

Long Term Plan 2025-2026

EYFS. Early learning goals.

Physical development – ELG - Fine motor skills. Use of remote controls

Understanding of the world ELG- Past and present and People, culture and Communities- Talk about lives of people around them and technology/devices at home. Describe immediate environment talking about technology at home and in books (link Yr 1 Summer 2- computer systems technology around us)

Continuous provision links:

Programming- use of Beebots and remote-control vehicles (link Yr 1 Autumn I/Spring I)

Spring 2 PSHE Internet Safety and harms

Teach Computing	Key Stage 1		Key Stage 2			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn I	Computer Systems and Networks Technology All Around Us	Computer systems and networks IT around us	Computer systems and networks Connecting computers	Computer systems and networks The Internet	Computer systems and networks Systems and searching	Computer systems and networks Communication and collaboration
Autumn II	Creating media Digital painting		Creating media Stop frame animation	Programming Repetition in shapes	Creating media Video production	Creating media Web page creation
Spring I *PSHE Internet safety and harm unit Safer Internet Day	Programming Moving a robot	Programming Robot algorithms	Programming Sequencing sounds	Creating media Photo editing	Programming Selection in physical computing	Programming Variables in games
Spring II	Data and information Grouping data	Data and information Pictograms	Data and information Branching databases	Programming Repetition in games	Data and information Flat file databases	Data and information Introduction to spreadsheets
Summer I	Creating media Digital writing	Creating media Digital music	Creating media Desktop publishing	Data and Information Data Logging	Creating media Introduction to vector graphics	Creating media 3D modelling
Summer II	Programming Programming animations	Programming Programming quizzes	Programming Events/actions in programs	Creating media Audio production	Programming Selection in quizzes	Programming Sensing movement
		Creating media Digital photography				

Year 1	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit Title	Computer systems + networks Technology around us	Creating media Digital painting	Programming Moving a robot	Data and information Grouping data	Creating media Digital writing	Programming Programming animations
Learning Objectives	<u>Lesson 1</u> I know that technology is something that helps us I know how to locate examples of technology in the classroom I know how to explain how these technology examples help us I know how to explain where to go for help when I have concerns about content or contact when online <u>Lesson 2</u> I know how to name the main parts of a computer I know how to switch on and log into a computer I know how to use a mouse to click and drag <u>Lesson 3</u> I know how to use a mouse in different ways I know how to use a mouse to open a program I know how to click and drag to make objects on a screen I know how to use a mouse to create a picture. <u>Lesson 4</u> I know how to use a keyboard to type on a computer I know how to say what a keyboard is for	<u>Lesson 1 & 2</u> I know how to make marks on a screen and explain which tools I used I know how to draw lines on a screen and explain which tools I used I know how to use the paint tools to draw a picture I know how to make marks with the square and line tools I know how to use the shape and line tools effectively I know how to use the shape and line tools to recreate the work of an artist <u>Lesson 3</u> I know how to choose appropriate shapes I know how to make appropriate colour choices I know how to create a picture in the style of an artist <u>Lesson 4</u> I know how to make dots of colour on the page I know how to change the colour and brush sizes I know how to use dots of colour to create a picture in the style of an artist on my own <u>Lesson 5</u> I know how to explain that pictures can be made in lots of different ways I know how to spot the differences between painting on a computer and on paper	<u>Lesson 1</u> I know how predict the outcome of a command on a device I how to match a command to an outcome I know how to run a command on a device <u>Lesson 2</u> I know how to use the same instructions to create different algorithms I know how to use an algorithm to program a sequence of a floor robot I know how to show the difference in outcomes between two sequences that consist of the same commands <u>Lesson 3</u> I know how to follow a sequence I know how to predict the outcome of a sequence I know how to compare my prediction to the program outcome <u>Lesson 4</u> I know how to explain what my program should do I know how to choose the order of commands in a sequence I know how to debug my program <u>Lesson 5</u> I know how to find more than one solution to a problem	<u>Lesson 1</u> I know how to describe objects using labels I know how to match objects to groups I know how to identify the label for a group of objects <u>Lesson 2 & 3</u> I know how to count objects I know how to group objects I know how to count a group of objects I know how to describe an object I know how to describe a property of an object I know how to find objects with similar properties <u>Lesson 4</u> I know how to group similar objects I know how to group objects in more than one way I know how to count how many objects share a property <u>Lesson 5</u> I know how to choose how to group objects I know how to describe groups of objects I know how to record how many objects are in a group <u>Lesson 6</u> I know how to group objects together to answer a question I know how to compare groups of objects	<u>Lesson 1 & 2</u> I know how to open a word processor I know how to keys on a keyboard I know how to identify and find keys on a keyboard I know how to enter text into a computer I know how to use letter, number, and space keys I know how to use backspace to remove text <u>Lesson 3</u> I know how to type capital letters I know how to explain what the keys that I have learnt about already do I know how to identify the toolbar and use bold, italic, and underline <u>Lesson 4</u> I know how to select a word I know how to select all of the text I know how to change the font <u>Lesson 5</u> I know if my changes have improved my writing I know how to use 'undo' to remove changes <u>Lesson 6</u> I know how to make changes to a text on computer I know the differences between typing and writing	Lesson 1 I know how to find the commands to move a sprite I know how to use commands to move a sprite Lesson 2 I know how to use more than one block by joining them together I know how to use a Start block in a program I know how to run my program Lesson 3 I know how to find blocks that have numbers I know how to change the value I know how to say what happens when I change a value Lesson 4 I know how to show that a project know how to include more than one sprite I know how to delete a sprite I know how to add blocks to each of my sprites Lesson 5 I know how to choose appropriate artwork for my project I know how to decide how each sprite will move I know how to create an algorithm for each sprite Lesson 6 I know how to use sprites that match my design

