**Computing-Long Term Plan**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ***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 accesscontent on a digital device.- Use a mouse, touchscreen orappropriate access device to targetand select options on screen.- Recognise a selection of digitaldevices.- Recognise the basic parts of acomputer, e.g. mouse, screen,keyboard.- Select a digital device to fulfil aspecific 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) |

|  |  |
| --- | --- |
| 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.
 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **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 SpikeLego League | IT-Presentation(Cross curricular) |
| - Recognise a range of digitaldevices.- Select a digital device to fulfil aspecific 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 withsupport.- Identify the basic parts of acomputer, e.g. mouse, keyboard,screen.- Use a suitable access device(mouse, keyboard, touchscreen,switch) to access and control anactivity on a computer.- Open key applicationsindependently.- Save and open files with support.- Add an image to a documentfrom a given folder/source withsupport. | **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 creatorTyping skillsProject 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 digitaldevices contain computers, e.g.phone, games console, smartspeaker.- Explain what the basic parts of acomputer are used for.- Identify and use input devices,e.g. mouse, keyboard; and outputdevices, e.g. speakers, screen.- Open key applicationsindependently.- Save and open files to/from agiven folder.- Add an image to a documentfrom a given folder/source.- Resize an image in a document.- Highlight text and use the arrowkeys.- 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) freeApp 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> |

|  |  |
| --- | --- |
| 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
 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **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 ExpressCanva | Programming- **Sequencing** | Programming- **Events and actions** | E-SafetyBranching databasesCross curricular links | Lego SpikeLego League | IT-**Stop-frame animation-***Cross curricular links* |
| - Describe what a computer is(input > process > output).- Explain the difference betweeninput and output devices on acomputer.- Know where to save and openfiles (e.g. in shared folder).- Save files with appropriatenames.- Use a keyboard effectively to typein text.- Use left-, right- and double-clickon the mouse.- Add an image to a documentfrom the internet.- Resize and move an image in adocument.- Use a search engine to findsimple information.- Recognise that school computersare 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/>ScratchTutorials<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/> |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **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 | SPIKELEGO League | IT-**Photo editing**(Cross curricular) or **Comic Creation** |
| - Recognise that you can organisefiles using folders.- Explain what a good file namewould look like.- Delete and move files.- Use key parts of a keyboardeffectively, e.g. shift, arrow keys,delete).- Know how to copy and paste textor images in a document.- Crop an image and apply simplefilters.- Use a search engine to findspecific information.- Recognise that school computersare 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/](https://digital-literacy.org.uk/curriculum-overview/year4/year-4-sol-%281%29.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. |