



Computing Long Term Plan

Ferryhill Station Primary School

Computing Curriculum

Planning Progression and

Resources

2021/22



KS1 (Objectives in bold)	Class 2 Overview	Autumn	Spring	Summer
<p>Computer Science</p>	<p>I can understand what algorithms are and how they are implemented as programs on digital devices and that they understand that programmes execute by following precise and unambiguous instructions.</p> <p>I can use logical reasoning to predict the behaviour of simple programs</p> <p>I can create simple programs</p> <p>I can debug simple programs</p>	<p>I can use logical reasoning to predict the behaviour of simple programs (A)</p> <ul style="list-style-type: none"> Predict the behaviour of a simple programmed bee bot. <p>I can create simple programs (B)</p> <ul style="list-style-type: none"> Create a program for a bee bot to follow. Plan this and carry it out. Increase the complexity for different abilities e.g. distance/number of turns. GD – Create a sequence using a probot (degrees). Link to maths and 2D shapes. <p>I can debug simple programs (A)</p> <ul style="list-style-type: none"> Identify and correct errors in bee bot programs. Improve bee bot program e.g. make the route more efficient/use less commands. Make a simple set of instructions. 	<p>I can understand what algorithms are and how they are implemented as programs on digital devices and that they understand that programmes execute by following precise and unambiguous instructions. (B)</p> <ul style="list-style-type: none"> Children follow simple instructions and understand this as an algorithm. Create a set of instructions for another person to follow e.g. verbally asking someone to draw a set of shapes on a page. Children write a simple algorithm for something they do in everyday life e.g. putting on their jumper, taking a photo on an ipad etc. 	<p>I can understand what algorithms are and how they are implemented as programs on digital devices and that they understand that programmes execute by following precise and unambiguous instructions.</p> <ul style="list-style-type: none"> Increase the complexity of the algorithms used, across a range of devices and apps. (A) Use Scratch, Hour of Code website. (A) Introduction to creating simple animation using Scratch Jnr i.e. move a character from one position to another. Be able to explain their program. (B)
<p>Online Safety</p>	<p>I can 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</p>	<p>I can use technology safely and respectfully (A)</p> <ul style="list-style-type: none"> Can explain which websites, apps and games are safe and appropriate to use. Knows about PEGI games ratings <p>(A) Going Places Safely – Common Sense Media https://www.commonsensemedia.org/educators/lesson/going-places-safely-k-2</p> <p>(B) Smartie the penguin http://www.childnet.com/resources/smartie-the-penguin</p>	<p>I can keep personal information private when using technology.</p> <ul style="list-style-type: none"> Knows that not everyone is who they say they are on the Internet. Can explain what information is private and should not be shared with strangers Knows that apps and programs can share personal data, and that settings can be used to control it <p>(A) Jessie and Friends Think U Know – Ep1 and 2 https://www.thinkuknow.co.uk/professionals/resources/jessie-and-friends/</p> <p>(B) CEOP - Hector's World</p>	<p>I can ask for help if they feel unsure about any online content or contact and who to ask</p> <ul style="list-style-type: none"> Knows to ask a trusted adult if they are worried or upset about anything they see on the internet Knows how to ask for help online. <p>(A) Digi Duck - http://www.kidsmart.org.uk/teachers/ks1/sourcesduck/projet/digiduck-ebook.pdf</p> <p>(B) Lee and Kim – CEOP https://www.thinkuknow.co.uk/professionals/resources/lee-and-kim/</p>

<p style="text-align: center;">I T</p> <p style="text-align: center;">(Use this to fit into subjects across the curriculum)</p>	<p>I can use technology purposefully to create, organise, store, manipulate and retrieve digital content</p>		Progression of Skills	
		<p>I can use technology purposefully to create, organise and store digital content (A/B)</p>	<p>I can use technology purposefully to retrieve and manipulate digital content (A/B)</p>	<p>Use this term to address any gaps from assessments.</p>
		<p>Create digital content on a simple program e.g. Paint / Drawing</p> <p>Navigate a screen with a mouse.</p>	<p>Open a piece of work from the previous lessons and improve it (save, print out work, edit and redraft).</p>	
		<p>Create a meaningful piece of writing in Word/Publisher using the space bar for separate words, e.g. final draft of work, creating a recount from a visit.</p>	<p>Open a piece of work and manipulate it e.g. font/colour etc.</p>	
		<p>Create a piece of writing (Word/Publisher) and add in photographs/images to that file.</p>	<p>Manipulate work across a range of devices e.g. Book creator, Keynote, PowerPoint</p>	

CS Resources

Autumn

<https://play.kahoot.it/#/k/ea695e81-b3b2-450a-8fd7-c47b620b77fa>
bee bot knowledge)

Making predictions (initial assessment for

Bee bot planning (see folder on shared area).