	<i>I know how to type my name on a computer</i> <i>I know how to save my work to a file</i> <u>Lesson 5</u> <i>I know how to use the keyboard to edit text</i> <i>I know how to open my work from a file</i> <i>I know how to use the arrow keys to move the cursor</i> <i>I know how to delete letters</i> <u>Lesson 6</u> <i>I know how to create rules for using technology responsibly</i> <i>I know how to identify rules to keep us safe and healthy when we are using technology in and beyond the home</i> <i>I know how to give examples of some of these rules</i> <i>I know how to discuss how we benefit from these rules</i>	<i>I know how to say whether I prefer painting using a computer or using paper</i> <u>Lesson 6</u> <i>I know that pictures can be made in many different ways</i> <i>I know the differences between art made on paper and on a computer</i>	<i>I know how to plan and use two different programs to get to the same place</i>	<i>I know how to record and share what I have found</i>		<i>I know how to add programming blocks based on my algorithm</i> <i>I know how to test the programs I have created</i>
<i>Specific Knowledge (to be known by the end of the unit)</i>	<i>Technology is something that has been made to help us</i> <i>Technology doesn't have to be digital/electronic</i> <i>Computers need to be logged into.</i> <i>Computers have different parts that we use.</i> <i>The mouse key can be clicked and held to drag objects around the screen.</i>	<i>Know the following paint tools and what they do: paintbrush, pencil, fill tool, eraser, undo, shape tool, and brush style.</i> <i>Dots and lines can be made and their colours and sizes can be changed.</i>	<i>The buttons on a floor robot and what they do.</i> <i>The precise instructions needed to move the robot – forwards, backwards, left turn, right turn.</i> <i>Algorithms are a set of clear, precise, and ordered instructions, and that a computer program is the implementation of an algorithm on a digital device.</i>	<i>An object is something that has properties that can be labelled.</i> <i>The data that is collected is based on the properties.</i> <i>Some objects have similar properties and can be grouped together.</i> <i>Know why the objects are grouped together.</i> <i>Know what the properties of a group are.</i>	<i>Space bar provides a space between words and numbers.</i> <i>Backspace deletes words and numbers.</i> <i>Caps Lock turns the writing into capital letters.</i> <i>The toolbar is at the top of the screen and gives options to change what the words look like (italics, bold, underlined, different fonts)</i>	<i>Know the programming blocks of Scratch Jr</i> <i>Know a sprite is a moveable object which can be programmed</i> <i>Know that the 'code' shows what will happen in a program.</i>

	Moving the mouse moves a pointer around the screen A computer keyboard is for typing A saved piece of work can be named and found again A saved piece of work can be found in a named folder We have rules for computing to keep us safe				The mouse can be used to double click and highlight words for changing.	
Vocabulary	Computer Mouse Keyboard trackpad Screen Double-click Type/typing Save folder	paint program, tool, paintbrush, erase, fill, undo, shape tools, line tool, fill tool, undo tool, colour, brush style, brush size, pictures, painting, computers	Bee-Bot, forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, route, plan, algorithm, program.	object, label, group, search, image, property, colour, size, shape, value, data set, more, less, most, fewest, least, the same	word processor, keyboard, keys, letters, type, numbers, space, backspace, text cursor, capital letters, toolbar, bold, italic, underline, mouse, select, font, undo, redo, format, compare, typing, writing.	ScratchJr, command, sprite, compare, programming, area, block, joining, start, run, program, background, delete, reset, algorithm, predict, effect, change, value, instructions, design.
Year 2	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit Title	Computer systems and networks IT around us	Creating Media Digital Photography	Programming Robot algorithms	Data and information Pictograms	Creating media Digital music	Programming Programming quizzes
Learning Objectives	Lesson 1 I know how to identify examples of computers I know how to describe some uses of computers I know how to identify that a computer is a part of IT Lesson 2 I know how to identify examples of IT I know how to sort school IT by what it's used for I know how to identify that some IT can be used in more than one way	Lesson 1 I know how to recognise what devices know how to be used to take photographs I know how to talk about how to take a photograph I know how to explain what I did to capture a digital photo Lesson 2 I know how to explain the process of taking a good photograph I know how to take photos in both landscape and portrait format I know how to explain why a photo looks better in portrait or landscape format	Lesson 1 I know how to follow instructions given by someone else I know how to choose a series of words that can be enacted as a sequence I know how to give clear instructions Lesson 2 I know how to use the same instructions to create different algorithms I know how to use an algorithm to program a sequence on a floor robot I know how to show the difference in outcomes between	Lesson 1 I can record data in a tally chart I can represent a tally count as a total I can compare totals in a tally chart Lesson 2 I can enter data onto a computer I can use a computer to view data in a different format I can use pictograms to answer simple questions about objects Lesson 3 I can organise data in a tally chart	Lesson 1 I can identify simple differences in pieces of music I can describe music using adjectives I can say what I do and don't like about a piece of music Lesson 2 I can create a rhythm pattern I can play an instrument following a rhythm pattern I can explain that music is created and played by humans Lesson 3 I can connect images with sounds	Lesson 1 I know how to identify the start of a sequence I know how to identify that a program needs to be started I know how to show how to run my program Lesson 2 I know how to predict the outcome of a sequence of commands I know how to match two sequences with the same outcome I know how to change the outcome of a sequence of commands

