

KS2 progression

	COMPUTING SYSTEMS & NETWORKS	CREATING MEDIA	DATA & INFORMATION	PROGRAMMING
Prior learning YEAR 2	<p>Information technology around us</p> <ul style="list-style-type: none"> To recognise the uses and features of information technology To identify information technology in the home To identify information technology beyond school To explain how information technology benefits us To show how to use information technology safely To recognise that choices are made when using information technology 	<p>Digital photography</p> <ul style="list-style-type: none"> To know what devices can be used to take photographs To use a digital device to take a photograph To describe what makes a good photograph To decide how photographs can be improved To use tools to change an image To recognise that images can be changed <p>Making music</p> <ul style="list-style-type: none"> To say how music can make us feel To identify that there are patterns in music To describe how music can be used in different ways To show how music is made from a series of notes To create music for a purpose To review and refine our computer work 	<p>Pictograms</p> <ul style="list-style-type: none"> To recognise that we can count and compare objects using tally charts To recognise that objects can be represented as pictures To create a pictogram To select objects by attribute and make comparisons To recognise that people can be described by attributes To explain that we can present information using a computer 	<p>Robot algorithms</p> <ul style="list-style-type: none"> To describe a series of instructions as a sequence To explain what happens when we change the order of instructions To use logical reasoning to predict the outcome of a program (series of commands) To explain that programming projects can have code and artwork To design an algorithm To create and debug a program that I have written <p>Introduction to quizzes</p> <ul style="list-style-type: none"> To explain that a sequence of commands has a start To explain that a sequence of commands has an outcome To create a program using a given design To change a given design To create a program using my own design To decide how my project can be improved

<p>YEAR 3</p>	<p>Connecting computers To explain how digital devices function To identify input and output devices To recognise how digital devices can change the way we work To explain how a computer network can be used to share information To explore how digital devices can be connected To recognise the physical components of a network</p>	<p>Stop-frame animation To explain that animation is a sequence of drawings or photographs To relate animated movement with a sequence of images To plan an animation To identify the need to work consistently and carefully To review and improve an animation To evaluate the impact of adding other media to an animation</p> <p>Desktop publishing To recognise how text and images convey information To recognise that text and layout can be edited To choose appropriate page settings To add content to a desktop publishing publication To consider how different layouts can suit different purposes To consider the benefits of desktop publishing</p>	<p>Branching databases To create questions with yes/no answers To identify the object attributes needed to collect relevant data To create a branching database To identify objects using a branching database To explain why it is helpful for a database to be well structured To compare the information shown in a pictogram with a branching database</p>	<p>Sequence in music To explore a new programming environment I can identify that each sprite is controlled by the commands I choose To explain that a program has a start To recognise that a sequence of commands can have an order To change the appearance of my project To create a project from a task description</p> <p>Events and actions To explain how a sprite moves in an existing project To create a program to move a sprite in four directions To adapt a program to a new context To develop my program by adding features To identify and fix bugs in a program To design and create a maze-based challenge</p>
<p>YEAR 4</p>	<p>The internet To describe how networks physically connect to other networks To recognise how networked devices make up the internet To outline how websites can be shared via the World Wide Web To describe how content can be added and accessed on the World Wide Web To recognise how the content of the WWW is created by people To evaluate the consequences of unreliable content</p>	<p>Audio editing To identify that sound can be digitally recorded To use a digital device to record sound To explain that a digital recording is stored as a file To explain that audio can be changed through editing To show that different types of audio can be combined and played together To evaluate editing choices made</p> <p>Photo editing To explain that digital images can be changed To change the composition of an image To describe how images can be changed for different uses To make good choices when selecting different tools To recognise that not all images are real</p>	<p>Data logging To explain that data gathered over time can be used to answer questions To use a digital device to collect data automatically To explain that a data logger collects 'data points' from sensors over time To use data collected over a long duration to find information To identify the data needed to answer questions To use collected data to answer questions</p>	<p>Repetition in shapes To identify that accuracy in programming is important To create a program in a text-based language To explain what 'repeat' means To modify a count-controlled loop to produce a given outcome To decompose a program into parts To create a program that uses count-controlled loops to produce a given outcome</p> <p>Repetition in games To develop the use of count-controlled loops in a different programming environment To explain that in programming there are infinite loops and count controlled loops To develop a design which includes</p>

		To evaluate how changes can improve an image		two or more loops which run at the same time To modify an infinite loop in a given program To design a project that includes repetition To create a project that includes repetition
YEAR 5	Sharing information To explain that computers can be connected together to form systems To recognise the role of computer systems in our lives To recognise how information is transferred over the internet To explain how sharing information online lets people in different places work together To contribute to a shared project online To evaluate different ways of working together online	Video editing To recognise video as moving pictures, which can include audio To identify digital devices that can record video To capture video using a digital device To recognise the features of an effective video To identify that video can be improved through reshooting and editing To consider the impact of the choices made when making and sharing a video Vector drawing To identify that drawing tools can be used to produce different outcomes To create a vector drawing by combining shapes To use tools to achieve a desired effect To recognise that vector drawings consist of layers To group objects to make them easier to work with To evaluate my vector drawing	Flat-file databases To use a form to record information To compare paper and computer-based databases To outline how grouping and then sorting data allows us to answer questions To explain that tools can be used to select specific data To explain that computer programs can be used to compare data visually To apply my knowledge of a database to ask and answer real-world questions	Selection in physical computing To control a simple circuit connected to a computer To write a program that includes count-controlled loops To explain that a loop can stop when a condition is met, eg number of times To conclude that a loop can be used to repeatedly check whether a condition has been met To design a physical project that includes selection To create a controllable system that includes selection Selection in games To explain how selection is used in computer programs To relate that a conditional statement connects a condition to an outcome To explain how selection directs the flow of a program To design a program which uses selection To create a program which uses selection To evaluate my program
YEAR 6	Communication To identify how to use a search engine To describe how search engines select results To describe how search engines select results To explain how search results are ranked	Web page creation To review an existing website and consider its structure To plan the features of a web page To consider the ownership and use of images (copyright) To recognise the need to preview pages To outline the need for a navigation path To recognise the implications of linking to	Spreadsheets To identify questions which can be answered using data To explain that objects can be described using data To explain that formula can be used to produce calculated data To apply formulas to data, including duplicating	Variables in games To define a 'variable' as something that is changeable To explain why a variable is used in a program To choose how to improve a game by using variables To design a project that builds on a given example

