

Computing



Our Subject Intent



Our Curriculum Map

	Cycle A				Cycle B			
	EYFS	Year 1/2	Year 3/4	Year 5/6	EYFS	Year 1/2	Year 3/4	Year 5/6
Autumn 1	Can We Be Friends? Come Rhyme With Me	Why do I love to be beside the seaside?	Sticks and stones	Hurry up, you've Benin there a while!	Can We Be Friends? Come Rhyme With Me	The great animals	The Vikings on the wall	It's all Greek to me!
Autumn 2	Tell Me A Story	Darling, put the fire out!	We built this mega city on rock and roll!	Lavas all you need	Tell Me A Story	Happily Everest after	You crack me up!	Ain't no mountain high enough
Spring 1	Are We Nearly There Yet?	A toy story!	Bronze ain't bad!	What did the Romans do for us?	Pole To Pole	What's the nurse that can happen?	Where's my mummy?	The big Shang theory
Spring 2	It's A Bug's Life	Why don't penguins need to fly?	National parks	Walking on sunshine	Land Of The Giants	Wicked weather!	Don't rainforest on my parade	How is fair trade fair?
Summer 1	How Does Your Garden Grow?	It's pasture bedtime!	I've got my iron you	Mirror, Royal Signal, Manoeuvre	Commotion in the Ocean	Location, location, location	Great scot!	Only we can save the world!
Summer 2	The Best Show Of Your Life!	On the road again!	Save it for a train-y day	Current affairs	Here Comes The Sun!	Too hot to handle	Ch-ch-changes!	Who do you think you are, Mr Hitler?

What does Computing look like at Downlands?



Volume of content:

1. Each mixed-age class will complete **six** units per year.
2. Each unit will be at least **six** lessons.

Subject delivery:

- Lessons are sourced from the 'Teach Computing' curriculum available at <https://teachcomputing.org/> (please note that you will need to create a NCCE login to access).
- The Teach Computing curriculum is structured into units for each year group, and each unit is broken down into lessons. Units can generally be taught in any order, with the exception of programming, where concepts and skills rely on prior knowledge and experiences. Lessons must be taught in numerical order.
- Worksheets are collected and stored at teacher's discretion.
- Milestone work should be added to Seesaw accounts once per unit.
- Any photographs as evidence of work completed should be added to Seesaw.

Computing – progression of skills (disciplinary knowledge)



SKILL	FS2	End of KS1	End of LKS2	End of UKS2
Computing systems and networks Digital literacy	<p>Know they can say 'no' to things that make them sad, upset or embarrassed.</p> <p>I can recognise some ways in which the internet can be used to communicate and give examples of how I (might) use it.</p> <p>I can describe ways that some people can be unkind online and give examples of how this can make others feel.</p> <p>I can identify devices I could use to access information on the internet. Can describe the people I can trust and can share this with; I can explain why I can trust them.</p>	<p>Recognise common uses of information technology beyond school.</p> <p>Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.</p>	<p>Identify that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks.</p> <p>Recognise the internet as a network of networks including the WWW, and why we should evaluate online content.</p>	<p>Recognise IT systems in the world and how some can enable searching on the internet.</p> <p>Explore how data is transferred by working collaboratively online.</p>
Creating media Information technology	<p>Know and recognise computers at home and at school.</p> <p>Be able to recognise and talk about familiar technology (e.g. apps, websites and online services).</p> <p>Learn how to interact with computers and technology as appropriate.</p> <p>Explore technology from past and present e.g keyboards, remote controls, cameras, telephones.</p>	<p>Choose appropriate tools in a program to create art, and make comparisons with working non-digitally.</p> <p>Capture and change digital photographs for different purposes.</p> <p>Use a computer to create and format text, before comparing to writing non-digitally</p> <p>Use a computer as a tool to explore rhythms and melodies, before creating a musical composition.</p>	<p>Capture and edit digital still images to produce a stop-frame animation that tells a story.</p> <p>Capture and edit audio to produce a podcast, ensuring that copyright is considered.</p> <p>Create documents by modifying text, images, and page layouts for a specified purpose.</p> <p>Manipulate digital images, and reflect on the impact of changes and whether the required purpose is fulfilled.</p>	<p>Plan, capture, and edit video to produce a short film.</p> <p>Design and create web pages, giving consideration to copyright, aesthetics, and navigation.</p> <p>Create images in a drawing program by using layers and groups of objects.</p> <p>Plan, develop, and evaluate 3D computer models of physical objects.</p>
Data and information Information technology		<p>Recognise common uses of information technology beyond school .</p> <p>Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.</p> <p>Collect data in tally charts and use attributes to organise and present data on a computer.</p>	<p>Build and use branching databases to group objects using yes/no questions.</p> <p>Recognise how and why data is collected over time, before using data loggers to carry out an investigation.</p>	<p>Use a database to order data and create charts to answer questions.</p> <p>Answer questions by using spreadsheets to organise and calculate data.</p>
Programming Computer science	<p>Know how to follow simple instructions.</p> <p>Put pictorial instructions into sequential order.</p> <p>Use Bee Bots and talk about their discoveries.</p>	<p>Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.</p> <p>Create and debug simple programs.</p> <p>Use logical reasoning to predict the behaviour of simple programs.</p> <p>Design and program the movement of a character on screen to tell stories.</p> <p>Design algorithms and programs that use events to trigger sequences of code to make an interactive quiz.</p>	<p>Create sequences in a block-based programming language to make music.</p> <p>Use a text-based programming language to explore count-controlled loops when drawing shapes.</p> <p>Write algorithms and programs that use a range of events to trigger sequences of actions.</p> <p>Use a block-based programming language to explore count-controlled and infinite loops when creating a game.</p>	<p>Explore conditions and selection using a programmable microcontroller.</p> <p>Explore variables when designing and coding a game.</p> <p>Explore selection in programming to design and code an interactive quiz.</p> <p>Design and code a project that captures inputs from a physical device.</p>