	<i>Lesson 3</i> I know how to find examples of information technology I know how to sort IT by where it is found I know how to talk about uses of information technology <i>Lesson 4</i> I know how to recognise common types of technology I know how to demonstrate how IT devices work together I know how to say why we use IT <i>Lesson 5</i> I know how to list different uses of information technology I know how to talk about different rules for using IT I know how to say how rules can help keep me safe <i>Lesson 6</i> I know how to identify the choices that I make when using IT I know how to use IT for different types of activities I know how to explain the need to use IT in different ways	<i>Lesson 3</i> I know how to identify what is wrong with a photograph I know how to discuss how to take a good photograph I know how to improve a photograph by retaking it <i>Lesson 4</i> I know how to explore the effect that light has on a photo I know how to experiment with different light sources I know how to explain why a picture may be unclear <i>Lesson 5</i> I know how to recognise that images know how to be changed I know how to use a tool to achieve a desired effect I know how to explain my choices <i>Lesson 6</i> I know how to apply a range of photography skills to capture a photo I know how to recognise which photos have been changed I know how to identify which photos are real and which have been changed	two sequences that consist of the same commands <i>Lesson 3</i> I know how to follow a sequence I know how to predict the outcome of a sequence I know how to compare my prediction to the program outcome <i>Lesson 4</i> I know how to explain the choices I made for my mat design I know how to identify different routes around my mat I know how to test my mat to make sure that it is usable <i>Lesson 5</i> I know how to explain what my algorithm should achieve I know how to create an algorithm to meet my goal I know how to use my algorithm to create a program <i>Lesson 6</i> I know how to test and debug each part of the program I know how to plan algorithms for different parts of a task I know how to put together the different parts of my program	I can use a tally chart to create a pictogram I can explain what the pictogram shows <i>Lesson 4</i> I can tally objects using a common attribute I can create a pictogram to arrange objects by an attribute I can answer 'more than'/'less than' and 'most/least' questions about an attribute <i>Lesson 5</i> I can choose a suitable attribute to compare people I can collect the data I need I can create a pictogram and draw conclusions from it <i>Lesson 6</i> I can use a computer program to present information in different ways I can share what I have found out using a computer I can give simple examples of why information should not be shared	I can use a computer to experiment with pitch I can relate an idea to a piece of music <i>Lesson 4</i> I can identify that music is a sequence of notes I can explain how my music can be played in different ways I can refine my musical pattern on a computer <i>Lesson 5</i> I can create a rhythm which represents an animal I've chosen I can create my animal's rhythm on a computer I can add a sequence of notes to my rhythm <i>Lesson 6</i> I can review my work I can explain how I changed my work I can listen to music and describe how it makes me feel	<i>Lesson 3</i> I know how to work out the actions of a sprite in an algorithm I know how to decide which blocks to use to meet the design I know how to build the sequences of blocks I need <i>Lesson 4</i> I know how to choose backgrounds for the design I know how to choose characters for the design I know how to create a program based on the new design <i>Lesson 5</i> I know how to choose the images for my own design I know how to create an algorithm I know how to build sequences of blocks to match my design <i>Lesson 6</i> I know how to compare my project to my design I know how to improve my project by adding features I know how to debug my program
Specific Knowledge (to be known by the end of the unit)	Computers are an example of Information technology. PCs, laptops and tablets are all examples of computers. Computers and IT can be found in the home, in schools, in shops, in places of work.	Know a photo can be taken on a digital device Know that a photo can be changed on a device Know that a good photograph has its subjects clearly in the photo	Know the instructions: forwards, backwards, left turn, right turn. Know a sequence of commands need to be inputted to make a program work. Algorithms are a set of clear, precise, and ordered instructions,	Know that data means statistics. Know that data can be represented in a tally chart. Know that a pictogram has a key to explain how many each picture is worth.	Know how to press a note on screen and that it will make a corresponding sound. Know that music is designed to make us feel differently depending on the way it is structured.	Know that a sequence can be started with the 'on click' block Know that a sequence of blocks has an outcome Predict the outcome of a sequence with support

	<i>IT is designed to help us do jobs faster or easier</i>	<i>Know that a photo can be portrait or landscape</i>	<i>and can be changed to alter the sequence.</i>	<i>Know the computer program sorts the information based on the inputs made. Know that the same data can be presented in different ways and might look different.</i>	<i>Know that tempo is the speed at which a piece of music is played. Know that pitch is how high or low the notes are.</i>	<i>Know that a program in ScratchJr can have different backgrounds Know that a sequence can be started using a variety of event blocks Know that a sequence has an outcome, and identify different programs that have the same outcome Know the backgrounds can be changed through the programming blocks</i>
Vocabulary	Information technology (IT), computer, barcode, scanner/scan	device, camera, photograph, capture, image, digital, landscape, portrait, framing, subject, compose, light sources, flash, focus, background, editing, filter, format, framing, lighting	instruction, sequence, clear, unambiguous, algorithm, program, order, prediction, artwork, design, route, mat, debugging, decomposition	more than, less than, most, least, common, popular, organise, data, object, tally chart, votes, total, pictogram, enter, data, compare, objects, count, explain, attribute, group, same, different, conclusion, block diagram, sharing	music, quiet, loud, feelings, emotions, pattern, rhythm, pulse, pitch, tempo, rhythm, notes, create, emotion, beat, instrument, open, edit.	sequence, command, program, run, start, outcome, predict, blocks, design, actions, sprite, project, modify, change, algorithm, build, match, compare, debug, features, evaluate, decomposition, code.
Year 3	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit Title	Computer systems and networks Connecting computers	Creating media Stop frame animation	Programming Sequencing sounds	Data and information Branching databases	Creating media Desktop publishing	Programming Events/actions in programs
Learning Objectives	Lesson 1 <i>I know how to explain that digital devices accept inputs I know how to explain that digital devices produce outputs I know how to follow a process I know how to explain what makes a secure password</i> Lesson 2 <i>I know how to classify input and output devices I know how to describe a simple process</i>	Lesson 1 <i>I know how to draw a sequence of pictures I know how to create an effective flipbook–style animation I know how to explain how an animation/flip book works</i> Lesson 2 <i>I know how to predict what an animation will look like I know how to explain why little changes are needed for each frame I know how to create an effective stop-frame animation</i>	Lesson 1 <i>I know how to identify the objects in a Scratch project (sprites, backdrops) I know how to explain that objects in Scratch have attributes (linked to) I know how to recognise that commands in Scratch are represented as blocks</i> Lesson 2 <i>I know how to create a program following a design and understand that each sprite is controlled by the commands I choose</i>	Lesson 1 <i>I know how to investigate questions with yes/no answers I know how to make up a yes/no question about a collection of objects I know how to create two groups of objects separated by one attribute</i> Lesson 2 <i>I know how to select an attribute to separate objects into groups I know how to create a group of objects within an existing group</i>	Lesson 1 <i>I know how to explain the difference between text and images I know how to recognise that text and images know how to communicate messages clearly I know how to identify the advantages and disadvantages of using text and images I understand how to use emojis respectfully online</i> Lesson 2 <i>I know how to change font style, size, and colours for a given purpose</i>	Lesson 1 <i>I know how to explain the relationship between an event and an action I know how to choose which keys to use for actions and explain my choices I know how to identify a way to improve a program</i> Lesson 2 <i>I know how to choose a character for my project I know how to choose a suitable size for a character in a maze I know how to program movement</i>