To recognise why the order of results is important, and to whom
To recognise how we communicate using technology
To evaluate different methods of online communication

content owned by other people

3D modelling

To use a computer to create and manipulate three-dimensional (3D) digital objects
To compare working digitally with 2D and 3D graphics
To construct a digital 3D model of a physical object
To identify that physical objects can be broken down into a collection of 3D shapes
To design a digital model by combining 3D objects
To develop and improve a digital 3D model

To create a spreadsheet to plan an event
To choose suitable ways to present data

To use my design to create a project
To evaluate my project

Sensing

To create a program to run on a controllable device
To explain that selection can control the flow of a program
To update a variable with a user input
To use an conditional statement to compare a variable to a value
To design a project that uses inputs and outputs on a controllable device
To develop a program to use inputs and outputs on a controllable device

KS2 curriculum

LKS2

Statement Number	National Curriculum Statement
2.1	design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
2.2	use sequence, selection, and repetition in programs; work with variables and various forms of input and output
2.3	use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
2.4	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
2.5	use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
2.6	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
2.7	use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Year 3

- use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- 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
- 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

<https://teachcomputing.org/curriculum/key-stage-2/computing-systems-and-networks-connecting-computers>

Connecting Computers	1	To explain how digital devices function	<ul style="list-style-type: none"> - I can explain that digital devices accept inputs - I can explain that digital devices produce outputs - I can follow a process 	Digital device, input, output, process
Connecting Computers	2	To identify input and output devices	<ul style="list-style-type: none"> - I can classify input and output devices - I can design a digital device - I can model a simple process 	Digital device, input, output, process
Connecting Computers	3	To recognise how digital devices can change the way we work	<ul style="list-style-type: none"> - I can explain how I use digital devices for different activities - I can recognise similarities between using digital devices and non-digital tools - I can suggest differences between using digital devices and non-digital tools 	Program
Connecting Computers	4	To explain how a computer network can be used to share information	<ul style="list-style-type: none"> - I can discuss why we need a network switch - I can explain how messages are passed through multiple connections - I can recognise different connections 	Connection, network, network switch
Connecting Computers	5	To explore how digital devices can be connected	<ul style="list-style-type: none"> - I can demonstrate how information can be passed between devices - I can explain the role of a switch, server, and wireless access point in a network - I can recognise that a computer network is made up of a number of devices 	Network switch, server, wireless access point (WAP)
Connecting Computers	6	To recognise the physical components of a network	<ul style="list-style-type: none"> - I can identify how devices in a network are connected with one another - I can identify networked devices around me - I can identify the benefits of computer networks 	Network switch, server, wireless access point (WAP)

- 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

<https://teachcomputing.org/curriculum/key-stage-2/creating-media-animation>

Stop-frame Animation	1	To explain that animation is a sequence of drawings or photographs	<ul style="list-style-type: none"> - I can create an effective flip book-style animation - I can draw a sequence of pictures - I can explain how an animation/flip book works 	Animation, flip book
Stop-frame Animation	2	To relate animated movement with a sequence of images	<ul style="list-style-type: none"> - I can create an effective stop frame animation - I can explain why little changes are needed for each frame - I can predict what an animation will look like 	Stop frame animation, frame, sequence, image, photograph
Stop-frame Animation	3	To plan an animation	<ul style="list-style-type: none"> - I can break down a story into settings, characters and events - I can create a storyboard - I can describe an animation that is achievable on screen 	Setting, character, events, stop frame animation, onion skinning
Stop-frame Animation	4	To identify the need to work consistently and carefully	<ul style="list-style-type: none"> - I can evaluate the quality of my animation - I can review a sequence of frames to check my work - I can use onion skinning to help me make small changes between frames 	Stop frame animation, onion skinning, consistency
Stop-frame Animation	5	To review and improve an animation	<ul style="list-style-type: none"> - I can evaluate another learner's animation - I can explain ways to make my animation better - I can improve my animation based on feedback 	Evaluation, animation, onion skinning, delete, frame
Stop-frame Animation	6	To evaluate the impact of adding other media to an animation	<ul style="list-style-type: none"> - I can add other media to my animation - I can evaluate my final film - I can explain why I added other media to my animation 	Animation, media, import, transition

- 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
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<https://teachcomputing.org/curriculum/key-stage-2/programming-a-sequence-in-music>

Sequence in music	1	To explore a new programming environment	<ul style="list-style-type: none"> - I can explain that objects in Scratch have attributes (linked to) - I can identify the objects in a Scratch project (sprites, backdrops) - I can recognise that commands in Scratch are represented as blocks 	Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop
Sequence in music	2	I can identify that each sprite is controlled by the commands I choose	<ul style="list-style-type: none"> - I can choose a word which describes an on-screen action for my design - I can create a program following a design - I can identify that each sprite is controlled by the commands I choose 	Sprites, programming blocks, motion, turn, point in direction, go to, glide
Sequence in music	3	To explain that a program has a start	<ul style="list-style-type: none"> - I can create a sequence of connected commands - I can explain that the objects in my project will respond exactly to the code - I can start a program in different ways 	Sequence, event, task, design, code, run the code
Sequence in music	4	To recognise that a sequence of commands can have an order	<ul style="list-style-type: none"> - I can combine sound commands - I can explain what a sequence is - I can order notes into a sequence 	Sequence, order, note, chord
Sequence in music	5	To change the appearance of my project	<ul style="list-style-type: none"> - I can build a sequence of commands - I can decide the actions for each sprite in a program - I can make design choices for my artwork 	Sprite, stage, costume, backdrop
Sequence in music	6	To create a project from a task description	<ul style="list-style-type: none"> - I can identify and name the objects I will need for a project - I can implement my algorithm as code - I can relate a task description to a design 	Design, algorithm, bug, debug

- 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

<https://teachcomputing.org/curriculum/key-stage-2/data-and-information-branching-databases>