Early Learning Goal	Vocabulary
<p>To be explored throughout the year through provision and some direct teaching.</p> <p>Computer Science</p> <p>1. <u>Listening, Attention and Understanding</u> Listen attentively and respond to what they hear with relevant questions, comments and actions when being read to and during whole class discussions and small group interactions.</p> <p>2. <u>Speaking</u> Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary; Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate.</p> <p>7. <u>Fine Motor Skills</u> Use a range of small tools, including scissors, paint brushes and cutlery.</p> <p>Information Technology</p> <p>7. <u>Fine Motor Skills</u> Use a range of small tools, including scissors, paint brushes and cutlery. Begin to show accuracy and care when drawing.</p> <p>10. <u>Writing</u> Spell words by identifying sounds in them and representing the sounds with a letter or letters; Write simple phrases and sentences that can be read by others.</p> <p>15. <u>The Natural World</u> Explore the natural world around them, making observations and drawing pictures of animals and plants.</p> <p>16. <u>Creating with Materials</u> Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p> <p>Digital Literacy</p> <p>3. <u>Self-Regulation</u> Show an understanding of their own feelings and those of others, and begin to regulate their behaviour accordingly.</p> <p>4. <u>Managing Self</u> Explain the reasons for rules, know right from wrong and try to behave accordingly.</p>	<p>direction, control, instructions, steps, robot, microphone, keyboards, keys, letter, number, camera, save, print, video, film, record.</p> <p>Technology in the Early Years can mean:</p> <ul style="list-style-type: none"> • taking a photograph with a camera or tablet, • searching for information on the internet, • playing games on the interactive whiteboard, • exploring an old typewriter or other mechanical toys, • using a Beebot, • watching a video clip, • listening to music.

Computing – curriculum map – KS1 – cycle A



COMPUTER SCIENCE	INFORMATION TECHNOLOGY	DIGITAL LITERACY	INFORMATION TECHNOLOGY
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	Autumn 1	Autumn 2	Spring 1
Unit	Why do we like to be beside the seaside?	Darling, put the fire out!	A toy story!
Computing Unit (& yr group)	Networks and Systems Parts of a computer from Y1, lessons 2, 6 Info tech from Y2, lessons 1, 2, 3, 4, 6 See notes for differentiation suggestions	Creating Media first unit Digital painting Y1 unit PAINTZ.APP (or other paint-based app)	Programming first unit Y1 Prog A, Lessons 1, 4 Y2 Programming A, Lesson 1, 2, 4, 5 (also add in debugging) Beebots / floor turtles
Skills (disciplinary knowledge) The skills I have learned...	Identify technology. Identify the toolbar. and use bold and change font and size . Type capital letters. Use the spacebar. Find letters on a keyboard to type words. Insert a picture from a picture box. Follow rules for using technology responsibly.	Draw lines and make marks on a screen and explain which tools I used. Make marks with the square and line tools. Use the shape and line tools effectively. Use the shape and line tools to recreate the work of an artist . Explain why I have chosen specific tools.	Use a start block in a program. Use more than one block by joining them together. Compare left and right turns. Experiment with turn and move. commands to move a physical computer. Use event, action and object code blocks. Select appropriate background artwork for a project.
Knowledge (substantive knowledge) The knowledge I have...	In this unit, pupils will develop their understanding of technology and how it can help them in their everyday lives. They will start to become familiar with the different components of a computer by developing their keyboard and mouse skills. Learners will also consider how to use technology responsibly. Pupils will also develop their understanding of what information technology (IT) is and will begin to identify examples. They will discuss where they have seen IT in school and beyond, in settings such as shops, hospitals, and libraries. Learners will then investigate how IT improves our world, and they will learn about the importance of using IT responsibly.	In this unit, pupils will develop their understanding of a range of tools used for digital painting. They then use these tools to create their own digital paintings, while gaining inspiration from a range of artists' work. The unit concludes with learners considering their preferences when painting with and without the use of digital devices.	In this unit, pupils will be introduced to early programming concepts. Learners will explore using individual commands, both with other learners and as part of a computer program. This unit also develops learners' understanding of instructions in sequences and the use of logical reasoning to predict outcomes. Learners will use given commands in different orders to investigate how the order affects the outcome. They will also learn about design in programming. They will develop artwork and test it for use in a program. They will design algorithms and then test those algorithms as programs and debug them.
Learning Objectives	I can name the main parts of a computer. I can identify rules to keep us safe and healthy when using technology. I can identify some examples and uses of computers. I can identify examples of IT and sort what it is used for, both in school and the wider world. I can recognize common types of technology. I can use IT for different types of activities and explain why.	I can use paint tools to make marks, draw a line or draw a picture. I can use the shape tool and the line tool. I can make careful choices when painting a digital picture. I can explain why I chose the tools I used. I can use a computer on my own to paint a picture. I can compare painting a picture on a computer and on paper.	I can explain what a given command will do. I can combine four direction commands to make sequences. I can describe a series of instructions as a sequence. I can explain what happens when we change the order of instructions. I can explain that programming projects can have code and artwork. I can design an algorithm.
Vocabulary	Technology, computer, mouse, trackpad, keyboard, screen, click, drag, input device, shift, spacebar, capital letter, full stop, safely, responsibly, Information technology (IT), computer, barcode, scanner/scan.	Paint program, tool, paintbrush, erase, fill, undo, Piet Mondrian, primary colours, shape tools, line tool, fill tool, undo tool, Henri Matisse, Wassily Kandinsky, feelings, colour, brush style, George Seurat, Pointillism, prefer, dislike, like.	Forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, plan, algorithm, route, program, Instruction, sequence, clear, unambiguous, algorithm, program, order, commands, prediction, artwork, design, route, mat, debugging.