<i>I know how to design a digital device</i> Lesson 3 <i>I know how to explain how I use digital devices for different activities</i> <i>I know how to recognise similarities between using digital devices and using non-digital tools</i> <i>I know how to suggest differences between using digital devices and using non-digital tools</i> Lesson 4 <i>I know how to recognise different connections</i> <i>I know how to explain how messages are passed through multiple connections</i> <i>I know how to discuss why we need a network switch</i> Lesson 5 <i>I know how to recognise that a computer network is made up of a number of devices</i> <i>I know how to demonstrate how information know how to be passed between devices</i> <i>I know how to explain the role of a switch, server, and wireless access point in a network</i> Lesson 6	Lesson 3 <i>I know how to break down a story into settings, characters, and events</i> <i>I know how to describe an animation that is achievable on screen</i> <i>I know how to create a storyboard</i> Lesson 4 & 5 <i>I know how to use onion skinning to help me make small changes between frames</i> <i>I know how to review a sequence of frames to check my work</i> <i>I know how to evaluate the quality of my animation</i> <i>I know how to explain ways to make my animation better</i> <i>I know how to improve my animation based on feedback</i> Lesson 6 <i>I know how to add other media to my animation</i> <i>I know how to explain why I added other media to my animation</i> <i>I know how to evaluate my final film</i>	<i>I know how to predict the coding blocks used to move a sprite</i> <i>I know how to match coding blocks to their actions</i> Lesson 3 <i>I know how to start a program in different ways</i> <i>I know how to create a sequence of connected commands</i> <i>I know how to explain that the objects in my project will respond exactly to the code</i> Lesson 4 <i>I know how to explain what a sequence is</i> <i>I know how to combine sound commands</i> <i>I know how to order notes into a sequence</i> Lesson 5 <i>I know how to build a sequence of commands</i> <i>I know how to decide the actions for each sprite in a program</i> <i>I know how to make design choices for my artwork</i> Lesson 6 <i>I know how to identify and name the objects I will need for a project</i> <i>I know how to relate a task description to a design</i> <i>I know how to implement my algorithm as code</i>	<i>I know how to arrange objects into a tree structure</i> Lesson 3 <i>I know how to select objects to arrange in a branching database</i> <i>I know how to group objects using my own yes/no questions</i> <i>I know how to test my branching database to see if it works</i> Lesson 4 <i>I know how to create yes/no questions using given attributes</i> <i>I know how to compare two branching database structures</i> <i>I know how to explain that questions need to be ordered carefully to split objects into similarly sized groups</i> Lesson 5 <i>I know how to independently create questions to use in a branching database</i> <i>I know how to create questions that will enable objects to be uniquely identified</i> <i>I know how to create a physical version of a branching database</i> Lesson 6 <i>I know how to create a branching database that reflects my plan</i> <i>I know how to work with a partner to test my identification tool</i> <i>I know how to suggest real-world uses for branching databases</i>	<i>I know how to edit text</i> <i>I know how to explain that text know how to be changed to communicate more clearly</i> Lesson 3 <i>I know how to explain what 'page orientation' means</i> <i>I know how to recognise placeholders and say why they are important</i> <i>I know how to create a template for a particular purpose</i> Lesson 4 <i>I know how to choose the best locations for my content</i> <i>I know how to paste text and images to create a magazine cover</i> <i>I know how to make changes to content after I've added it</i> Lesson 5 <i>I know how to identify different layouts</i> <i>I know how to match a layout to a purpose</i> <i>I know how to choose a suitable layout for a given purpose</i> Lesson 6 <i>I know how to identify the uses of desktop publishing in the real world</i> <i>I know how to say why desktop publishing might be helpful</i> <i>I know how to compare work made on desktop publishing to work created by hand</i>	Lesson 3 <i>I know how to use a programming extension</i> <i>I know how to consider the real world when making design choices</i> <i>I know how to choose blocks to set up my program</i> Lesson 4 <i>I know how to identify additional features (from a given set of blocks)</i> <i>I know how to choose suitable keys to turn on additional features</i> <i>I know how to build more sequences of commands to make my design work</i> Lesson 5 <i>I know how to test a program against a given design</i> <i>I know how to match a piece of code to an outcome</i> <i>I know how to modify a program using a design</i> Lesson 6 <i>I know how to make design choices and justify them</i> <i>I know how to implement my design</i> <i>I know how to evaluate my project</i>
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	<i>I know how to identify how devices in a network are connected together</i> <i>I know how to identify networked devices around me</i> <i>I know how to identify the benefits of computer networks</i>					
Specific Knowledge (to be known by the end of the unit)	Know an input is what information is sent to a computer system Know an output is the information a computer system sends back Know a network is a group of devices that share resources with each other	Know that animation is made up of still pictures called frames. Know that a storyboard is used to help put together the sequence of frames. Know that traditional animators drew frames by hand before putting them together in a sequence	Know that a sprite is a moveable character in the program. Know that a sprite can have attributes changed. Know that a code has to be sequenced to work properly.	Know that a branching database needs questions that can be answered yes or no to work properly. Know that a database is a way of keeping and organising information about a subject.	Know that text attributes can be changed (as in Digital Writing Y1). Know that text and images can be moved and resized on a page by clicking and dragging.	Know that programs start because of an input. Know that a program involves a sequence of commands. Know that the sequence of commands is called a process. Know that different sequences can have the same output and also have different outputs..
Vocabulary	digital device, input, process, output, program, digital, non-digital, connection, network, switch, server, wireless access point, cables, sockets	animation, flip book, stopframe, frame, sequence, image, photograph, setting, character, events, onion skinning, consistency, evaluation, delete, media, import, transition.	Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop, motion, turn, point in direction, go to, glide, sequence, event, task, design, run the code, order, note, chord, algorithm, bug, debug, code.	attribute, value, questions, table, objects, branching, database, objects, equal, even, separate, structure, compare, order, organise, selecting, information, decision tree.	text, images, advantages, disadvantages, communicate, font, style, landscape, portrait, orientation, placeholder, template, layout, content, desktop publishing, copy, paste, purpose, benefits	motion, event, sprite, algorithm, logic, move, resize, extension block, pen up, set up, pen, design, action, debugging, errors, setup, code, test, debug, actions.
Year 4	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit Title	Computer systems and networks The Internet	Programming Repetition in shapes	Creating media Photo editing	Programming Repetition in games	Data and Information Data Logging	Creating media Audio production
Learning Objectives	Lesson 1 <i>I know how to describe the internet as a network of networks</i>	Lesson 1 <i>I know how to program a computer by typing commands</i> <i>I know how to explain the effect of changing a value of a command</i>	Lesson 1 <i>I know how to improve an image by rotating it</i> <i>I know how to explain why I might crop an image</i> <i>I know how to use photo editing software to crop an image</i>	Lesson 1 <i>I know how to list an everyday task as a set of instructions including repetition</i> <i>I know how to predict the outcome of a snippet of code</i>	Lesson 1 <i>I know how to list an everyday task as a set of instructions including repetition</i> <i>I know how to predict the outcome of a snippet of code</i>	Lesson 1 <i>I know how to identify the input and output devices used to record and play sound</i> <i>I know how to use a computer to record audio</i>