Branching databases	1	To create questions with yes/no answers	<ul style="list-style-type: none"> - I can create two groups of objects separated by one attribute - I can investigate questions with yes/no answers - I can make up a yes/no question about a collection of objects 	Attribute, value, questions, table, objects
Branching databases	2	To identify the object attributes needed to collect relevant data	<ul style="list-style-type: none"> - I can arrange objects into a tree structure - I can create a group of objects within an existing group - I can select an attribute to separate objects 	Branching database, database, attribute, value, questions, objects, equal, even, separate
Branching databases	3	To create a branching database	<ul style="list-style-type: none"> - I can group objects using my own yes/no questions - I can prove my branching database works - I can select objects to arrange in a branching database 	Branching database, database, attribute, value, questions, objects
Branching databases	4	To identify objects using a branching database	<ul style="list-style-type: none"> - I can create questions and apply them to a tree structure - I can select a theme and choose a variety of objects - I can use my branching database to answer questions 	Branching database, attribute, questions, structure, compare, order, organise
Branching databases	5	To explain why it is helpful for a database to be well structured	<ul style="list-style-type: none"> - I can compare two branching database structures - I can create yes/no questions using given attributes - I can explain that questions need to be ordered carefully to split objects into similarly sized groups 	Branching database, attribute, value, question, j2data, selecting
Branching databases	6	To compare the information shown in a pictogram with a branching database	<ul style="list-style-type: none"> - I can compare two ways of presenting information - I can explain what a branching database tells me - I can explain what a pictogram tells me 	Branching database, attribute, value, questions, j2data, pictogram, compare, information, decision tree

- 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

- Copyright and ownership

- Managing online information

<https://teachcomputing.org/curriculum/key-stage-2/creating-media-desktop-publishing>

Desktop publishing	1	To recognise how text and images convey information	<ul style="list-style-type: none"> - I can explain the difference between text and images - I can identify the advantages and disadvantages of using text and images - I can recognise that text and images can communicate messages clearly 	Text, images, advantages, disadvantages, communicate
Desktop publishing	2	To recognise that text and layout can be edited	<ul style="list-style-type: none"> - I can change font style, size, and colours for a given purpose - I can edit text - I can explain that text can be changed to communicate more clearly 	Font, font style, communicate, template
Desktop publishing	3	To choose appropriate page settings	<ul style="list-style-type: none"> - I can create a template for a particular purpose - I can define the term 'page orientation' - I can recognise placeholders and say why they are important 	Landscape, portrait, orientation, placeholder, template
Desktop publishing	4	To add content to a desktop publishing publication	<ul style="list-style-type: none"> - I can choose the best locations for my content - I can make changes to content after I've added it - I can paste text and images to create a magazine cover 	Desktop publishing, copy, paste
Desktop publishing	5	To consider how different layouts can suit different purposes	<ul style="list-style-type: none"> - I can choose a suitable layout for a given purpose - I can identify different layouts - I can match a layout to a purpose 	Layout, purpose
Desktop publishing	6	To consider the benefits of desktop publishing	<ul style="list-style-type: none"> - I can compare work made on desktop publishing to work created by hand - I can identify the uses of desktop publishing in the real world - I can say why desktop publishing might be helpful 	Desktop publishing, benefits

- 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
- 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

<https://teachcomputing.org/curriculum/key-stage-2/programming-b-events-and-actions>

Events and actions	1	To explain how a sprite moves in an existing project	<ul style="list-style-type: none"> - I can choose which keys to use for actions and explain my choices - I can explain the relationship between an event and an action - I can identify a way to improve a program 	Motion, event, sprite, algorithm, logic
Events and actions	2	To create a program to move a sprite in four directions	<ul style="list-style-type: none"> - I can choose a character for my project - I can choose a suitable size for a character in a maze - I can program movement 	Move, resize, algorithm
Events and actions	3	To adapt a program to a new context	<ul style="list-style-type: none"> - I can choose blocks to set up my program - I can consider the real world when making design choices - I can use a programming extension 	Extension block, pen up, set up
Events and actions	4	To develop my program by adding features	<ul style="list-style-type: none"> - I can build more sequences of commands to make my design work - I can choose suitable keys to turn on additional features - I can identify additional features (from a given set of blocks) 	Pen, design, event, action, algorithm
Events and actions	5	To identify and fix bugs in a program	<ul style="list-style-type: none"> - I can match a piece of code to an outcome - I can modify a program using a design - I can test a program against a given design 	Debugging, errors, setup
Events and actions	6	To design and create a maze-based challenge	<ul style="list-style-type: none"> - I can evaluate my project - I can implement my design - I can make design choices and justify them 	Design, code, setup, test, debug, actions, events

Year 4

- 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.

<https://teachcomputing.org/curriculum/key-stage-2/computing-systems-and-networks-the-internet>

The Internet	1	To describe how networks physically connect to other networks	<ul style="list-style-type: none"> - I can demonstrate how information is shared across the internet - I can describe the internet as a network of networks - I can discuss why a network needs protecting 	Internet, network, router, network security
The Internet	2	To recognise how networked devices make up the internet	<ul style="list-style-type: none"> - I can describe the different networked devices and how they connect - I can explain how the internet allows us to view the World Wide Web - I can recognise that the World Wide Web is the part of the internet that contains websites and web pages 	Network switch, server, wireless access point (WAP), router
The Internet	3	To outline how websites can be shared via the World Wide Web	<ul style="list-style-type: none"> - I can describe how to access websites on the WWW - I can describe where websites are stored when uploaded to the WWW - I can explain the types of media that can be shared on the World Wide Web (WWW) 	Website, web page, web address, router, routing, route tracing, browser
The Internet	4	To describe how content can be added and accessed on the World Wide Web	<ul style="list-style-type: none"> - I can create media which can be found on websites - I can explain that new content can be created online - I can recognise that I can add content to the WWW 	World Wide Web, internet, content, website, web page, links, files
The Internet	5	To recognise how the content of the WWW is created by people	<ul style="list-style-type: none"> - I can explain that there are rules to protect content - I can explain that websites and their content are created by people - I can suggest who owns the content on websites 	Website, use, content, download, sharing, ownership, permission
The Internet	6	To evaluate the consequences of unreliable content	<ul style="list-style-type: none"> - I can explain that not everything on the World Wide Web is true. - I can explain why I need to think carefully before I share or reshare content - I can explain why some information I find online may not be honest, accurate, or legal. 	Information, sharing, accurate, honest, content, adverts

- 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.