Spring

<http://code-it.co.uk/ks1/crane/humancrane> Human Crane (see folder on shared area)

Summer

<http://code-it.co.uk/sjmovinggame> Scratch Junior

<http://code-it.co.uk/pathway> Pathway task using Scratch Junior (see folder on shared area)

KS2 (Objectives in bold) (red – covered in y5/6)	Class 3	Autumn	Spring	Summer
<p>Computer Science</p>	<p>I can design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts</p> <p>I can use sequence, selection, and repetition in programs; work with variables and various forms of input and output</p> <p>I can use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs</p> <p>I can 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</p>	<p>I can use sequence (A)</p> <ul style="list-style-type: none"> Sequence simple directions e.g. bee bot (for emerging y3) and Scratch (y3/4). Sequence a PowerPoint (see IT planning) with animations. Sequence a PowerPoint with multiple animations and pages. <p>Hour of Code https://studio.code.org/flappy/1</p> <p>I can collaborate and communicate using technology. (B)</p> <ul style="list-style-type: none"> QR codes treasure hunt. Create messages to decode at a later stage <p>I understand the basic workings of the internet (B)</p> <ul style="list-style-type: none"> Can explain how data is broken into packs Can explain how packets are routed around the internet 	<p>I can solve problems in writing programs by decomposing them into smaller parts (A)</p> <ul style="list-style-type: none"> Create a simple animation in scratch. SCRATCH – Simple animation or Dressing up game http://code-it.co.uk/scratch/dressingup/dressingupoverview Create complex programs, e.g. within the animation, create sounds/speech/movement. Create a simple interactive activity in Scratch. <p>I can use selection and repetition (B)</p> <ul style="list-style-type: none"> Use simple repetition e.g. create loops in Scratch making 2D shapes. Scratch – Drawing shapes http://code-it.co.uk/goldshape/ up to basic procedures <p>Scratch – Shapes Continuing basic work started in Y3 but to include work on procedures and nested loops. http://code-it.co.uk/goldshape/</p> <ul style="list-style-type: none"> Create moving animation in Scratch (walking boy) using the keys. Create an interactive game with a moving object, e.g. Kodu, build a simple world and control using keys. Pro Bot – Using loops and nested loops to create geometric patterns 	<p>I can debug programs (B)</p> <ul style="list-style-type: none"> Debug sequential apps. Debug animations created in Scratch. <p>I can explain how simple algorithms work and detect and correct errors in them. (A/B)</p> <ul style="list-style-type: none"> Annotate a simple screenshot to explain how it works (Scratch). Longer program for GD.
<p>Online Safety</p>	<p>I can use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact</p>	<p>I can understand the importance of using technology respectfully and responsibly</p> <ul style="list-style-type: none"> Knows that pictures and text shared on an app can end up with strangers (A) <p>Google – Be an Internet Legends Series of lessons about many aspects of being safe online. https://beinternetlegends.withgoogle.com/en_uk/toolkit</p>	<p>I can understand the importance of using technology safely</p> <ul style="list-style-type: none"> Can use a simple password Is able to reliably use a password to access resources <p>(B) Smart Crew Videos and lesson resources. Covering a range of areas) Video :- http://www.childnet.com/resources/the-adventures-of-kara-winston-and-the-smart-crew</p>	<p>I can appreciate how search results are ranked and evaluate digital content. (A/B)</p> <ul style="list-style-type: none"> Can use a search engine choosing appropriate key words to find information Effectively use a search engine with multiple criteria e.g. AND , OR to refine their search Can select useful websites following a simple web search Be able to compare websites when finding information

