Weaver Primary School

Progression of knowledge and skills: ICT and Computing

EYFS

Personal Social & Emotional Development: Show resilience and perseverance in the face of a challenge. Know and talk about the different factors that support their overall health and wellbeing (eg amount of 'screen time')
Physical Development: Develop their small motor skills so that they can use a range of tools competently, safely and confidently.
Expressive Arts and Design: Explore, use and refine a variety of artistic effects to express their ideas and feelings.

Strand	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Programming- Planning, writing and testing computer programs for digital devices, from floor turtles to tablets	We are treasure hunters • Give sequence of instructions to a floor turtle • Run sequence using Go button • Explain what they think the program will do before run	We are astronauts • Create a simple program on screen • Debug and errors in own code	We are programmers • Use sequence, selection, repetition in programs. • Work with variables • Work with various forms of input and output	We are software developers • Use sequence, selection, repetition in programs with some repetition. • Use exit conditions (repeat until…)	We are game developers • Use sequence, selection (and if…then… or 'if…then…else), • Combine with repetition in programs • Detect and correct errors	We are toy makers • Identify and name inputs and outputs for a microbit • Design an interactive toy • Design a program to control a toy
Computational thinking - computer science foundations: particularly algorithms, logical reasoning and decomposing problems into smaller parts.	We are TV chefs • Use digital technology to store and retrieve content • Film and upload classmates cooking • Understand that information in the internet can be seen by others	We are games testers • Understand algorithms as sequences of instructions or sets of rules in everyday contexts • Understand what to do if they have concerns about content or contact online	We are bug fixers • develop strategies for finding errors in programs • increase their knowledge and understanding of Scratch • recognise a number of common types of bugs in software	We are makers • Program using the Make Code editor • Convert and transfer a program written on screen to the microbit	We are cryptographers • Understand the need for private info to be encrypted • Encrypt and decrypt messages in simple cyphers • Appreciate the need to use complex passwords and keep them secure	We are computational thinkers • Develop the ability to reason logically about algorithms • Understand common algorithms for searching and sorting a list
Creativity - Creating and refining original content using digital tools across a range of media.	We are painters • Create original content using digital technology • create an original painting • realise that the images they search for can be seen by others	We are photographers • take and edit digital photos • Store, organise and retrieve content on digital devices • Review, reject and rate photographs they have taken • Know that photos of themselves should not be uploaded to the internet	We are presenters • develop web-based research skills • record a piece to camera • edit a movie using static images and green screen footage	We are musicians • Create a repeating percussion instrument • Compose and edit tunes using a the piano roll tool • Perform electronic music using pre recorded loops • Create a multi-track composition using multiple instruments	We are architects • Develop familiarity with a simple CAD tool • Develop spatial awareness by exploring a 3D virtual environment	We are publishers • Write and review content • Source digital media • Design and produce a high quality print document
Computer networks - Using and understanding the internet, the web and search engines, effectively and safely	We are collectors • know to close their laptop lid or turn their tablet over and tell a teacher or their parents/carers if they find inappropriate images • create an eBook including images and original text	We are researchers • retrieve information and images from websites into presentations, • save and open presentation files	We are who we are • create a number of structured presentations • narrate presentations • consider issues of trust and privacy when sharing information	We are bloggers • Create a sequence of blog posts on a theme • Incorporate additional media • Comment on the posts of others • Develop a critical reflective view of a range of media	We are web developers • What a source code for a webpage looks like and how it can be edited • How a website can be structured • How content can be added	We are connected • How search results are selected and ranked • How to judge the reliability of an online source • Strategies to deal with online bullying
Communication / collaboration - Making the most of computers and the internet for communicating with one or many, and working together on projects.	We are story tellers • Create original content using digital technology • create and record original digital audio	We are detectives • film and upload a working stop-motion video • recognise that videos can be edited digitally to great effect	We are co authors • be aware of their responsibilities when editing other people's work • become familiar with Wikipedia, including potential problems associated • practise research skills • write for a target audience using a wiki tool	We are artists • Become familiar with the tools and techniques of a vector graphics package • Develop an understanding of turtle graphics • Experiment with tools available, refine and develop work	We are adventure gamers • Plan a non-linear presentation • Create text as part of a presentation • Add and edit images • Use hyperlinks for navigate • Record and add audio narration	We are advertisers • Storyboard an effective advert for a cause • Shoot footage and source additional content • Edit assembled content to make an effective advert
Productivity- Collecting and analysing data and information using computers; organising, manipulating and presenting this to an audience.	We are celebrating • Create original content using digital technology • create data tables and trees	We are zoologists • use questions to sort and classify objects • take, upload and organise photographs • add information to a map • recognise that scientists use a range of digital technologies when collecting and analysing data	We are opinion pollsters • understand some elements of survey design • understand some ethical and legal aspects of online data collection • use the Internet to facilitate data collection • use charts to analyse data • interpret results.	We are meteorologists • Use computer based data logging to automate the recording of some weather data • Use spreadsheets to create charts • Analyse data explore inconsistencies and make predictions	We are VR designers • Explore real world and imagined locations in VR • Create 360 photosphere images • Link physical objects to digital content using QR codes • Create own VR scene	We are AI developers • How decision trees can be trained to classify data • How a neutral net recognises images • To train a machine learning system to identify sentiments
Vocabulary from previous units to reinforce		Code	Algorithm Bug / Debug Code Input / Output Program	Algorithm Bug debug Input output Program Sequence Sprite Hyperlink Repetition	Bug debug Program Scratch Sprite Hyperlink Pixel	Algorithm Storyboard Input Output Hyperlink
New vocabulary	Instruction Code Debug Robot Monitor Internet Mouse Keyboard Tablet eSafety	Website Input Output Edit Digital image Algorithm Navigate Program Save Open Folder	Camera roll Data Data centre Data centre Digital footprint Event Green screen Hyperlinks Hypertext Ken Burns Parallel processing Personal information Pixel Repetition Resolution Rushes Scratch Search engine Sequence Sprite Storyboard Survey	Repeat loop Variable Beat sequencer Live loops Musical Instrument Digital Interface (MIDI) Piano roll Sample Touch instrument Tracks Velocity Creative Commons Uniform Resource Locator (URL) Web server Bitmap Fractal Pixel Tessellation Vector graphics	Logical reasoning Cipher Codes Cryptanalysis Decrypt encrypt Encode Morse code Semaphore Transmit Computer aided design Render Photorealistic Hypertext markup language (HTML) Internet Protocol address (IP) Web browser Tag Safe search MP3	Accelerometer Bluetooth Controller Edge connector Interactive Simulator Light-emitting diode (LED) Binary / Linear search Desktop publishing (DTP) eBook Portable document format (PDF) Blog Fake news Plausible Reliable Final cut rough cut Rushes Artificial Intelligence Classifier Decision Tree Image / speech recognition
Endpoints **The children can:**	• Create a story book with narration • Create a digital painting • Program a BeeBot	• Produce a short stop-motion animation film • Create a piece of digital art from an original photograph	• Video a presentation against a green screen • Program an animation on Scratch • Produce a wiki	• Create a piece of music in Garageband • Create a media-rich blog • Deliver a TV style weather forecast	• Develop an interactive game • Create a virtual space • Create a webpage that includes images	• Create an interactive toy by programming a microbit. • Create a school news letter • Create a short television advert