- Copyright and ownership

<https://teachcomputing.org/curriculum/key-stage-2/creating-media-audio-editing>

Audio editing	1	To identify that sound can be digitally recorded:	<ul style="list-style-type: none"> - I can identify digital devices that can record sound and play it back - I can identify the inputs and outputs required to play audio or record sound - I can recognise the range of sounds that can be recorded 	Audio, record, playback, microphone, speaker, headphones, input, output
Audio editing	2	To use a digital device to record sound:	<ul style="list-style-type: none"> - I can discuss what other people include when recording sound for a podcast - I can suggest how to improve my recording - I can use a device to record audio and play back sound 	Audio, sound, record, playback, start, pause, stop, podcast
Audio editing	3	To explain that a digital recording is stored as a file:	<ul style="list-style-type: none"> - I can discuss why it is useful to be able to save digital recordings - I can plan and write the content for a podcast - I can save a digital recording as a file 	Audio, sound, record, playback, start, pause, stop, podcast, save, file
Audio editing	4	To explain that audio can be changed through editing:	<ul style="list-style-type: none"> - I can discuss ways in which audio recordings can be altered - I can edit sections of of an audio recording - I can open a digital recording from a file 	Audio, sound, record, playback, edit, selection, open, save, file
Audio editing	5	To show that different types of audio can be combined and played together:	<ul style="list-style-type: none"> - I can choose suitable sounds to include in a podcast - I can discuss sounds that other people combine - I can use editing tools to arrange sections of audio 	Audio, sound, edit, selection, open, save, mixing, time shift
Audio editing	6	To evaluate editing choices made:	<ul style="list-style-type: none"> - I can discuss the features of a digital recording I like - I can explain that digital recordings need to be exported to share them - I can suggest improvements to a digital recording 	Export, MP3, audio, editing, evaluate, feedback

- 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
- 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

<https://teachcomputing.org/curriculum/key-stage-2/programming-a-repetition-in-shapes>

Repetition in shapes	1	To identify that accuracy in programming is important	<ul style="list-style-type: none"> - I can create a code snippet for a given purpose - I can explain the effect of changing a value of a command - I can program a computer by typing commands 	Program, turtle, commands, code snippet
Repetition in shapes	2	To create a program in a text-based language	<ul style="list-style-type: none"> - I can test my algorithm in a text-based language - I can use a template to create a design for my program - I can write an algorithm to produce a given outcome 	Algorithm, design, debug, Logo commands (see Glossary handout)
Repetition in shapes	3	To explain what 'repeat' means	<ul style="list-style-type: none"> - I can identify everyday tasks that include repetition as part of a sequence, eg brushing teeth, dance moves - I can identify patterns in a sequence, eg 'step 3 times' means the same as 'step, step, step' - I can use a count-controlled loop to produce a given outcome 	Pattern, repeat, repetition, count-controlled loop, algorithm, value
Repetition in shapes	4	To modify a count-controlled loop to produce a given outcome	<ul style="list-style-type: none"> - I can choose which values to change in a loop - I can identify the effect of changing the number of times a task is repeated - I can predict the outcome of a program containing a count-controlled loop 	Repeat, repetition, count-controlled loop, trace, value
Repetition in shapes	5	To decompose a program into parts	<ul style="list-style-type: none"> - I can explain that a computer can repeatedly call a procedure - I can identify 'chunks' of actions in the real world - I can use a procedure in a program 	Repeat, count-controlled loop, decompose, procedure
Repetition in shapes	6	To create a program that uses count-controlled loops to produce a given outcome	<ul style="list-style-type: none"> - I can design a program that includes count-controlled loops - I can develop my program by debugging it - I can make use of my design to write a program 	Count-controlled loop, procedure, debug, program

- use sequence, selection, and repetition in programs; work with variables and various forms of input and output
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<https://teachcomputing.org/curriculum/key-stage-2/data-and-information-data-logging>

Data logging	1	To explain that data gathered over time can be used to answer questions	<ul style="list-style-type: none"> - I can choose a data set to answer a given question - I can identify data that can be gathered over time - I can suggest questions that can be answered using a given data set 	Data, table (layout)
Data logging	2	To use a digital device to collect data automatically	<ul style="list-style-type: none"> - I can explain that sensors are input devices - I can identify that data from sensors can be recorded - I can use data from a sensor to answer a given question 	Input device, sensor, data logger
Data logging	3	To explain that a data logger collects 'data points' from sensors over time	<ul style="list-style-type: none"> - I can identify a suitable place to collect data - I can identify the intervals used to collect data - I can talk about the data that I have captured 	Data logger, logging, data point, interval
Data logging	4	To use data collected over a long duration to find information	<ul style="list-style-type: none"> - I can import a data set - I can use a computer program to sort data - I can use a computer to view data in different ways 	Analyse, data set, import, export
Data logging	5	To identify the data needed to answer questions	<ul style="list-style-type: none"> - I can plan how to collect data using a data logger - I can propose a question that can be answered using logged data - I can use a data logger to collect data 	Data, data logger, logged, collection
Data logging	6	To use collected data to answer questions	<ul style="list-style-type: none"> - I can draw conclusions from the data that I have collected - I can explain the benefits of using a data logger - I can interpret data that has been collected using a data logger 	Analyse, review, conclusion

- 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.

