

<p>Unit 4.1 – We are software developers</p> <p>Algorithm: a sequence of precise instructions or steps (sometimes a set of rules) to achieve an objective</p> <p>Bug: an error or mistake in a program or algorithm, causing the computer or robot to behave in a manner that was not originally intended</p> <p>Debug: correct mistakes in a computer program or algorithm</p> <p>Input: data supplied to a computer, in this case the algorithm taken from the storyboard for the animation</p> <p>Output: information produced by a computer, in this case an animation</p> <p>Program: a sequence of instructions (or sometimes a set of rules) that can be followed by a computer</p> <p>Repeat loop: a sequence of instructions executed a fixed number of times or until some condition is met, or possibly forever</p> <p>Repetition: programming construct which allows a group of instructions to be repeated a number of times, or until a certain condition is met</p> <p>Scratch: simple, block-based programming language in which programs for characters are built by snapping together code blocks</p> <p>Sequence: placing programming instructions in order, so each one happens one after the other</p> <p>Sprite: a graphical character in a program that can be given its own sequence of instructions</p> <p>Variable: lets computer programs store, retrieve or change simple data. Typically thought of as a particular location in the computer's memory that holds a specific item of data</p>
<p>Unit 4.2 – We are makers</p> <p>Accelerometer: hardware component providing data on changes in motion, typically in three directions</p> <p>Algorithm: a sequence of precise instructions or steps (sometimes a set of rules) to achieve an objective</p> <p>Bluetooth: wireless digital communication protocol using low energy signals over short distances</p> <p>If/else if/else: programming selection construct which indicates what code should be run depending on which one of multiple conditions are satisfied</p> <p>JavaScript: text-based programming language, commonly used to power interactive web pages</p> <p>LED: light emitting diode, an electronic component that lights up when current flows in one direction</p> <p>MakeCode: block- and text-based editor from Microsoft, supporting a variety of hardware platforms including the micro:bit</p> <p>micro:bit: simple, single board programmable computer with integrated input, output and network capabilities</p> <p>Object code: a version of the program converted (compiled) into the detailed instructions to be followed by the computer's processor</p> <p>Runtime: the complete software environment (operating system, drivers, interpreter) needed for a program to run on particular hardware</p> <p>Simulator: software allowing one computer system to behave as another; in this case the MakeCode editor include an on-screen simulator of a micro:bit so that programs can be tested</p> <p>Source code: the program as written, in a language that can be understood by both the programmer and the computer</p> <p>Variable: lets computer programs store, retrieve or change simple data – typically thought of as a particular bit of the computer's memory that holds a specific bit of data</p>
<p>Unit 4.3 – We are musicians</p> <p>Beat sequencer: interface for creating a repeating percussion pattern, showing at which beat in a set of bars individual instruments are hit</p> <p>Live loops: GarageBand tool for creating and performing electronic, typically dance music, in which multiple samples are played with synchronisation managed by the software</p> <p>MIDI: 'Musical Instrument Digital Interface', originally a standard for connecting electronic instruments, now used for the associated file format in which note pitch, duration and velocity are specified, allowing subsequent playback using different instrument voices or samples</p> <p>Piano roll: interface for controlling the pitch and duration of individual notes, a digital equivalent of staff notation, derived from the punched-hole piano rolls used for player-pianos in the 19th century. The velocity (volume) of individual notes can also be specified</p> <p>Sample: a short, recorded piece of digital audio, for example a hand clap or an individual note</p> <p>Staff: traditional musical notation in which pitch is represented by the height of the line on which the note is drawn, and duration by the shape of that note</p> <p>Touch instrument: GarageBand interface for keyboards, strings and percussion instruments, which can be played and recorded live on the iPad screen</p> <p>Tracks: GarageBand tool for combining and modifying music recorded, performed or created using other components of the program</p>

<p>Velocity: here, the volume of individual notes – mirroring the speed and force with which piano keys are pressed determines the volume of the notes played</p> <p>Voice: in this context, the virtual instrument chosen to replay music, with the associated samples of notes at different pitches</p>
<p>Unit 4.4 – We are bloggers</p> <p>Creative Commons: copyright licensing scheme in which content can be re-used without additional permission, subject to certain specified conditions</p> <p>Hyperlinks: text or images that, when clicked, opens another page or moves to another part of the document</p> <p>Hypertext mark-up language (HTML): the predominant language for web pages</p> <p>Internet: global network connecting computers and local networks using automated switches, routers and fibre optic, copper wire and radio connections</p> <p>Uniform Resource Locator (URL): a standard for specifying the location on the Internet of certain data files. The URL includes the protocol used to transmit the data, the computer on which it is stored, the file path and the file name of the data</p> <p>Web server: a service running on a computer (or sometimes the computer itself) that returns HTML data for a web page when it receives a request via the local network or the Internet</p>
<p>Unit 4.5 We are artists</p> <p>Abstraction: a process of managing complexity by setting to the side irrelevant detail and concentrating on function rather than form</p> <p>Bitmap: an image represented by a large, rectangular grid of pixels, each having its own colour value, typically in the range 0 to 255 for each of red, blue and green</p> <p>Fractal: a self-similar repeating (or almost repeating) structure in which ever greater detail becomes apparent as the structure is examined more closely</p> <p>Pixel: picture element – one of the small, square dots that makes up a digital image</p> <p>Repetition: programming construct which allows a group of instructions to be repeated a number of times, or until a certain condition is met</p> <p>Sprite: a graphical character in a program that can be given its own sequence of instructions</p> <p>Tessellation: a regular pattern of one shape that fills a space without overlapping or leaving spaces between</p> <p>Transform: to change the shape of an image or part of an image</p> <p>Turtle: a small floor robot (or a representation of one on screen) that draws by moving forward and turning, under the control of a program, for example in Logo or Scratch's pen commands</p> <p>Vector graphics: a way of representing an image by specifying the lines, arcs and regions from which it is made</p>
<p>Unit 4.6 – We are meteorologists</p> <p>Analogue: continuously changing values, such as temperature or pressure</p> <p>Data: structured information gathered for analysis, often, but not always, as numbers</p> <p>Dataset: a set of data from a group related to a particular topic</p> <p>Digital: storing, processing or transmitting information as numbers, such as temperature to the nearest degree or pressure to the nearest kPa</p> <p>Field: information in a database related to a single type of information given for all the records, such as age</p> <p>Filter (database): to identify a subset of data based on one or more criteria</p> <p>Form: a way of entering a record and sometimes viewing a database record</p> <p>Input: data supplied to a computer</p> <p>Interface: the link between one system and another, typically between the user of a program and the computer on which it runs</p> <p>Record: information in a database related to one individual or case</p> <p>Sensor: means of getting data from the real world into a computer</p> <p>Table: a data structure representing records as rows and fields as columns</p>