<i>I know how to demonstrate how information is shared across the internet</i> <i>I know how to discuss why a network needs protecting</i> Lesson 2 <i>I know how to describe networked devices and how they connect</i> <i>I know how to explain that the internet is used to provide many services</i> <i>I know how to recognise that the World Wide Web contains websites and web pages</i> Lesson 3 <i>I know how to explain the types of media that know how to be shared on the WWW</i> <i>I know how to describe where websites are stored when uploaded to the WWW</i> <i>I know how to describe how to access websites on the WWW</i> Lesson 4 <i>I know how to explain what media know how to be found on websites</i> <i>I know how to recognise that I know how to add content to the WWW</i> <i>I know how to explain that internet services know how to be used to create content online</i> Lesson 5	<i>I know how to create a code snippet for a given purpose</i> Lesson 2 <i>I know how to use a template to draw what I want my program to do</i> <i>I know how to write an algorithm to produce a given outcome</i> <i>I know how to test my algorithm in a text-based language</i> Lesson 3 <i>I know how to identify repetition in everyday tasks</i> <i>I know how to identify patterns in a sequence</i> <i>I know how to use a count-controlled loop to produce a given outcome</i> Lesson 4 <i>I know how to identify the effect of changing the number of times a task is repeated</i> <i>I know how to predict the outcome of a program containing a count-controlled loop</i> <i>I know how to choose which values to change in a loop</i> Lesson 5 <i>I know how to identify 'chunks' of actions in the real world</i> <i>I know how to use a procedure in a program</i> <i>I know how to explain that a computer know how to repeatedly call a procedure</i> Lesson 6	<i>I understand that editing images know how to be unethical</i> Lesson 2 <i>I know how to explain that different colour effects make you think and feel different things</i> <i>I know how to experiment with different colour effects</i> <i>I know how to explain why I chose certain colour effects</i> Lesson 3 <i>I know how to add to the composition of an image by cloning</i> <i>I know how to identify how a photo edit know how to be improved</i> <i>I know how to remove parts of an image using cloning</i> Lesson 4 <i>I know how to experiment with tools to select and copy part of an image</i> <i>I know how to use a range of tools to copy between images</i> <i>I know how to explain why photos might be edited</i> Lesson 5 <i>I know how to describe the image I want to create</i> <i>I know how to choose suitable images for my project</i> <i>I know how to create a project that is a combination of other images</i> Lesson 6 <i>I know how to review images against a given criteria</i> <i>I know how to use feedback to guide making changes</i>	<i>I know how to modify a snippet of code to create a given outcome</i> Lesson 2 <i>I know how to modify loops to produce a given outcome</i> <i>I know how to choose when to use a count-controlled and an infinite loop</i> <i>I know how to recognise that some programming languages enable more than one process to be run at once</i> Lesson 3 <i>I know how to choose which action will be repeated for each object</i> <i>I know how to explain what the outcome of the repeated action should be</i> <i>I know how to evaluate the effectiveness of the repeated sequences used in my program</i> Lesson 4 <i>I know how to identify which parts of a loop know how to be changed</i> <i>I know how to explain the effect of my changes</i> <i>I know how to re-use existing code snippets on new sprites</i> Lesson 5 <i>I know how to evaluate the use of repetition in a project</i> <i>I know how to select key parts of a given project to use in my own design</i> <i>I know how to develop my own design explaining what my project will do</i>	<i>I know how to modify a snippet of code to create a given outcome</i> Lesson 2 <i>I know how to modify loops to produce a given outcome</i> <i>I know how to choose when to use a count-controlled and an infinite loop</i> <i>I know how to recognise that some programming languages enable more than one process to be run at once</i> Lesson 3 <i>I know how to choose which action will be repeated for each object</i> <i>I know how to explain what the outcome of the repeated action should be</i> <i>I know how to evaluate the effectiveness of the repeated sequences used in my program</i> Lesson 4 <i>I know how to identify which parts of a loop know how to be changed</i> <i>I know how to explain the effect of my changes</i> <i>I know how to re-use existing code snippets on new sprites</i> Lesson 5 <i>I know how to evaluate the use of repetition in a project</i> <i>I know how to select key parts of a given project to use in my own design</i> <i>I know how to develop my own design explaining what my project will do</i>	<i>I know how to explain that the person who records the sound know how to say who is allowed to use it</i> Lesson 2 <i>I know how to re-record my voice to improve my recording</i> <i>I know how to inspect the soundwave view to know where to trim my recording</i> <i>I know how to discuss what sounds know how to be added to a podcast</i> Lesson 3 <i>I know how to explain how sounds know how to be combined to make a podcast more engaging</i> <i>I know how to save my project so the different parts remain editable</i> <i>I know how to plan appropriate content for a podcast</i> Lesson 4 <i>I know how to record content following my plan</i> <i>I know how to review the quality of my recordings</i> <i>I know how to improve my voice recordings</i> Lesson 5 <i>I know how to open my project to continue working on it</i> <i>I know how to arrange multiple sounds to create the effect I want</i> <i>I know how to explain the difference between saving a project and exporting an audio file</i>
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	<i>I know how to explain that websites and their content are created by people</i> <i>I know how to suggest who owns the content on websites</i> <i>I know how to explain that there are rules to protect content</i> Lesson 6 <i>I know how to explain that not everything on the World Wide Web is true</i> <i>I know how to explain why some information I find online may not be honest, accurate, or legal</i> <i>I know how to explain why I need to think carefully before I share or reshare content</i>	<i>I know how to design a program that includes count-controlled loops</i> <i>I know how to make use of my design to write a program</i> <i>I know how to develop my program by debugging it</i>	<i>I know how to combine text and my image to complete the project</i>	Lesson 6 <i>I know how to refine the algorithm in my design</i> <i>I know how to build a program that follows my design</i> <i>I know how to evaluate the steps I followed when building my project</i>	Lesson 6 <i>I know how to refine the algorithm in my design</i> <i>I know how to build a program that follows my design</i> <i>I know how to evaluate the steps I followed when building my project</i>	Lesson 6 <i>I know how to listen to an audio recording to identify its strengths</i> <i>I know how to suggest improvements to an audio recording</i> <i>I know how to choose appropriate edits to improve my podcast</i>
Specific Knowledge (to be known by the end of the unit)	<i>Know that the World Wide Web is part of the internet</i> <i>Know that the WWW comprises of websites and web pages.</i> <i>Know that the internet is the global interconnection of networks</i> <i>Know that the contents of the internet is created by people</i>	<i>To know that many everyday tasks include repetition as part of a sequence.</i> <i>To know that a 'loop' is to repeat instructions.</i> <i>An indefinite loop continues as long as the program does.</i> <i>Know that sequences can be instructed to repeat a set number of times.</i>	<i>Know that digital images can be manipulated and changed for different purposes.</i> <i>Know that images can be cloned and copied before being altered.</i>	Knowledge is the same as that of Autumn 2, applied to Scratch.	<i>A sensor can be used as an input device for data collection.</i> <i>A computer program is used to sort data that has been logged.</i> <i>A digital device will collect data automatically.</i> <i>Data points are collected by data loggers from sensors over time.</i>	<i>Know that sound can be recorded and played back.</i> <i>Know that input devices record sound and output devices play back sound.</i> <i>Know that audio can be stored on a computer in an audio file.</i>
Vocabulary	internet, network, router, security, switch, server, wireless access point (WAP), website, web page, web address, routing, web browser, World Wide Web, content, links, files, use, download, sharing, ownership, permission, information, accurate, honest, content, adverts	Logo (programming environment), program, turtle, commands, code snippet, algorithm, design, debug, pattern, repeat, repetition, count-controlled loop, value, trace, decompose, procedure.	image, edit, digital, crop, rotate, undo, save, adjustments, effects, colours, hue, saturation, sepia, vignette, image, retouch, clone, select, combine, made up, real, composite, cut, copy, paste, alter, background, foreground, zoom, undo, font	Scratch, programming, sprite, blocks, code, loop, repeat, value, infinite loop, count-controlled loop, costume, repetition, forever, animate, event block, duplicate, modify, design, algorithm, debug, refine, evaluate	data, table, layout, input device, sensor, logger, logging, data point, interval, analyse, dataset, import, export, logged, collection, review, conclusion.	audio, microphone, speaker, headphones, input device, output device, sound, podcast, edit, trim, align, layer, import, record, playback, selection, load, save, export, MP3, evaluate, feedback.