- Copyright and ownership

- Self-image and identity

<https://teachcomputing.org/curriculum/key-stage-2/creating-media-photo-editing>

Photo editing	1	To explain that digital images can be changed	<ul style="list-style-type: none"> - I can explain the effect that editing can have on an image - I can explore how images can be changed in real life - I can identify changes that we can make to an image 	Image, edit, arrange, select, digital, crop, undo, save
Photo editing	2	To change the composition of an image	<ul style="list-style-type: none"> - I can change the composition of an image by selecting parts of it - I can consider why someone might want to change the composition of an image - I can explain what has changed in an edited image 	Image, search, save, copyright, composition, edit, save, pixels, crop, rotate, flip
Photo editing	3	To describe how images can be changed for different uses	<ul style="list-style-type: none"> - I can choose effects to make my image fit a scenario - I can explain why my choices fit a scenario - I can talk about changes made to images 	Image, adjustments, effects, colours, hue/saturation, sepia, save, version, illustrator, vignette
Photo editing	4	To make good choices when selecting different tools	<ul style="list-style-type: none"> - I can choose appropriate tools to retouch an image - I can give examples of positive and negative effects that retouching can have on an image - I can identify how an image has been retouched 	Image, edit, retouch, clone, recolour, magic wand, select, adjust, sharpen, brighten
Photo editing	5	To recognise that not all images are real	<ul style="list-style-type: none"> - I can combine parts of images to create new images - I can sort images into 'fake' or 'real' and explain my choices - I can talk about fake images around me 	Image, fake, real, composite, cut, copy, paste, alter, background, foreground
Photo editing	6	To evaluate how changes can improve an image	<ul style="list-style-type: none"> - I can compare the original image with my completed publication - I can consider the effect of adding other elements to my work - I can evaluate the impact of my publication on others through feedback 	Image, publication, elements, original, font style, shapes, border, layer

- 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
- 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

<https://teachcomputing.org/curriculum/key-stage-2/programming-b-repetition-in-games>

Repetition in games	1	To develop the use of count-controlled loops in a different programming environment	- I can list an everyday task as a set of instructions including repetition - I can modify a snippet of code to create a given outcome - I can predict the outcome of a snippet of code	Scratch, programming, sprite, blocks, code, loop, repeat, value
Repetition in games	2	To explain that in programming there are infinite loops and count controlled loops	- I can choose when to use a count-controlled and an infinite loop - I can modify loops to produce a given outcome - I can recognise that some programming languages enable more than one process to be run at once	Block, repeat, forever, infinite loop, count-controlled loop, costume
Repetition in games	3	To develop a design which includes two or more loops which run at the same time	- I can choose which action will be repeated for each object - I can evaluate the effectiveness of the repeated sequences used in my program - I can explain what the outcome of the repeated action should be	Repetition, forever, infinite loop, count-controlled loop, animate, costume, event block, duplicate
Repetition in games	4	To modify an infinite loop in a given program	- I can explain the effect of my changes - I can identify which parts of a loop can be changed - I can re-use existing code snippets on new sprites	Block, repeat, forever, infinite loop, modify, design
Repetition in games	5	To design a project that includes repetition	- I can develop my own design explaining what my project will do - I can evaluate the use of repetition in a project - I can select key parts of a given project to use in my own design	Infinite loop, count-controlled loop, repetition, design, sprite, algorithm
Repetition in games	6	To create a project that includes repetition	- I can build a program that follows my design - I can evaluate the steps I followed when building my project - I can refine the algorithm in my design	Repetition, design, algorithm, duplicate, debug, refine, evaluate

UKS2

Statement Number	National Curriculum Statement
2.1	design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
2.2	use sequence, selection, and repetition in programs; work with variables and various forms of input and output
2.3	use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
2.4	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
2.5	use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
2.6	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
2.7	use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Year 5

- 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
- 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
- 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.

- Copyright and ownership

<https://teachcomputing.org/curriculum/key-stage-2/computing-systems-and-networks-sharing-information>

Sharing information	1	To explain that computers can be connected together to form systems	<ul style="list-style-type: none"> - I can describe that a computer system features inputs, processes, and outputs - I can explain that computer systems communicate with other devices - I can explain that systems are built using a number of parts 	System, connection, digital, input, process, output
Sharing information	2	To recognise the role of computer systems in our lives	<ul style="list-style-type: none"> - I can explain the benefits of a given computer system - I can identify tasks that are managed by computer systems - I can identify the human elements of a computer system 	System, connection, digital, input, process, output
Sharing information	3	To recognise how information is transferred over the internet	<ul style="list-style-type: none"> - I can explain that data is transferred over networks in packets - I can explain that networked digital devices have unique addresses - I can recognise that data is transferred using agreed methods 	Protocol, address, packet
Sharing information	4	To explain how sharing information online lets people in different places work together	<ul style="list-style-type: none"> - I can explain that the internet allows different media to be shared - I can recognise that connected digital devices can allow us to access shared files stored online - I can send information over the internet in different ways 	Chat, explore, slide deck
Sharing information	5	To contribute to a shared project online	<ul style="list-style-type: none"> - I can compare working online with working offline - I can make thoughtful suggestions on my group's work - I can suggest strategies to ensure successful group work 	Chat, explore

Sharing information	6	To evaluate different ways of working together online	<ul style="list-style-type: none">- I can explain how the internet enables effective collaboration- I can identify different ways of working together online- I can recognise that working together on the internet can be public or private	Reuse, remix, collaboration
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- Managing online information

- Online relationships

- Online reputation

- Self-image and identity

<https://teachcomputing.org/curriculum/key-stage-2/creating-media-video-editing>

Video editing	1	To recognise video as moving pictures, which can include audio	<ul style="list-style-type: none"> - I can explain that a video can include both visual and audio media - I can explain the benefits of adding audio to a video - I can plan a video project using a storyboard 	Video, audio, recording, storyboard, script, soundtrack, dialogue
Video editing	2	To identify digital devices that can record video	<ul style="list-style-type: none"> - I can choose the most suitable digital device for recording my project - I can identify and name digital devices that can record video and sound - I can locate and identify the working features of a digital device that can record video 	Video, audio, recording, capture, zoom, storage, digital, tape
Video editing	3	To capture video using a digital device	<ul style="list-style-type: none"> - I can demonstrate suitable methods of using a digital device to capture my video - I can demonstrate the safe use and handling of devices - I can select a suitable device and software to capture my video 	Video, audio, AV (audiovisual), recording, save, videographer Video techniques: Zoom, pan, tilt, angle
Video editing	4	To recognise the features of an effective video	<ul style="list-style-type: none"> - I can explain why lighting and angle are important in creating an effective video - I can list some of the features of an effective video - I can record a video that demonstrates some of the features of an effective video 	Video, lighting, setting, YouTuber, content, light, audio/sound, camera angle, colour
Video editing	5	To identify that video can be improved through reshooting and editing	<ul style="list-style-type: none"> - I can explain how to improve a video by reshooting and editing - I can select the correct tools to make edits to my video - I can store, retrieve, and export my recording to a computer 	Export, computer, Microsoft Movie Maker, split, trim/clip, edit, titles, end credits, timeline, transitions, audio, soundtrack, content, retake/reshoot (choose agreed language)
Video editing	6	To consider the impact of the choices made when making and sharing a video	<ul style="list-style-type: none"> - I can evaluate my video and share my opinions - I can make edits to my video and improve the final outcome - I can recognise that my choices when making a video will impact on the quality of the final outcome 	Video, special effects, title screen, end credits, export, constructive feedback