Computing – curriculum map – KS1 – cycle A



COMPUTER SCIENCE	INFORMATION TECHNOLOGY	DIGITAL LITERACY	INFORMATION TECHNOLOGY
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	Spring 2	Summer 1	Summer 2
Unit	Why don't penguins need to fly?	It's pasture bedtime	On the road again!
Computing Unit (& yr group)	<p>Data Pictograms Y2 unit - context changes Cycle A and B - introduction to or use of depending on prior learning J2E</p>	<p>Creating Media second unit Digital writing Y1 unit Word processor</p>	<p>Programming second unit Programming animations Y1 programming B (repeated annually but context changed) Scratch Jr</p>
Skills (disciplinary knowledge) The skills I have learned...	<p>Count and compare objects (data) using tally charts, comparing totals. Enter data on a computer and view that data in a different format. Use a pictogram to answer simple questions about the data. Use a tally chart to create a pictogram. Answer 'more than/'less than' and 'most/least' questions about an attribute. Create a pictogram to arrange objects by attributes. Create a pictogram to compare people by a common attribute. Explain that we can present information using a computer and that sometimes it is this data should not be shared.</p>	<p>Find and identify keys on a keypad. Use a computer to write. Add and remove text on a computer using the backspace key. Change the look of the text by using bold, italic and underlining. Make careful choices when changing text, for example, changing the font, selecting a word by double clicking or clicking and dragging. Explain why I used the tools that I chose. Compare writing on a computer with writing on paper.</p>	<p>Compare different programming tools and find and use commands to move a sprite. Use a start block in a program and Join blocks together. Explain what happens when I change a value. Add blocks to my sprite and delete a sprite. Create an algorithm for each sprite to control movement. Test the programs I have created and alter my designs.</p>
Knowledge (substantive knowledge) The knowledge I have...	<p>In this unit, pupils will begin to understand what the term data means and how data can be collected in the form of a tally chart. They will learn the term 'attribute' and use this to help them organise data. They will then progress onto presenting data in the form of pictograms and finally block diagrams. Learners will use the data presented to answer questions.</p>	<p>In this unit, pupils will develop their understanding of the various aspects of using a computer to create and manipulate text. They will become more familiar with using a keyboard and mouse to enter and remove text. Learners will also consider how to change the look of their text, and will be able to justify their reasoning in making these changes. Finally, learners will consider the differences between using a computer to create text, and writing text on paper. They will be able to explain which method they prefer and explain their reasoning for choosing this.</p>	<p>In this unit, pupils will be introduced to on-screen programming through ScratchJr. Learners will explore the way a project looks by investigating sprites and backgrounds. They will use programming blocks to use, modify, and create programs. Learners will also be introduced to the early stages of program design through the introduction of algorithms.</p>
Learning Objectives	<p>I can recognize that we can count and compare objects using tally charts. I can recognize the objects can be represented as pictures. I can create a pictogram. I can select objects by attributes and make comparisons. I can recognize that people can be described by attributes. I can explain that we can present information using a computer.</p>	<p>I can use a computer to write. I can add and remove text on a computer. I can identify that the look of text can be changed on a computer. I can make careful choices when changing text. I can explain why I used the tools that I chose. I can compare typing on a computer to writing on paper.</p>	<p>I can choose a command for a given purpose. I can show that a series of commands can be joined together. I can identify the effect of changing a value. I can explain that each sprite has its own instructions. I can design the parts of a project. I can use my algorithm to create a program.</p>
Vocabulary	<p>More than, less than, most, least, organise, data, object, tally chart, votes, total, pictogram, enter, data, tally chart, compare, count, explain, attribute, group, same, different, most popular, least popular.</p>	<p>Word processor, keyboard, keys, letters, Microsoft Word, letters, numbers, space, backspace, text cursor, toolbar, bold, italic, underline, undo, font, toolbar.</p>	<p>ScratchJr, Bee-Bot, command, sprite, compare, programming, programming area, block, joining, start, program, background, delete, reset, algorithm, predict, effect, change, value, block, instructions, appropriate, design.</p>

