-desktop-publishing>  <https://projectevolve.co.uk/toolkit/resources/years/year-three/copyright-and-ownership/>  <https://projectevolve.co.uk/toolkit/resources/years/year-three/managing-online-information/> | Screen free  <https://curriculum.code.org/csf-18/coursec/4/>  Scratch  Tutorials  <https://scratch.mit.edu/projects/editor/?tutorial=getStarted>  <https://csfirst.withgoogle.com/c/cs-first/en/animate-a-name/animate-a-name/animate-a-name.html>  <https://teachcomputing.org/curriculum/key-stage-2/programming-a-sequence-in-music> | <https://curriculum.code.org/csf-20/coursec/14/>  <https://teachcomputing.org/curriculum/key-stage-2/programming-b-events-and-actions>  <https://studio.code.org/s/coursec-2020/stage/15/puzzle/1> | https://teachcomputing.org/curriculum/key-stage-2/data-and-information-branching-databases |  | <https://csfirst.withgoogle.com/c/cs-first/en/art/animation/introduction-to-animation.html>  <https://teachcomputing.org/curriculum/key-stage-2/creating-media-animation>  <https://www.commonsense.org/education/top-picks/websites-and-apps-for-making-videos-and-animation>  <https://editor.wickeditor.com/>  <https://www.piskelapp.com/>  <https://brush.ninja>  <https://www.ilearn2.co.uk/freeyear4animation.html/> |

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| **Year 4** | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
| Key Skills (Sheffield elearning Service) | IT-**Networks- The Internet**  **E-Safety** | IT-**audio editing (Could use GarageBand, Anchor FM or Band Lab for this)** | Programming- **Repetition-Logo** | Programming- **Repetition**  Scratch | SPIKE  LEGO League | IT-**Photo editing**(Cross curricular) or **Comic Creation** |
| - Recognise that you can organise  files using folders.  - Explain what a good file name  would look like.  - Delete and move files.  - Use key parts of a keyboard  effectively, e.g. shift, arrow keys,  delete).  - Know how to copy and paste text  or images in a document.  - Crop an image and apply simple  filters.  - Use a search engine to find  specific information.  - Recognise that school computers  are connected | [Computing systems and networks – The Internet](https://teachcomputing.org/curriculum/key-stage-2/computing-systems-and-networks-the-internet) (Skip lesson 1)  [https://projectevolve.co.uk/toolkit/resources/years/4/managing-online-information](https://projectevolve.co.uk/toolkit/resources/years/4/managing-online-information/)  Fake websites  <https://x-ray-goggles.mouse.org/> (Cross curricular) | <https://teachcomputing.org/curriculum/key-stage-2/creating-media-audio-editing>  <https://projectevolve.co.uk/toolkit/resources/years/year-three/copyright-and-ownership/>  <https://audiomass.co>  <https://anchor.fm/>  Garageband | **Logo**  <https://teachcomputing.org/curriculum/key-stage-2/programming-a-repetition-in-shapes>  <https://www.calormen.com/jslogo/> | [**https://teachcomputing.org/curriculum/key-stage-2/programming-b-repetition-in-games**](https://teachcomputing.org/curriculum/key-stage-2/programming-b-repetition-in-games)  [**https://projects.raspberrypi.org/en/projects/flower-generator**](https://projects.raspberrypi.org/en/projects/flower-generator)  or  **Rapid router**  [**https://www.codeforlife.education/teach/materials/**](https://www.codeforlife.education/teach/materials/)  [**https://www.stem.org.uk/resources/elibrary/resource/36164/session-one-recap-using-simple-repeat-loop**](https://www.stem.org.uk/resources/elibrary/resource/36164/session-one-recap-using-simple-repeat-loop)  **Code.org**  [**https://studio.code.org/s/coursec-2020/stage/7/puzzle/1**](https://studio.code.org/s/coursec-2020/stage/7/puzzle/1) |  | [**https://teachcomputing.org/curriculum/key-stage-2/creating-media-photo-editing**](https://teachcomputing.org/curriculum/key-stage-2/creating-media-photo-editing)  [**https://pixlr.com/x**](https://pixlr.com/x/)  [**Snapseed**](https://apps.apple.com/us/app/snapseed/id439438619)  **Adobe Photoshop**  <https://projectevolve.co.uk/toolkit/resources/content/managing-online-information/7-11/i-can-describe-how-to-search-for-information-within-a-wide-group-of-technologies-and-make-a-judgement-about-the-probable-accuracy-e-g-social-media-image-sites-video-sites/?from=years>  **Or**  <https://www.ilearn2.co.uk/comiccreationteacherfree.html>  <https://www.makebeliefscomix.com/Comix/> |
| DL  <https://projectevolve.co.uk/toolkit/years/4/>  <https://digital-literacy.org.uk/curriculum-overview/year4/year-4-sol-(1).aspx/> |  |  |  |  |  | **Self-image and identity**  I can describe ways in which people might make themselves look different online.  **Copyright and ownership**  When searching on the internet for content to use, I can explain why I need to consider who owns it and whether I have the right to reuse it. |