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- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
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<https://teachcomputing.org/curriculum/key-stage-2/programming-a-selection-in-physical-computing>

Selection in physical computing	1	To control a simple circuit connected to a computer	<ul style="list-style-type: none"> - I can build a simple circuit to connect a microcontroller to a computer - I can explain why I used an infinite loop - I can program a microcontroller to light an LED 	Microcontroller, Crumble controller, components, LED, Sparkle, crocodile clips, connect, battery box, program, repetition, infinite loop
Selection in physical computing	2	To write a program that includes count-controlled loops	<ul style="list-style-type: none"> - I can connect more than one output device to a microcontroller - I can decide which output devices I control with a count-controlled loop - I can design sequences for given output devices 	Microcontroller, Crumble controller, output devices, motor, LED, Sparkle, crocodile clips, connect, battery box, program, repetition, count-controlled loop
Selection in physical computing	3	To explain that a loop can stop when a condition is met, eg number of times	<ul style="list-style-type: none"> - I can experiment with a 'do until' loop - I can explain that a condition is something that can either be true or false (eg whether a value is more than 10, or whether a button has been pressed) - I can program a microcontroller to respond to an input 	Microcontroller, Crumble controller, components, switch, motor, LED, Sparkle, crocodile clips, connect, battery box, program, condition, true, false, input
Selection in physical computing	4	To conclude that a loop can be used to repeatedly check whether a condition has been met	<ul style="list-style-type: none"> - I can explain that a condition being met can start an action - I can identify a condition and an action in my project - I can use selection (an 'if... then...' statement) to direct the flow of a program 	Microcontroller, output devices, selection, condition, action
Selection in physical computing	5	To design a physical project that includes selection	<ul style="list-style-type: none"> - I can create a detailed drawing of my project - I can describe what my project will do (the task) - I can identify a condition to start an action (real world) 	Task, design, selection, repetition, condition, action, microcontroller, Crumble controller, output devices, motor, LED, Sparkle, switch, crocodile clips, battery box
Selection in physical computing	6	To create a controllable system that includes selection	<ul style="list-style-type: none"> - I can test and debug my project - I can use selection to produce an intended outcome - I can write an algorithm to control lights and a motor 	Task, design, selection, repetition, condition, action, microcontroller, Crumble controller, output devices, motor, LED, Sparkle, switch, algorithm, program, debug, evaluate

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<https://teachcomputing.org/curriculum/key-stage-2/data-and-information-flat-file-databases>

Flat-file databases	1	To use a form to record information	<ul style="list-style-type: none"> - I can create multiple questions about the same field - I can explain how information can be recorded - I can order, sort, and group my data cards 	Database, data, information, record, field, sort, order, group
Flat-file databases	2	To compare paper and computer-based databases	<ul style="list-style-type: none"> - I can choose which field to sort data by to answer a given question - I can explain what a 'field' and a 'record' is in a database - I can navigate a flat-file database to compare different views of information 	Database, data, field, record, sort, order
Flat-file databases	3	To outline how grouping and then sorting data allows us to answer questions	<ul style="list-style-type: none"> - I can combine grouping and sorting to answer more specific questions - I can explain how information can be grouped - I can group information to answer questions 	Database, record, field, group, search, sort, order
Flat-file databases	4	To explain that tools can be used to select specific data	<ul style="list-style-type: none"> - I can choose multiple criteria to answer a given question - I can choose which field and value are required to answer a given question - I can outline how 'AND' and 'OR' can be used to refine data selection 	Database, record, field, value, search, criteria
Flat-file databases	5	To explain that computer programs can be used to compare data visually	<ul style="list-style-type: none"> - I can explain the benefits of using a computer to create graphs - I can refine a chart by selecting a particular filter - I can select an appropriate chart to visually compare data 	Database, record, field, graph, chart, axis, compare, filter
Flat-file databases	6	To apply my knowledge of a database to ask and answer real-world questions	<ul style="list-style-type: none"> - I can ask questions that will need more than one field to answer - I can present my findings to a group - I can refine a search in a real-world context 	Database, field, record, graph, chart, presentation

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- Copyright and ownership

<https://teachcomputing.org/curriculum/key-stage-2/creating-media-vector-drawing>

Vector drawing	1	To identify that drawing tools can be used to produce different outcomes	<ul style="list-style-type: none"> - I can discuss how a vector drawing is different from paper-based drawings - I can identify the main drawing tools - I can recognise that vector drawings are made using shapes 	Vector, drawing tools, shapes, object, icons, toolbar
Vector drawing	2	To create a vector drawing by combining shapes	<ul style="list-style-type: none"> - I can explain that each element added to a vector drawing is an object - I can identify the shapes used to make a vector drawing - I can move, resize, and rotate objects I have duplicated 	Vector drawing, object, move, resize, colour, rotate, duplicate/copy
Vector drawing	3	To use tools to achieve a desired effect	<ul style="list-style-type: none"> - I can explain how alignment grids and resize handles can be used to improve consistency - I can modify objects to create different effects - I can use the zoom tool to help me add detail to my drawings 	Organise, zoom, select, rotate, object, alignment grid, resize, handles, consistency, modify
Vector drawing	4	To recognise that vector drawings consist of layers	<ul style="list-style-type: none"> - I can change the order of layers in a vector drawing - I can identify that each added object creates a new layer in the drawing - I can identify which objects are in the front layer or in the back layer of a drawing 	Layers, object, front, back, order
Vector drawing	5	To group objects to make them easier to work with	<ul style="list-style-type: none"> - I can copy part of a drawing by duplicating several objects - I can group to create a single object - I can reuse a group of objects to further develop my vector drawing 	Copy, paste, group, ungroup, duplicate, object, vector drawing, reuse
Vector drawing	6	To evaluate my vector drawing	<ul style="list-style-type: none"> - I can apply what I have learned about vector drawings - I can suggest improvements to a vector drawing - I create alternatives to vector drawings 	Improvement, evaluate, alternatives, vector drawing