Computing – curriculum map – LKS2 – cycle A



COMPUTER SCIENCE	INFORMATION TECHNOLOGY	DIGITAL LITERACY	INFORMATION TECHNOLOGY
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	Autumn 1	Autumn 2	Spring 1
Unit	Sticks and stones	We built this mega city on rock and roll!	Bronze ain't bad!
Computing Unit (& yr group)	<p>Networks and Systems Inputs and outputs and how networks are connected from Y3, lessons 1, 2, 4, 5, 6 + The Internet from Y4, lessons 1, 2</p> <p>PAINTZ.APP or other paint-based app</p>	<p>Creating Media first unit Desktop publishing Y3 unit Adobe Spark – or – Canva</p>	<p>Programming first unit Introduction to Scratch Combine lesson 1,2,3 from Y3 programming A with lesson 1 from Y3 programming B. Create 2 lessons from these. Repeat annually. Then: Sequence, creating a piano Y3 Programming A, Lessons 4 - 6 Scratch (online)</p>
Skills (disciplinary knowledge) The skills I have learned...	<p>Classify input and output devices; design a digital device and model a simple process. Recognise similarities and differences between using digital devices and non-digital tools. Explain how a computer network can be used to share information and that messages pass through multiple connections. Explain how digital devices can be connected and what the role of a switch, server and wireless access point is. Recognise the physical components of a network and how they are connected.</p>	<p>Recognise how text and images convey information clearly and that there are some advantages and disadvantages to using them. Change the text layout, including font style, size and colour. Choose appropriate page settings: generating a template to meet my needs with placeholders. Add content to a desktop publishing publication, including adding text and pasting pictures. Change the layout to suit different purposes. Consider the benefits of desktop publishing and identify its use in the real world.</p>	<p>Explain how a sprite moves in an existing project. Create a program to move a sprite in four directions. Adapt a program to a new context. Develop my program by adding features. Identify and fix bugs in a program. Design and create a maze-based challenge.</p>
Knowledge (substantive knowledge) The knowledge I have...	<p>In this unit, pupils will develop their understanding of digital devices, with an initial focus on inputs, processes, and outputs. They will also compare digital and non-digital devices. Next, learners will be introduced to computer networks, including devices that make up a network's infrastructure, such as wireless access points and switches. Finally, learners will discover the benefits of connecting devices in a network. Pupils will also apply their knowledge and understanding of networks, to appreciate the internet as a network of networks which need to be kept secure.</p>	<p>In this unit, pupils will become familiar with the terms 'text' and 'images' and understand that they can be used to communicate messages. They will use desktop publishing software and consider careful choices of font size, colour and type to edit and improve pre-made documents. Learners will be introduced to the terms 'templates', 'orientation', and 'placeholders' and begin to understand how these can support them in making their own template for a magazine front cover. They will start to add text and images to create their own pieces of work using desktop publishing software. Learners will look at a range of page layouts thinking carefully about the purpose of these and evaluate how and why desktop publishing is used in the real world.</p>	<p>This unit explores the concept of sequencing in programming through Scratch. It begins with an introduction to the programming environment, which will be new to most learners. They will be introduced to a selection of motion, sound, and event blocks which they will use to create their own programs, featuring sequences. The final project is to make a representation of a piano. The unit is paced to focus on all aspects of sequences, and make sure that knowledge is built in a structured manner. Learners also apply stages of program design through this unit.</p>
Learning Objectives	<p>I can explain how digital devices function. I can identify input and output devices. I can explain how a computer network can be used to share information. I can explore how digital devices can be connected. I can recognise the physical components of a network. I can describe how networks physically connect to other networks. I can recognize how networked devices make up the internet.</p>	<p>I can recognize how text and images convey information. I can recognise that text and layout can be edited. I can choose appropriate page settings. I can add content to a desktop publishing publication. I can consider how different layouts can suit different purposes. I can consider the benefits of desktop publishing.</p>	<p>I can explore a new programming environment. I can identify that commands have an outcome. I can explain that a program has a start. I can explain how a sprite moves in an existing project. I can recognise that a sequence of commands can have an order. I can change the appearance of my project. I can create a project from a task description.</p>
Vocabulary	<p>Digital device, input, output, process, program, connection, network, network switch, server, wireless access point (WAP).</p>	<p>Text, images, advantages, disadvantages, communicate, font, style, template, desktop publishing, copy, paste, layout, purpose, benefits.</p>	<p>Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop, motion, turn, point in direction, go to, glide, event, task, design, code, run the code, order, note, chord, algorithm, bug, debug.</p>