Year 5	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit Title	Computer systems and networks Systems and searching	Creating media Video production	Programming Selection in physical computing	Data and information Flat file databases	Creating media Introduction to vector graphics	Programming Selection in quizzes
Learning Objectives	Lesson 1 I know how to explain that systems are built using a number of parts I know how to describe the input, process, and output of a digital system I know how to explain that computer systems communicate with other devices Lesson 2 I know how to identify tasks that are managed by computer systems I know how to identify the human elements of a computer system I know how to explain the benefits of a given computer system I know how to explain how to keep my personal information safe online Lesson 3 I know how to make use of a web search to find specific information I know how to refine my web search I know how to compare results from different search engines I know how to recognise trustworthy websites	Lesson 1 I know how to explain that video is a visual media format I know how to identify features of videos I know how to compare features in different videos I know what to do if I see any content online that makes me feel uncomfortable Lesson 2 I know how to identify and find features on a digital video recording device I know how to experiment with different camera angles I know how to make use of a microphone To capture video using a range of techniques I know how to suggest filming techniques for a given purpose I know how to capture video using a range of filming techniques I know how to review how effective my video is Lesson 3 I know how to outline the scenes of my video I know how to decide which filming techniques I will use I know how to create and save video content Lesson 4 I know how to store, retrieve, and export my recording to a computer	Lesson 1 I know how to create a simple circuit and connect it to a microcontroller I know how to program a microcontroller to make an LED switch on I know how to explain what an infinite loop does Lesson 2 I know how to connect more than one output component to a microcontroller I know how to use a count-controlled loop to control outputs I know how to design sequences that use count-controlled loops Lesson 3 I know how to explain that a condition is either true or false I know how to design a conditional loop I know how to program a microcontroller to respond to an input Lesson 4 I know how to explain that a condition being met know how to start an action I know how to identify a condition and an action in my project I know how to use selection (an 'if...then...' statement) to direct the flow of a program Lesson 5	Lesson 1 I know how to create a database using cards I know how to explain how information know how to be recorded I know how to order, sort, and group my data cards Lesson 2 I know how to explain what a field and a record is in a database I know how to navigate a flat-file database to compare different views of information I know how to choose which field to sort data by to answer a given question Lesson 3 I know how to explain that data know how to be grouped using chosen values I know how to group information using a database I know how to combine grouping and sorting to answer specific questions Lesson 4 I know how to choose which field and value are required to answer a given question I know how to outline how 'AND' and 'OR' know how to be used to refine data selection I know how to choose multiple criteria to answer a given question	Lesson 1 I know how to recognise that vector drawings are made using shapes I know how to experiment with the shape and line tools I know how to discuss how vector drawings are different from paper-based drawings Lesson 2 I know how to identify the shapes used to make a vector drawing I know how to explain that each element added to a vector drawing is an object I know how to move, resize, and rotate objects I have duplicated Lesson 3 I know how to use the zoom tool to help me add detail to my drawings I know how to explain how alignment grids and resize handles know how to be used to improve consistency I know how to modify objects to create a new image Lesson 4 I know how to identify that each added object creates a new layer in the drawing I know how to change the order of layers in a vector drawing I know how to use layering to create an image Lesson 5	Lesson 1 I know how to recall how conditions are used in selection I know how to identify conditions in a program I know how to modify a condition in a program Lesson 2 I know how to use selection in an infinite loop to check a condition I know how to identify the condition and outcomes in an 'if... then... else...' statement I know how to create a program that uses selection to produce different outcomes Lesson 3 I know how to explain that program flow know how to branch according to a condition I know how to design the flow of a program that contains 'if... then... else...' I know how to show that a condition know how to direct program flow in one of two ways Lesson 4 I know how to outline a given task I know how to use a design format to outline my project I know how to identify the outcome of user input in an algorithm Lesson 5