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<https://teachcomputing.org/curriculum/key-stage-2/programming-b-selection-in-quizzes>

Selection in quizzes	1	To explain how selection is used in computer programs	<ul style="list-style-type: none"> - I can identify conditions in a program - I can modify a condition in a program - I can recall how conditions are used in selection 	Selection, condition, true, false, count controlled loop
Selection in quizzes	2	To relate that a conditional statement connects a condition to an outcome	<ul style="list-style-type: none"> - I can create a program with different outcomes using selection - I can identify the condition and outcomes in an if..then... else statement - I can use selection in an infinite loop to check a condition 	Selection, condition, true, false, outcomes, conditional statement - the linking together of a condition and outcomes- algorithm, program, debug
Selection in quizzes	3	To explain how selection directs the flow of a program	<ul style="list-style-type: none"> - I can design the flow of a program which contains 'if... then... else...' - I can explain that program flow can branch according to a condition - I can show that a condition can direct program flow in one of two ways 	Selection, condition, true, false, outcomes, question, answer, algorithm, program, debug
Selection in quizzes	4	To design a program which uses selection	<ul style="list-style-type: none"> - I can identify the outcome of user input in an algorithm - I can outline a given task - I can use a design format to outline my project 	Task, design, algorithm, input, program, selection, condition, outcomes
Selection in quizzes	5	To create a program which uses selection	<ul style="list-style-type: none"> - I can implement my algorithm to create the first section of my program - I can share my program with others - I can test my program 	Implement, design, algorithm, program, selection, condition, outcome, test, run
Selection in quizzes	6	To evaluate my program	<ul style="list-style-type: none"> - I can extend my program further - I can identify ways the program could be improved - I can identify what setup code my project needs 	Implement, design, algorithm, program, debug, test, setup, selection, condition, outcome, share, evaluate, constructive

Year 6

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- 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
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- Managing online information

- Online reputation

<https://teachcomputing.org/curriculum/key-stage-2/computing-systems-and-networks-communication>

Communication	1	To identify how to use a search engine	<ul style="list-style-type: none"> - I can compare results from different search engines - I can complete a web search to find specific information - I can refine my search 	Search, search engine, Google, Bing, Yahoo!, Swisscows, DuckDuckGo, refine
Communication	2	To describe how search engines select results	<ul style="list-style-type: none"> - I can explain why we need tools to find things online - I can recognise the role of web crawlers in creating an index - I can relate a search term to the search engine's index 	Index, crawler, bot, search engine
Communication	3	To explain how search results are ranked	<ul style="list-style-type: none"> - I can explain that a search engine follows rules to rank relevant pages - I can explain that search results are ordered - I can suggest some of the criteria that a search engine checks to decide on the order of results 	Ranking, search engine, search engine optimisation, links, web crawlers
Communication	4	To recognise why the order of results is important, and to whom	<ul style="list-style-type: none"> - I can describe some of the ways that search results can be influenced - I can explain how search engines make money - I can recognise some of the limitations of search engines 	Searching, search engine, web crawler, content creator, selection, ranking
Communication	5	To recognise how we communicate using technology	<ul style="list-style-type: none"> - I can choose methods of communication to suit particular purposes - I can explain the different ways in which people communicate - I can identify that there are a variety of ways of communicating over the internet 	Communication, internet

Communication	6	To evaluate different methods of online communication	<ul style="list-style-type: none"> - I can compare different methods of communicating on the internet - I can decide when I should and should not share - I can explain that communication on the internet may not be private 	Communication, public, private, one-way, two-way, one-to-one, one-to-many, SMS, email, WhatsApp, blog, YouTube, Twitter, BBC Newsround
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- Copyright and ownership

- Online relationships

<https://teachcomputing.org/curriculum/key-stage-2/creating-media-web-page-creation>

Web page creation	1	To review an existing website and consider its structure	<ul style="list-style-type: none"> - I can discuss the different types of media used on websites - I can explore a website - I know that websites are written in HTML 	Website, web page, browser, media, Hypertext Markup Language (HTML)
Web page creation	2	To plan the features of a web page	<ul style="list-style-type: none"> - I can draw a web page layout that suits my purpose - I can recognise the common features of a web page - I can suggest media to include on my page 	Web page, website, logo, layout, header, media, purpose
Web page creation	3	To consider the ownership and use of images (copyright)	<ul style="list-style-type: none"> - I can describe what is meant by the term 'fair use' - I can find copyright-free images - I can say why I should use copyright-free images 	Copyright, fair use
Web page creation	4	To recognise the need to preview pages	<ul style="list-style-type: none"> - I can add content to my own web page - I can evaluate what my web page looks like on different devices and suggest/make edits. - I can preview what my web page looks like 	Web page, home page, preview, evaluate, device, Google Sites
Web page creation	5	To outline the need for a navigation path	<ul style="list-style-type: none"> - I can describe why navigation paths are useful - I can explain what a navigation path is - I can make multiple web pages and link them using hyperlinks 	Website, web page, breadcrumb trail, navigation, hyperlink, subpage
Web page creation	6	To recognise the implications of linking to content owned by other people	<ul style="list-style-type: none"> - I can create hyperlinks to link to other people's work - I can evaluate the user experience of a website - I can explain the implication of linking to content owned by others 	Hyperlink, evaluate, website, web page, implication, external link, embed

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<https://teachcomputing.org/curriculum/key-stage-2/programming-a-variables-in-games>