Computing – curriculum map – LKS2 – cycle A



COMPUTER SCIENCE	INFORMATION TECHNOLOGY	DIGITAL LITERACY	INFORMATION TECHNOLOGY
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	Spring 2	Summer 1	Summer 2
Unit	National parks	I've got my iron you	Save it for a train-y day
Computing Unit (& yr group)	Data Branching databases Y3 unit J2E	Creating Media second unit Audio production Y4 unit Audacity – or – Garageband	Programming second unit Repetition using Logo Y4 Programming A Turtle Academy (web based)
Skills (disciplinary knowledge) The skills I have learned...	Create a branching database by grouping groups of objects separated by one attribute. Make up yes/no questions about these groups. Identify the object attributes needed to collect relevant data. Explain why it is helpful for a database to be well structured. Compare the information shown in a pictogram with a branching database.	Identify digital devices that can record sound and play it back and that a range of sounds can be recorded. Plan and record a podcast, saving it as a file. Discuss how to improve my podcast and edit sections of an audio recording. Reopen my recording and add sound, using editing tools to rearrange sections of audio.	Create a code snippet for a given purpose, for example controlling a turtle. Write an algorithm for a given outcome, including repetition. Design a program that has a count-controlled loop. Debug my program.
Knowledge (substantive knowledge) The knowledge I have...	In this unit, pupils will develop their understanding of what a branching database is and how to create one. They will use yes/no questions to gain an understanding of what attributes are and how to use them to sort groups of objects. Learners will create physical and on-screen branching databases. To conclude the unit, they will create an identification tool using a branching database, which they will test by using it. They will also consider real-world applications for branching databases.	In this unit, pupils will identify the input device (microphone) and output devices (speaker or headphones) required to work with sound digitally. Learners will discuss the ownership of digital audio and the copyright implications of duplicating the work of others. In order to record audio themselves, learners will use Audacity to produce a podcast, which will include editing their work, adding multiple tracks, and opening and saving the audio files. Finally, learners will evaluate their work and give feedback to their peers.	In this unit, pupils will create programs by planning, modifying, and testing commands to create shapes and patterns. They will use Logo, a text-based programming language. This unit is the first of the two programming units in Year 4, and looks at repetition and loops within programming.
Learning Objectives	I can create questions with yes/no answers. I can identify the attributes needed to collect data about an object. I can create a branching database. I can explain why it is important for a database to be well structured. I can plan the structure of a branching database. I can independently develop an identification tool.	I can identify that sound can be recorded. I can explain that audio recordings can be edited. I can recognise the different parts of creating a podcast project. I can apply audio editing skills independently. I can combine audio to enhance my podcast project. I can evaluate the effective use of audio.	I can identify that accuracy in programming is important. I can create a program in a text-based language. I can explain what 'repeat' means. I can modify a count-controlled loop to produce a given outcome. I can decompose a task into small steps. I can create a program that uses count-controlled loops to produce a given outcome.
Vocabulary	Attribute, value, questions, table, objects, branching databases, objects, equal, even, separate, order, organise, 2data, selecting, pictogram, information, decision tree, questions.	Audio, record, playback, microphone, speaker, headphones, input, output, start, stop, podcast, save, file, selection, edit, mixing, time shift, export, MP3, evaluate, feedback.	Program, turtle, commands, code, snippet, algorithm, design, debug, logo commands, pattern, repeat, repetition, count-controlled loop, value, decompose, procedure.

Computing – curriculum map – UKS2 – cycle A



COMPUTER SCIENCE	INFORMATION TECHNOLOGY	DIGITAL LITERACY	INFORMATION TECHNOLOGY
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	Autumn 1	Autumn 2	Spring 1
Unit	Hurry up, you've Benin there a while!	Lavas all you need	What did the Romans do for us?
Computing Unit (& yr group)	<p>Networks and Systems Computer systems and working collaboratively online, Y5 lessons (all) Google slides (or other collaborative editing software such as PowerPoint online, Padlet, Jamboard)</p>	<p>Creating Media first unit Vector drawing Y5 unit Google drawing (or any software where objects can be overlapped)</p>	<p>Programming first unit Selection in physical computing (Crumble controllers) Y5 Programming A Micro:bits</p>
Skills (disciplinary knowledge) The skills I have learned...	<p>Explain how computers are connected together to form systems. Explain the role that computers have in our lives and how information is transferred over the internet. Work collectively on a shared project online. Evaluate different ways of working together online.</p>	<p>Use drawing tools to produce different outcomes and for different purposes. Create a vector drawing by combining shapes and I can move, resize, rotate and duplicate them. Use tools to achieve a desired effect, for example using the zoom tool to add detail to my drawing. Create layers bring objects to the front or the back. Evaluate my vector drawing and say how I might improve it.</p>	<p>Explain how selection is used in a program and identify conditions and how to modify them. Create a program with different outcomes using selection and identify the condition and outcome is an if... then... else statement. Explain how selection directs the flow of a program. Design and create a program which uses selection: creating the algorithms, running the program and debugging.</p>
Knowledge (substantive knowledge) The knowledge I have...	<p>In this unit, pupils develop their understanding of computer systems and how information is transferred between systems and devices. Learners consider small-scale systems as well as large-scale systems. They explain the input, output, and process aspects of a variety of different real-world systems. Learners discover how information is found on the World Wide Web, through learning how search engines work (including how they select and rank results) and what influences searching, and through comparing different search engines.</p>	<p>In this unit, pupils start to create vector drawings. They learn how to use different drawing tools to help them create images. Learners recognise that images in vector drawings are created using shapes and lines, and each individual element in the drawing is called an object. Learners layer their objects and begin grouping and duplicating them to support the creation of more complex pieces of work.</p>	<p>In this unit, pupils will use physical computing to explore the concept of selection in programming through the use of the Crumble programming environment. Learners will be introduced to a microcontroller (Crumble controller) and learn how to connect and program it to control components (including output devices — LEDs and motors). Learners will be introduced to conditions as a means of controlling the flow of actions in a program. Learners will make use of their knowledge of repetition and conditions when introduced to the concept of selection (through the 'if...then...' structure) and write algorithms and programs that utilise this concept. To conclude the unit, learners will design and make a working model of a fairground carousel that will demonstrate their understanding of how the microcontroller and its components are connected, and how selection can be used to control the operation of the model. Throughout this unit, learners will apply the stages of programming design.</p>
Learning Objectives	<p>I can explain that computers can be connected together to form systems. I can recognise the role of computer systems in our lives. I can identify how to use a search engine. I can describe how search engines select results. I can explain how search results are ranked. I can recognise why the order of results is important, and to whom.</p>	<p>I can identify that drawing tools can be used to produce different outcomes. I can create a vector drawing by combining shapes. I can use tools to achieve a desired effect e.g. zoom. I can recognise that vector drawings consist of layers. I can group objects to make them easier to work with. I can apply what I have learned about vector drawings.</p>	<p>I can control a simple circuit connected to a computer. I can write a program that includes count-controlled loops. I can explain that a loop can stop when a condition is met. I can explain that a loop can be used to repeatedly check whether a condition has been met. I can design a physical project that includes selection. I can create a program that controls a physical computing project.</p>
Vocabulary	<p>Searching, search engine, web crawler, content creator, selection, ranking System, connection, digital, input, process, output, protocol, address, packet, chat, explore, slide deck, reuse, remix, collaboration.</p>	<p>Vector, drawing tools, shapes, object, icons, toolbar, move, resize, colour, rotate, duplicate/copy, zoom, select, alignment grid, handles, consistency, modify, layers, front, back, copy, paste, group, ungroup, reuse, improvement, evaluate, alternatives.</p>	<p>Microcontroller, controller, components, LED, crocodile clips, connect, battery, program, repetition, infinite loop, count-controlled loop, condition, true, false, input, action, selection, motor, switch, algorithm, debug, evaluate.</p>