		<p>Cyber-Detectives – Teacher led lesson where children solve a mystery. https://esafety.gov.au/education-resources/classroom-resources/cybersmart-detectives</p> <ul style="list-style-type: none"> Is aware of their digital footprint and knows what has been posted and typed cannot be undone (B) <p>This is Me, Common Sense Media, My online presence https://www.commonsense.org/education/digital-citizenship/lesson/this-is-me</p>	<p>(A) Be able to log in and out of websites used at school e.g. Lexia Time Tables rockstars etc. Password Power Up Common Sense Media https://www.commonsense.org/education/digital-citizenship/lesson/password-power-up</p>	<p>Know what the key words are to enter into a Search engine to find information they want.</p> <p>Consider using first few lessons from Google https://www.google.com/insidesearch/search/education/lessons.html</p>
<h1>I T</h1>	<p>I can 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</p>		<p>Progression of Skills</p>	
		<p>I can create content that accomplishes given goals. A/B</p>	<p>I can present information A/B</p>	<p>I can select, use and combine a variety of software (including internet services) on a range of digital devices A/B</p>
		<p>Log on to a device and find own documents in a personal folder.</p> <p>Create simple content such as a poster or picture.</p>	<p>Create a simple presentation (PowerPoint)</p>	<p>Create a brochure/flier using Publisher.</p>
		<p>Create a video story using Photostory</p>	<p>Create a simple presentation (PowerPoint) and add images and appropriate text.</p>	<p>Use fonts, backgrounds, shapes, spellcheck.</p>
		<p>Add narration/content to Photostory.</p>	<p>Create an appropriate and effective presentation by sequencing. Link to topics.</p> <p>Deliver this presentation to their peers.</p>	

CS Resources

Autumn

<http://code-it.co.uk/scratch/dressingup/dressingupoverview>

Introduction to Scratch, sequence costume changes.

http://code-it.co.uk/scratch/smoking_car/smokingcaroverview

Build upon this to create sequence to make a car move

Spring

<http://code-it.co.uk/scratch/mathsquiz/mathsquizoverview>

Summer

<http://code-it.co.uk/scratch/scratchconversation>

KS2 (Objectives in bold)	Class 4 Overview	Autumn	Spring	Summer
<p style="text-align: center;">Computer Science</p>	<ul style="list-style-type: none"> • design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. • use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • 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. 	<p>I can solve problems in writing programs by decomposing them into smaller parts (A)</p> <ul style="list-style-type: none"> • Write a simple program in Scratch, which breaks a problem down into smaller pieces. <p>Scratch –Build a Scene http://code-it.co.uk/goldscene where code is modified to have different effects. Or Helicopter Game http://code-it.co.uk/goldgame/</p> <p>I can work with variables (B)</p> <ul style="list-style-type: none"> • Use a variable to keep a score in Scratch e.g. maths questions <p>Kodu – Create a game where the character gets points for instance by collecting coins.</p> <p>I can work with different forms of input and output (B)</p> <ul style="list-style-type: none"> • (see above scoring game) • Use a variety of outputs, e.g. change the score in a game and playing a sound. <p>I can collaborate and communicate using technology. (A)</p> <ul style="list-style-type: none"> • Email/Skype/Facetime? 	<p>I can work with different forms of input and output (A)</p> <ul style="list-style-type: none"> • Create a single player game, which uses a variety of inputs to control a player. • GD – multi-player game <p>I can use selection and repetition in programs (B)</p> <ul style="list-style-type: none"> • Can use simple repetition e.g. Create 2D shapes in scratch using loops • Can use multiple loops e.g. Create more complex 2D shapes in scratch using loops (Spirograph patterns) <p>Slug Trail http://code-it.co.uk/scratch/slugtrail/slugtrailoverview</p> <ul style="list-style-type: none"> • Can use selection to create a scoring system e.g. when an object is bumped in Kodu • Can use selection with variables e.g. create a more complex game with multiple scoring or timing systems in Kodu (Shooting Fish with timing element), or make a Fitbit with a steps alarm with Microbit. 	<p>I can solve problems in writing programs by decomposing them into smaller parts (B)</p> <p>I can simulate physical systems</p> <ul style="list-style-type: none"> • Use a loop and an if statement (e.g., Microbit using movement sensor) • Can accurately use procedures e.g. Lightbot or use of the broadcast command in scratch to run additional code or procedures within Microbit <p>Kodu For instance a racing game with a timer</p> <p>I can use logical reasoning to explain how some simple algorithms work and detect and correct errors in them. (A/B)</p> <ul style="list-style-type: none"> • Be able to annotate a simple screenshot (Scratch or Microbit Block editor) to explain how it works. • Be able to use the annotated screenshot to further develop the challenge.
<p style="text-align: center;">Online Safety</p>	<ul style="list-style-type: none"> • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. • use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. 	<p>I can understand the importance of using technology respectfully and responsibly (A)</p> <ul style="list-style-type: none"> • Know how to reduce the risks posed by the misuse of technology <p>You won't believe this! Common Sense Media https://www.commonsense.org/education/digital-citizenship/lesson/you-wont-believe-this</p> <ul style="list-style-type: none"> • Be able to explain the personal and legal consequences of misuse of technology, e.g. cyberbullying and grooming, know how to reduce the risks of the misuse of technology <p>(B)</p> <p>Google Internet Legends – material in file</p> <ul style="list-style-type: none"> • Is aware that apps share information and that settings need to be changed to limit visibility of personal 	<p>I can identify a range of ways to report concerns about content and contact</p> <ul style="list-style-type: none"> • Knows that concerns can be passed to a trusted adult • Knows how to screenshot and report bullying and block users • Is aware of reporting tools on apps and websites <p>(A) Play Like Share – CEOP https://www.thinkuknow.co.uk/professionals/resources/play-like-share/</p> <p>(A) What is Cyberbullying? Common Sense Media https://www.commonsense.org/education/digital-citizenship/lesson/whats-cyberbullying</p>	<p>I can appreciate how search results are ranked</p> <p>I am discerning in evaluating digital content (A)</p> <ul style="list-style-type: none"> • Can use a search engine using appropriate key words to find information • Effectively use a search engine with multiple criteria e.g. AND , OR to refine their search <p>Google Search Lessons https://sites.google.com/site/gwebsearcheducation/lessonplans</p> <p>(B)</p> <ul style="list-style-type: none"> • Understand how results can be manipulated by adverts, recognise adverts in searches • Be able to compare websites when finding information <p>Know that some news is 'fake.' http://fakenews.lgfl.net</p>