Variables in games	1	To define a 'variable' as something that is changeable	- I can explain that the way that a variable changes can be defined - I can identify examples of information that is variable - I can identify that variables can hold numbers or letters	Variable, change, name, value
Variables in games	2	To explain why a variable is used in a program	- I can explain that a variable has a name and a value - I can identify a program variable as a placeholder in memory for a single value - I can recognise that the value of a variable can be changed	Variable, name, value, set, change
Variables in games	3	To choose how to improve a game by using variables	- I can decide where in a program to change a variable - I can make use of an event in a program to set a variable - I can recognise that the value of a variable can be used by a program	Variable, set, change, design, event
Variables in games	4	To design a project that builds on a given example	- I can choose the artwork for my project - I can create algorithms for my project - I can explain my design choices	Design, algorithm, code
Variables in games	5	To use my design to create a project	- I can choose a name that identifies the role of a variable - I can create the artwork for my project - I can test the code that I have written	Task, algorithm, design, artwork, program, project, code, test, debug
Variables in games	6	To evaluate my project	- I can extend my game further using more variables - I can identify ways that my game could be improved - I can share my game with others	Improve, evaluate, share

- 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

<https://teachcomputing.org/curriculum/key-stage-2/data-and-information/spreadsheets>

Introduction to spreadsheets	1	To identify questions which can be answered using data	<ul style="list-style-type: none"> - I can answer questions from an existing data set - I can ask simple relevant questions which can be answered using data - I can explain the relevance of data headings 	Spreadsheet, data, data heading, data set, cells, columns and rows
Introduction to spreadsheets	2	To explain that objects can be described using data	<ul style="list-style-type: none"> - I can apply an appropriate number format to a cell - I can build a data set in a spreadsheet application - I can explain what an item of data is 	Data, data item, data set, object, spreadsheet application, format, common attribute
Introduction to spreadsheets	3	To explain that formula can be used to produce calculated data	<ul style="list-style-type: none"> - I can construct a formula in a spreadsheet - I can explain the relevance of a cell's data type - I can identify that changing inputs changes outputs 	Formula, calculation, data, spreadsheet, input, output. cells, cell reference
Introduction to spreadsheets	4	To apply formulas to data, including duplicating	<ul style="list-style-type: none"> - I can apply a formula to multiple cells by duplicating it - I can create a formula which includes a range of cells - I can recognise that data can be calculated using different operations 	Data, calculate, operation, formula, cell, range, duplicate, sigma
Introduction to spreadsheets	5	To create a spreadsheet to plan an event	<ul style="list-style-type: none"> - I can apply a formula to calculate the data I need to answer questions - I can explain why data should be organised - I can use a spreadsheet to answer questions 	Propose, question, data set, data, organised, formula
Introduction to spreadsheets	6	To choose suitable ways to present data	<ul style="list-style-type: none"> - I can produce a graph - I can suggest when to use a table or graph - I can use a graph to show the answer to questions 	Graph, chart, evaluate, results, comparison, questions, software, tools, data

- 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.

- Privacy and security

<https://teachcomputing.org/curriculum/key-stage-2/creating-media-3d-modelling>

3D Modelling	1	To use a computer to create and manipulate three-dimensional (3D) digital objects	<ul style="list-style-type: none"> - I can discuss the similarities and differences between 2D and 3D shapes - I can explain why we might represent 3D objects on a computer - I can select, move, and delete a digital 3D shape 	2D, 3D, 3D object, 3D space, view
3D Modelling	2	To compare working digitally with 2D and 3D graphics	<ul style="list-style-type: none"> - I can change the colour of a 3D object - I can identify how graphical objects can be modified - I can resize a 3D object 	2D, 3D, 3D object, 3D space, resize, colour, lift
3D Modelling	3	To construct a digital 3D model of a physical object	<ul style="list-style-type: none"> - I can position 3D objects in relation to each other - I can rotate a 3D object - I can select and duplicate multiple 3D objects 	Rotate, position, select, duplicate
3D Modelling	4	To identify that physical objects can be broken down into a collection of 3D shapes	<ul style="list-style-type: none"> - I can create digital 3D objects of an appropriate size - I can group a digital 3D shape and a placeholder to create a hole in an object - I can identify the 3D shapes needed to create a model of a real-world object 	Dimensions, placeholder, hole, group, ungroup
3D Modelling	5	To design a digital model by combining 3D objects	<ul style="list-style-type: none"> - I can choose which 3D objects I need to construct my model - I can modify multiple 3D objects - I can plan my 3D model 	Resize, group, ungroup, design
3D Modelling	6	To develop and improve a digital 3D model	<ul style="list-style-type: none"> - I can decide how my model can be improved - I can evaluate my model against a given criterion - I can modify my model to improve it 	Modify, evaluate, improve

- 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 program
- 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

<https://teachcomputing.org/curriculum/key-stage-2/programming-b-sensing>

Sensing	1	To create a program to run on a controllable device	<ul style="list-style-type: none"> - I can apply my knowledge of programming to a new environment - I can test my program on an emulator - I can transfer my program to a controllable device 	Micro:bit, MakeCode, input, process, output, flashing, USB
Sensing	2	To explain that selection can control the flow of a program	<ul style="list-style-type: none"> - I can determine the flow of a program using selection - I can identify examples of conditions in the real world - I can use a variable in an if... then... else... statement to select the flow of a program 	Selection, condition, if... then... else, variable, random
Sensing	3	To update a variable with a user input	<ul style="list-style-type: none"> - I can experiment with different physical inputs - I can explain that if you read a variable, the value remains - I can use a condition to change a variable 	Input, selection, condition, variable, sensing, accelerometer
Sensing	4	To use an conditional statement to compare a variable to a value	<ul style="list-style-type: none"> - I can explain the importance of the order of conditions in else if statements - I can modify a program to achieve a different outcome - I can use an operand (e.g. <=>) in an if... then... statement 	Compass, direction, variable, navigation
Sensing	5	To design a project that uses inputs and outputs on a controllable device	<ul style="list-style-type: none"> - I can decide what variables to include in a project - I can design the algorithm for my project - I can design the program flow for my project 	Micro:bit, design, task, algorithm, variable, step counter
Sensing	6	To develop a program to use inputs and outputs on a controllable device	<ul style="list-style-type: none"> - I can create a program based on my design - I can test my program against my design - I can use a range of approaches to find and fix bugs 	Plan, create, code, test, debug