Computing – curriculum map – UKS2 – cycle A



COMPUTER SCIENCE	INFORMATION TECHNOLOGY	DIGITAL LITERACY	INFORMATION TECHNOLOGY
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	Spring 2	Summer 1	Summer 2
Unit	Walking on sunshine	Mirror, Royal Signal, Manoeuvre	Current affairs
Computing Unit (& yr group)	Data Flat file databases Y5 unit J2E	Creating Media second unit 3D Modelling Y6 unit TinkerCAD	Programming second unit Variables in games Y6 Programming A (using different examples from Cycle B) Scratch (online)
Skills (disciplinary knowledge) The skills I have learned...	Create a database, using fields which hold and record the data. Search a database using 'and' and 'or.' Apply filters and select an appropriate chart or graph to visually compare data. Apply knowledge of a database to ask questions that will need more than one field to answer.	Use a computer to create and manipulate three-dimensional (3D) digital objects. Compare working digitally with 2D and 3D graphics. Construct a digital 3D model of a physical object. Identify that physical objects can be broken down into a collection of 3D shapes. Design a digital model by combining 3D objects. Develop and improve a digital 3D model.	Define a 'variable' as something that is changeable, variables can hold numbers or letters. Explain why a variable is used in a program; it is a placeholder in memory for a single value. Choose how to improve a game by using variables. Design a project that builds on a given example: choosing artwork and creating the algorithm. Use my design to create a project, testing the code that I have written. Evaluate my project.
Knowledge (substantive knowledge) The knowledge I have...	This unit looks at how a flat-file database can be used to organise data in records. Learners will use tools within a database to order and answer questions about data. They will create graphs and charts from their data to help solve problems. They will also use a real-life database to answer a question, and present their work to others.	In this unit, pupils will develop their knowledge and understanding of using a computer to produce 3D models. Learners will initially familiarise themselves with working in a 3D space, moving, resizing, and duplicating objects. They will then create hollow objects using placeholders and combine multiple objects to create a model of a desk tidy. Finally, learners will examine the benefits of grouping and ungrouping 3D objects, then go on to plan, develop, and evaluate their own 3D model of a building.	This unit explores the concept of variables in programming through games in Scratch. First, learners find out what variables are and relate them to real-world examples of values that can be set and changed. Then they use variables to create a simulation of a scoreboard. In Lessons 2, 3, and 5, which follow the Use-Modify-Create model, learners experiment with variables in an existing project, then modify them, before they create their own project. In Lesson 4, learners focus on design. Finally, in Lesson 6, learners apply their knowledge of variables and design to improve their games in Scratch.
Learning Objectives	I can use a form to record information. I can compare paper and computer-based databases. I can outline how you can answer questions by grouping and then sorting data. I can explain that tools can be used to select specific data. I can explain that computer programs can be used to compare data visually. I can use a real-world database to answer questions.	I can recognise that you can work in three dimensions on a computer. I can identify that digital 3D objects can be modified. I can To recognise that objects can be combined in a 3D model. I can create a 3D model for a given purpose. I can plan my own 3D model I can create my own 3D model.	I can define a 'variable' as something that is changeable. I can explain why a variable is used in a program. I can choose how to improve a game by using variables. I can design a project that builds on a given example. I can use my design to create a project. I can evaluate my project.
Vocabulary	Database, data, information, record, field, sort, order, group, search, criteria, value, graph, chart, axis, compare, filter, presentation.	2D, 3D, 3D object, 3D space, view, resize, colour, lift, rotate, position, select, duplicate, dimensions, placeholder, hole, group, ungroup, modify, evaluate, improve.	Variable, change, name, value, set, design, algorithm, code, task, artwork, program, project, code, test, debug, improve, evaluate, share.