	Lesson 4 <i>I know how to explain why we need tools to find things online</i> <i>I know how to recognise the role of web crawlers in creating an index</i> <i>I know how to relate a search term to the search engine's index</i> Lesson 5 <i>I know how to order a list by rank</i> <i>I know how to explain that a search engine follows rules to rank results</i> <i>I know how to give examples of criteria used by search engines to rank results</i> Lesson 6 <i>I know how to describe some of the ways that search results know how to be influenced</i> <i>I know how to recognise some of the limitations of search engines</i> <i>I know how to explain how search engines make money</i>	<i>I know how to explain how to improve a video by reshooting and editing</i> <i>I know how to select the correct tools to make edits to my video</i> Lesson 5 <i>I know how to make edits to my video and improve the final outcome</i> <i>I know how to recognise that my choices when making a video will impact the quality of the final outcome</i> <i>I know how to evaluate my video and share my opinions</i>	<i>I know how to identify a real-world example of a condition starting an action</i> <i>I know how to describe what my project will do</i> <i>I know how to create a detailed drawing of my project</i> Lesson 6 <i>I know how to write an algorithm that describes what my model will do</i> <i>I know how to use selection to produce an intended outcome</i> <i>I know how to test and debug my project</i>	Lesson 5 <i>I know how to select an appropriate chart to visually compare data</i> <i>I know how to refine a chart by selecting a particular filter</i> <i>I know how to explain the benefits of using a computer to create charts</i> Lesson 6 <i>I know how to ask questions that will need more than one field to answer</i> <i>I know how to refine a search in a real-world context</i> <i>I know how to present my findings to a group</i>	<i>I know how to copy part of a drawing by duplicating several objects</i> <i>I know how to recognise when I need to group and ungroup objects</i> <i>I know how to reuse a group of objects to further develop my vector drawing</i> Lesson 6 <i>I know how to create a vector drawing for a specific purpose</i> <i>I know how to reflect on the skills I have used and why I have used them</i> <i>I know how to compare vector drawings to freehand paint drawings</i>	<i>I know how to implement my algorithm to create the first section of my program</i> <i>I know how to test my program</i> <i>I know how to share my program with others</i> Lesson 6 <i>I know how to identify ways the program could be improved</i> <i>I know how to identify the setup code I need in my program</i> <i>I know how to extend my program further</i>
Specific Knowledge (to be known by the end of the unit)	Know a system is a series of connected computers. Data can be transferred between systems. Search engines are examples of large IT systems. Search engines have indexes because there is a large amount of information that needs to be searched. Search engines make money by selling advertising space targeting the user.	Know that tablets and phones are devices that can record video. Know that a story board allows the video creator to have an idea what they want. Videos can be edited on the device or on another computer where the file is stored.	Know that a condition can be true or it can be false. An 'if...then...' statement is needed to start an action. An 'if...then...else...' statement narrows the possible outcomes.	Data can be organised into files that can be viewed in different ways.	Know vector drawings consist of different and separate objects. Know that each object is its own layer. Know that images can be scaled up or down. Objects can be modified in groups and individually.	Know that a condition can be true or it can be false. An 'if...then...' statement is needed to start an action. An 'if...then...else...' statement switches the program flow in one of two ways.

Vocabulary	system, connection, digital, input, process, storage, output, search, search engine, refine, index, bot, ordering, links, algorithm, search engine optimisation (SEO), web crawler, content creator, selection, ranking.	video, audio, camera, talking head, panning, close up, video camera, microphone, lens, mid-range, long shot, moving subject, side by side, angle (high, low, normal), static, zoom, pan, tilt, storyboard, filming, review, import, split, trim, clip, edit, reshoot, delete, reorder, export, evaluate, share.	microcontroller, USB, components, connection, infinite loop, output component, motor, repetition, count-controlled loop, Crumble controller, switch, LED, Sparkle, crocodile clips, connect, battery box, program, condition, Input, output, selection, action, debug, circuit, power, cell, buzzer	database, data, information, record, field, sort, order, group, search, value, criteria, graph, chart, axis, compare, filter, presentation.	vector, drawing tools, object, toolbar, vector drawing, move, resize, colour, rotate, duplicate/copy, zoom, select, align, modify, layers, order, copy, paste, group, ungroup, reuse, reflection	Selection, condition, true, false, count-controlled loop, outcomes, conditional statement, algorithm, program, debug, question, answer, task, design, input, implement, test, run, setup, operator
Year 6	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit Title	Computer systems and networks Communication and collaboration	Creating media Web page creation	Programming Variables in games	Data and information Introduction to spreadsheets	Creating media 3D modelling	Programming Sensing movement
Learning Objectives	Lesson 1 I know how to recognise that data is transferred using agreed methods I know how to explain that internet devices have addresses I know how to describe how computers use addresses to access websites Lesson 2 I know how to identify and explain the main parts of a data packet I know how to explain that data is transferred over networks in packets I know how to explain that all data transferred over the internet is in packets Lesson 3	Lesson 1 I know how to explore a website I know how to discuss the different types of media used on websites I know that websites are written in HTML Lesson 2 I know how to recognise the common features of a web page I know how to suggest media to include on my page I know how to draw a web page layout that suits my purpose Lesson 3 I know how to say why I should use copyright-free images I know how to find copyright-free images I know how to describe what is meant by the term 'fair use' I know how to use technology respectfully and responsibly when online	Lesson 1 I know how to identify examples of information that is variable I know how to explain that the way a variable changes know how to be defined I know how to identify that variables know how to hold numbers or letters Lesson 2 I know how to identify a program variable as a placeholder in memory for a single value I know how to explain that a variable has a name and a value I know how to recognise that the value of a variable know how to be changed Lesson 3 I know how to decide where in a program to change a variable I know how to make use of an event in a program to set a variable	Lesson 1 I know how to collect data I know how to suggest how to structure my data I know how to enter data into a spreadsheet Lesson 2 I know how to explain what an item of data is I know how to choose an appropriate format for a cell I know how to apply an appropriate format to a cell Lesson 3 I know how to explain which data types know how to be used in calculations I know how to construct a formula in a spreadsheet I know how to identify that changing inputs changes outputs Lesson 4 I know how to calculate data using different operations	Lesson 1 I know how to add 3D shapes to a project I know how to view 3D shapes from different perspectives I know how to move 3D shapes relative to one another Lesson 2 I know how to resize an object in three dimensions I know how to lift/lower 3D objects I know how to recolour a 3D object Lesson 3 I know how to rotate objects in three dimensions I know how to duplicate 3D objects I know how to group 3D objects Lesson 4 I know how to accurately size 3D objects	Lesson 1 I know how to apply my knowledge of programming to a new environment I know how to test my program on an emulator I know how to transfer my program to a controllable device Lesson 2 I know how to identify examples of conditions in the real world I know how to use a variable in an if, then, else statement to select the flow of a program I know how to determine the flow of a program using selection Lesson 3 I know how to use a condition to change a variable I know how to experiment with different physical inputs I know how to explain that checking a variable doesn't change its value