		information Can confidently explain the importance of privacy settings when using websites and apps	(B) Livestreaming – good and bad attention https://www.thinkuknow.co.uk/professionals/resources/live-streaming/	<ul style="list-style-type: none"> Explain how they validated their information (e.g. checking on more than one site) Trust Me https://www.lqfl.net/online-safety/trust-me Reliability of Websites www.allaboutexplores.com Other A Creators Rights and Responsibilities Common Sense Media https://www.commonsense.org/education/digital-citizenship/lesson/a-creators-rights-and-responsibilities
I T	<ul style="list-style-type: none"> select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. 		Progression of Skills	
		I can select, use and combine a variety of software (including internet services) on a range of digital devices (A/B)	I can analyse and evaluate information and data (A/B)	I can present data and information (A/B)
		Create a brochure/flier using Publisher.	Is able to enter data into a pre-prepared spreadsheet to answer simple questions e.g. excel	Can independently create and show a simple presentation e.g. PowerPoint
		Can use another program to create content for presentation (e.g. edit a picture for use in PowerPoint)	Can confidently spreadsheet and calculations to produce a graphs and solve problems (link to stats in maths)	Can confidently develop and present ideas to a group and match the work to the needs of the audience
		Can use multiple programmes to create content e.g. develop and embed a video in a presentation	Can confidently use spreadsheets and calculations to produce a graphs and solve problems (link to reasoning problems in maths – GD)	Can confidently develop and present ideas to a group and match the work to the needs of the audience using a range of material e.g. video, presentation handouts

CS Resources

Autumn

<http://code-it.co.uk/scratch/tablesgame/tablesgameoverview> Times Table Quiz Planning

<http://code-it.co.uk/scratch/coins/coinsoverview> Input and Output

Spring

<http://code-it.co.uk/wp-content/uploads/2018/03/ShapesPlanExpandedv4.pdf> Shapes continued from Class 3 (Spirograph)

Kodu planning <https://www.cs.cmu.edu/~dst/Kodu/Curriculum/>

Summer

<http://code-it.co.uk/scratch/slugtrail/slugtrailoverview>

<http://code-it.co.uk/scratch/crabmaze> (challenge)