Computing – curriculum map – KS1 – cycle B



COMPUTER SCIENCE	INFORMATION TECHNOLOGY	DIGITAL LITERACY	INFORMATION TECHNOLOGY
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	Autumn 1	Autumn 2	Spring 1
Unit	The great animals	Happily Everest after	What's the nurse that can happen?
Computing Unit (& yr group)	<p>Networks and Systems Repeat Cycle A Parts of a computer from Y1, lessons 2, 6 Info tech from Y2, lessons 1, 2, 3, 4, 6</p>	<p>Creating Media first unit Digital writing Y1 unit (use a different context from Cycle A) Word processor</p>	<p>Programming first unit Repeat Cycle A Y1 Prog A, Lessons 1, 4 Y2 Programming A, Lesson 1, 2, 4, 5 (also add in debugging) (See p. 14) Beebots / floor turtles</p>
Skills (disciplinary knowledge) The skills I have learned...	<p>Recognise the uses and features of information technology: describing some uses of computers and examples of computers. Identify information technology in school and at home and say what it is used for. Explain the benefits of IT and how devices work together. Recognise how to use IT responsibly and that rules are in place to keep me safe and help me.</p>	<p>Find and identify keys on a keypad. Use a computer to write. Add and remove text on a computer using the backspace key. Change the look of the text by using bold, italic and underlining. Make careful choices when changing text, for example, changing the font, selecting a word by double clicking or clicking and dragging. Explain why I used the tools that I chose. Compare writing on a computer with writing on paper. More able: Pupils demonstrate their depth of understanding by creating their own criteria for items against which they can physically sort, collate, edit, present, search through, re-order and re-structure and explain their reasoning.</p>	<p>Choose a series of words that can be enacted as a sequence. Create different algorithms for a range of sequences using the same commands and show the difference in outcomes between two sequences that have the same command. Predict the outcome of my algorithm and compare this with what did happen. Explain that programming projects can have code and artwork. Design a specific algorithm to meet my goal and explain what it should achieve. Create and debug a program that I have written. More able: an exceeding pupil will be able to apply their knowledge as a transferable skill across a range of debugging scenarios. They will also be able to predict outcomes in more complex code.</p>
Knowledge (substantive knowledge) The knowledge I have...	<p>In this unit, pupils will start to become familiar with the different components of a computer by developing their keyboard and mouse skills. They will also consider how to use technology responsibly and who to ask for help if they see any content or comments online that make them feel uncomfortable. Learners will develop their understanding of what information technology (IT) is and will begin to identify examples. They will discuss where they have seen IT in school and beyond, in settings such as shops, hospitals, and libraries. They will then investigate how IT improves our world, and they will learn about the importance of using IT responsibly.</p>	<p>In this unit, pupils will develop their understanding of the various aspects of using a computer to create and manipulate text. They will become more familiar with using a keyboard and mouse to enter and remove text. Pupils will also consider how to change the look of their text, and will be able to justify their reasoning in making these changes. Finally, they will consider the differences between using a computer to create text, and writing text on paper. They will be able to explain which method they prefer and explain their reasoning for choosing this.</p>	<p>In this unit, pupils develop their understanding of instructions in sequences and the use of logical reasoning to predict outcomes. They will use given commands in different orders to investigate how the order affects the outcome. They will also learn about design in programming. They will develop artwork and test it for use in a program. They will design algorithms and then test those algorithms as programs and debug them.</p>
Learning Objectives	<p>I can identify a computer and its main parts. I can create rules for using technology responsibly. I can recognise the uses and features of information technology. I can identify the uses of information technology in the school. I can identify information technology beyond school. I can explain how information technology helps us. I can recognise that choices are made when using information technology.</p>	<p>I can use a computer to write. I can add and remove text on a computer. I can identify that the look of text can be changed on a computer. I can make careful choices when changing text. I can explain why I used the tools that I chose. I can compare typing on a computer to writing on paper.</p>	<p>To explain what a given command will do. To combine four direction commands to make sequences. To describe a series of instructions as a sequence. To explain what happens when we change the order of instructions. To explain that programming projects can have code and artwork. To design an algorithm.</p>
Vocabulary	<p>Technology, computer, mouse, trackpad, keyboard, screen, click, drag, input device, shift, spacebar, capital letter, full stop, safely, responsibly, Information technology (IT), computer, barcode, scanner/scan.</p>	<p>Word processor, keyboard, keys, letters, Microsoft Word, letters, numbers, space, backspace, text cursor, toolbar, bold, italic, underline, undo, font, toolbar.</p>	<p>Forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, plan, algorithm, route, program, instruction, sequence, clear, unambiguous, algorithm, program, order, commands, prediction, artwork, design, route, mat, debugging.</p>

