

Appendix 2

Key Stage 1

National Curriculum

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 instructions
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs
- 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	NCCE	Key Application	Basic skills	Google Applied Digital Skills	Code.org	Barefoot Resources	Other Resource
Year 1	Computing systems and networks – Technology around us	https://paintz.app/	Mouse and keyboard			Computational Thinking Poster	BBC Bitesize
	Creating media – Digital painting	https://paintz.app/ <i>Google Draw</i>	Mouse, keyboard, file management			Crazy Character algorithm	<i>Purple Mash</i>

							<i>Or other paint package</i>
	Creating media – Digital writing	Google Docs	Mouse, keyboard, file management			Shopping list activity	<i>Purple Mash Or other Word processing program</i>
	Data and information – Grouping data		Entering numbers			Sorting Objects	<i>2DIY</i>
	Programming A – Moving a robot	Bee Bots Blue Bots Bee Bot app Blue Bot app Or other floor robot	Basic directions, sequencing		Code.org Pre-reader course Or Course A	Bee Bots Basic Activity	Code for Life
	Programming B – Introduction to animation	Scratch JR	Sequencing			Scratch Jr Tinkering	Code for Life
Year 2	Computing systems and networks – IT around us		Mouse, keyboard, file management			Computational Thinking Poster	BBC Bitesize IT

	Creating media – Digital photography	Range of devices to take photos https://pixlr.com/x <i>Purple Mash</i>	Photo editing, file management and storage				
	Creating media – Making music	https://musiclab.chromeexperiments.com/About <i>Purple Mash Garage Band</i>	Input and outputs			Musical sequences	Music Resources for KS1 Collection
	Data and information – Pictograms	https://www.j2e.com/j2data/ <i>Purple Mash</i>	Entering numbers			Colourful Kits	BBC Bitesize How is data stored
	Programming A – Robot algorithms	Bee Bot Blue Bot <i>Lego Wedo</i>	Basic directions and sequencing		Code.org Course B Or Code.org CS Course 1	Bee Bots 123 Activity	Code for Life BBC Bitesize
	Programming B – An introduction to quizzes	Scratch Jr	Sequencing			Scratch Jr Knock knock Joke	Code for Life

Key Stage 2

National Curriculum

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 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
- 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	NCCE	Key Application	Basic Skills	Google Applied Digital Skills	Code.org	Barefoot	Other Resources
Year 3	Computing systems and networks – Connecting computers		Keyboard and typing skills	Understand your digital footprint		Key terms poster Network Hunt Activity	<i>Lego Wedo</i>

	Creating media – Animation	motion app	Sequencing and animation skills	Practice spelling		Animating a poem in Scratch	<i>Purple Mash Stikbot app</i>
	Creating media – Desktop publishing	Google Docs Adobe Spark	Keyboard and typing skills	Creating a presentation Creating an infographic Create a digital badge			<i>Purple Mash</i> <i>Google Draw, slides</i>
	Data and information – Branching databases	https://www.j2e.com/j2data/	Entering numbers	Create an if then story		Data Dash	<i>Purple Mash</i>
	Programming A – Sequence in music	Scratch	Sound sprites	Chrome Music Lab	Hour of Code Scratch Music		Code for Life
	Programming B – Events and actions	Scratch	Directions and pen tools		Minecraft Hour of Code Adventurer Hour of Code Dance Party		Scratch Tutorial Make a clicker game Code for Life

					Code.org Course C Or Code.org CS Course 2		
Year 4	Computing systems and networks – The Internet		Keyboard and typing skills	Evaluate credibility of online resources Creating a blog		Modelling the Internet	Literacy Trust Fake News Resources
	Creating media – Audio editing	Audacity	Sound editing Get Audacity and helpsheets here. https://www.audacityteam.org/				Sound Project from Teachers pay teachers Scratch tutorial record a sound <i>Garage Band</i>
	Creating media – Photo editing	Google photos iPad photo app	Photo editing	Create a digital picture book			