<i>I know how to recognise how to access shared files stored online</i> <i>I know how to send information over the internet in different ways</i> <i>I know how to explain that the internet allows different media to be shared</i> Lesson 4 <i>I know how to identify different ways of working together online</i> <i>I know how to recognise that working together on the internet know how to be public or private</i> <i>I know how to explain how the internet enables effective collaboration</i> Lesson 5 <i>I know how to explain the different ways in which people communicate</i> <i>I know how to identify that there are a variety of ways to communicate over the internet</i> <i>I know how to choose methods of communication to suit particular purposes</i> Lesson 6 <i>I know how to compare different methods of communicating on the internet</i> <i>I know how to decide when I should and should not share information online</i>	<i>I know how to recognise how to add content to my own web page</i> <i>I know how to preview what my web page looks like</i> <i>I know how to evaluate what my web page looks like on different devices and suggest/make edits.</i> Lesson 5 <i>I know how to explain what a navigation path is</i> <i>I know how to describe why navigation paths are useful</i> <i>I know how to make multiple web pages and link them using hyperlinks</i> Lesson 6 <i>I know how to explain the implication of linking to content owned by others</i> <i>I know how to create hyperlinks to link to other people's work</i> <i>I know how to evaluate the user experience of a website</i>	<i>I know how to recognise that the value of a variable know how to be used by a program</i> Lesson 4 <i>I know how to choose the artwork for my project</i> <i>I know how to create algorithms for my project</i> <i>I know how to explain my design choices</i> Lesson 5 <i>I know how to create the artwork for my project</i> <i>I know how to choose a name that identifies the role of a variable</i> <i>I know how to test the code that I have written</i> Lesson 6 <i>I know how to identify ways that my game could be improved</i> <i>I know how to use variables to extend my game</i> <i>I know how to share my game with others</i>	<i>I know how to create a formula which includes a range of cells</i> <i>I know how to apply a formula to multiple cells by duplicating it</i> Lesson 5 <i>I know how to use a spreadsheet to answer questions</i> <i>I know how to explain why data should be organised</i> <i>I know how to apply a formula to calculate the data I need to answer questions</i> Lesson 6 <i>I know how to produce a chart</i> <i>I know how to use a chart to show the answer to a question</i> <i>I know how to suggest when to use a table or chart</i>	<i>I know how to show that placeholders know how to create holes in 3D objects</i> <i>I know how to combine a number of 3D objects</i> Lesson 5 <i>I know how to analyse a 3D model</i> <i>I know how to choose objects to use in a 3D model</i> <i>I know how to combine objects in a design</i> Lesson 6 <i>I know how to construct a 3D model based on a design</i> <i>I know how to explain how my 3D model could be improved</i> <i>I know how to modify my 3D model to improve it</i>	Lesson 4 <i>I know how to use an operand (e.g. < > =) in an if, then statement</i> <i>I know how to explain the importance of the order of conditions in else, if statements</i> <i>I know how to modify a program to achieve a different outcome</i> Lesson 5 <i>I know how to decide what variables to include in a project</i> <i>I know how to design the algorithm for my project</i> <i>I know how to design the program flow for my project</i> Lesson 6 <i>I know how to create a program based on my design</i> <i>I know how to test my program against my design</i> <i>I know how to use a range of approaches to find and fix bugs</i>
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	<i>I know how to explain that communication on the internet may not be private</i> <i>I know how to explain how to report inappropriate content online</i>					
Specific Knowledge (to be known by the end of the unit)	Data is transferred across networks using agreed protocols. Data is transferred in packets. Text, video, images and music can all be shared across the internet. Communicating and collaborating using the internet can be public or private.	Web pages can contain different media. Web pages are written by people. A website is a set of hyperlinked pages. Images and media are protected by copyright and may need permission to use.	A variable is something that can be changed. A variable can be used in a program. A variable has a name and a value. Variables should be set up at the beginning of a program. The name of a variable must be unique.	A spreadsheet processes data differently depending on the data type. A formula can be used to calculate data. Cells in a spreadsheet can be linked. Values of cells automatically update when linked cell values are updated.	3D models can be created on a computer. 3D models can be viewed from different perspectives. 3D shapes and models can be manipulated by digital tools.	A variable is something that can be changed. A variable can be used in a program. A variable has a name and a value. Variables should be set up at the beginning of a program. The name of a variable must be unique.
Vocabulary	communication, protocol, data, address, Internet Protocol (IP), Domain Name Server (DNS), packet, header, data payload, chat, explore, slide deck, reuse, remix, collaboration, internet, public, private, oneway, two-way, one-to-one, one-to-many.	website, web page, browser, media, Hypertext Markup Language (HTML), logo, layout, header, media, purpose, copyright, fair use, home page, preview, evaluate, device, Google Sites, breadcrumb trail, navigation, hyperlink, subpage, evaluate, implication, external link, embed.	variable, change, name, value, set, design, event, algorithm, code, task, artwork, program, project, code, test, debug, improve, evaluate, share, assign, declare	data, collecting, table, structure, spreadsheet, cell, cell reference, data item, format, formula, calculation, spreadsheet, input, output, operation, range, duplicate, sigma, propose, question, data set, organised, chart, evaluate, results, sum, comparison, software, tools.	TinkerCAD, 2D, 3D, shapes, select, move, perspective, view, handles, resize, lift, lower, recolour, rotate, duplicate, group, cylinder, cube, cuboid, sphere, cone, prism, pyramid, placeholder, hollow, choose, combine, construct, evaluate, modify.	Micro:bit, MakeCode, input, process, output, flashing, USB, trace, selection, condition, if then else, variable, random, sensing, accelerometer, value, compass, direction, navigation, design, task, algorithm, step counter, plan, create, code, test, debug.