	Data and information – Data logging	Data Logger,	Data collection and analysis			Sound sensor	BBC Microbit Emulator <i>iPad data logging app, ipads noise sensor, accelerometer, or sphero?</i> <i>Google Science Journal</i> https://www.arduino.cc/education/science-journal
	Programming A – Repetition in shapes	Logo	Loops and repetition	Writing a rebus story	Frozen Hour of Code Hour of Code Tracey the Turtle	Repetition in shapes	<i>Scratch Purple Mash</i> Code for Life Turtle Academy
	Programming B – Repetition in games	Scratch	Loops		Hour of Code Designer Or	Make a game	Code for Life

					Code.org Course D		
Year 5	Computing systems and networks – Sharing information		Inputs and outputs	Annotate text in google docs		Selecting Searches Investigating inputs	Lego Wedo Literacy Trust Fake News Resources
	Creating media – Vector drawing	Google draw	Vector, layering	Creating a poster Make a promotional Flyer			
	Creating media – Video editing	Movie Maker,	Movie editing	Create a scrapbook			<i>iMovie</i> More ideas for lessons here.
	Data and information – Flat-file databases	J2eData.com	Searching, grouping and sorting	Create a budget in Google Sheets	Hour of code Oceans		<i>Purple mash</i>
	Programming A – Selection in physical computing	Crumbles	Inputs and outputs, conditionals		Hour of Code Star Wars Hour of Code Course E		<i>Sphero</i> <i>Lego Spike or Mindstorms</i> Scratch tutorials make a game

							Code for Life
	Programming B – Selection in quizzes	Scratch	Conditionals	Create a guessing game in forms	Hour of Code Hero's Journey Hour of Code Aquatic Adventure Or Code.org CS Course 3	Scratch Maths Quiz	Code for Life
Year 6	Computing systems and networks – Communication	Web Access	Searching the www	Write using internet research		Ranking searches	Literacy Trust Fake News Resources
	Creating media – 3D Modelling	Tinkercad					<i>Purple Mash Blender (code club)</i> Lessons from Tinkercad Code Club Projects
	Creating media – Web page creation	Google Sites	Web building	Design a website		Introduction to HTML	Thinglink

	Data and information – Spreadsheets	Google Sheets Google Maps	Basic spreadsheet functions	Make art in google sheets		Pizza Party Activity	<i>Excel</i>
	Programming A – Variables in games	Scratch	Variables	Create safe passwords using google sheets	Code.org Course F Or Code.org Express Course	Maths Quiz	Code for Life
	Programming B – Sensing	Micro.bit	Conditionals and variables	Introduction to Machine Learning	Hour of Code Oceans	Scratch Maths Quiz	<i>Scratch</i> <i>Lego Mindstorms</i> <i>Lego Spike</i> <i>Sphero</i> Scratch tutorial video sensing https://www.arduino.cc/education/science-journal Code for Life

							BBC Microbit Emulator
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At KS2 misconceptions can also be addressed by using BBC Bitesize Videos <https://www.bbc.co.uk/bitesize/subjects/zvnrq6f>

Notes:

Barefoot Resources - <https://www.barefootcomputing.org/primary-computing-resources>

The resources listed in the grid are not exhaustive. There are many other similar and suitable activities on the site to use, both unplugged and those using a computing resource. Be aware that the suggested activities are predominantly supporting computing concepts and don't necessarily teach basic skills eg word processing. They should complement and extend the curriculum.

Google Applied Digital Skills - <https://applieddigitalskills.withgoogle.com>

Class details : Applied Digital Skills for UKS2 Class code: qyzgq2

Specifically designed to develop skills in using google suite tools. These resources are primarily aimed at KS3+ but are very suitable for UKS2 students but may require some adaptation.

Code For Life - <https://www.codeforlife.education/>

Interactive and progressive lessons on coding using Blockly. [Code for Life](#)

Scratch - <https://scratch.mit.edu/>

Create projects includes a selection of tutorials.

Educators sections - <https://scratch.mit.edu/educators/>

Codeclub - <https://codeclub.org/en/>

UK based with additional lessons and projects using scratch, Python and Java

Code.org - <https://code.org/>

US based lessons tracking and progressing on programming.

Course catalogue <https://code.org/student/elementary>

Also includes the Hour of Code activities. <https://hourofcode.com/uk>

Purple Mash Coding

[Planning documentation](#)

BBC MICROBit

[BBC Microbit Emulator](#)

[BBC Bitesize](#)