Computing – curriculum map – KS1 – cycle B



COMPUTER SCIENCE	INFORMATION TECHNOLOGY	DIGITAL LITERACY	INFORMATION TECHNOLOGY
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	Spring 2	Summer 1	Summer 2
Unit	Wicked weather!	Location, location, location	Too hot to handle
Computing Unit (& yr group)	Data Pictograms Y2 unit - context changes Year A and B - introduction to or use of depending on prior learning J2E	Creating Media second unit Digital music Y2 unit Chrome music lab	Programming second unit Programming animations Y1 programming B (repeated annually but context changed) (See p. 15) Scratch Jr
Skills (disciplinary knowledge) The skills I have learned...	Count and compare objects (data) using tally charts, comparing totals. Enter data on a computer and view that data in a different format: I can use a pictogram to answer simple questions about the data. Use a tally chart to create a pictogram. Answer 'more than'/'less than' and 'most/least' questions about an attribute. I can create a pictogram to arrange objects by attributes. Create a pictogram to compare people by a common attribute. Explain that we can present information using a computer and that sometimes it is this data should not be shared.	Listen to music, for longer periods of time, identifying differences in pieces and say how it makes me feel. Create a rhythm pattern and follow a rhythm pattern on a percussion instrument. Use a computer to experiment with pitch and duration.: Use a computer to create a musical pattern using three notes, refining my pattern. Create and save a musical pattern. Evaluate my work stating how I could improve it and be able to reopen it.	Compare different programming tools and find and use commands to move a sprite. Use a start block in a program and I can join blocks together. Explain what happens when I change a value. Add blocks to my sprite and delete a sprite. Create an algorithm for each sprite to control movement. Test the programs I have created and alter my designs. More able: Pupils can explain the possible actions of objects including moving, responding to being clicked on and collision with other objects. They can also use their prior coding experience to recognise whole blocks of familiar code.
Knowledge (substantive knowledge) The knowledge I have...	In this unit, pupils will begin to understand what the term data means and how data can be collected in the form of a tally chart. They will learn the term 'attribute' and use this to help them organise data. They will then progress onto presenting data visually using software. Pupils will use the data presented to answer questions.	In this unit, pupils will listen to a variety of pieces of music and consider how music can make them think and feel. They will compare creating music digitally and non-digitally. Pupils will look at patterns and purposefully create music.	In this unit, pupils will be introduced to on-screen programming through ScratchJr. They will explore the way a project looks by investigating sprites and backgrounds. They will use programming blocks to use, modify, and create programs. Pupils will also be introduced to the early stages of program design through the introduction of algorithms.
Learning Objectives	I can recognise that we can count and compare objects using tally charts. I can recognise that objects can be represented as pictures. I can create a pictogram. I can select objects by attribute and make comparisons. I can recognise that people can be described by attributes. I can explain that we can present information using a computer.	I can say how music can make us feel. I can identify that there are patterns in music. I can experiment with sound using a computer. I can use a computer to create a musical pattern. I can create music for a purpose. I can review and refine our computer work.	I can choose a command for a given purpose. I can show that a series of commands can be joined together. I can identify the effect of changing a value. I can explain that each sprite has its own instructions. I can design the parts of a project. I can use my algorithm to create a program.
Vocabulary	More than, less than, most, least, organise, data, object, tally chart, votes, total, pictogram, enter, data, tally chart, compare, count, explain, attribute, group, same, different, most popular, least popular.	Music, sound, quiet, loud, feelings, emotions, pattern, rhythm, pulse, pitch, tempo, notes, instrument, create, open, edit.	ScratchJr, Bee-Bot, command, sprite, compare, programming, programming area, block, joining, start, program, background, delete, reset, algorithm, predict, effect, change, value, block, instructions, appropriate, design.

Computing – curriculum map – LKS2 – cycle B



COMPUTER SCIENCE	INFORMATION TECHNOLOGY	DIGITAL LITERACY	INFORMATION TECHNOLOGY
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	Autumn 1	Autumn 2	Spring 1
Unit	The Vikings on the wall	You crack me up!	Where's my mummy?
Computing Unit (& yr group)	Networks and Systems World Wide Web, Y4 unit	Creating Media first unit Photo editing Y4 unit PicCollage	Programming first unit Introduction to Scratch Combine lesson 1,2,3 from Y3 programming A with lesson 1 from Y3 programming B . Create 2 lessons from these. Repeat annually. Then: Y3 Programming B Lessons 2 – 6 Scratch (online)
Skills (disciplinary knowledge) The skills I have learned...	Explain how the internet is made up of connected networks. Explain how websites are stored on the www, what types of media can be shared and how to access websites on the WWW. Explain that that content of the www is created by people. Evaluate the consequences of unreliable content. Name the different parts of a desktop computer and know what the function of the different parts of a computer is. E.g. Make a leaflet labelling a computer.	Explain the effect that editing can have on an image. Change the composition of an image by selecting parts of it. Use editing tools on a photograph and can explain the effect these have. Evaluate how changing can improve an image. Save and retrieve an image.	I can explain how a sprite moves in an existing project. I can create a program to move a sprite in four directions. I can adapt a program to a new context. I can develop my program by adding features. I can identify and fix bugs in a program. I can design and create a maze-based challenge.
Knowledge (substantive knowledge) The knowledge I have...	In this unit, pupils will apply their knowledge and understanding of networks, to appreciate the internet as a network of networks which need to be kept secure. They will learn that the World Wide Web is part of the internet, and will be given opportunities to explore the World Wide Web for themselves in order to learn about who owns content and what they can access, add, and create. Finally, they will evaluate online content to decide how honest, accurate, or reliable it is, and understand the consequences of false information.	In this unit, pupils will develop their understanding of how digital images can be changed and edited, and how they can then be resaved and reused. They will consider the impact that editing images can have and evaluate the effectiveness of their choices.	This unit explores the links between events and actions, while consolidating prior learning relating to sequencing. Learners begin by moving a sprite in four directions (up, down, left, and right). They then explore movement within the context of a maze, using design to choose an appropriately sized sprite. This unit also introduces programming extensions, through the use of Pen blocks. Learners are given the opportunity to draw lines with sprites and change the size and colour of lines. The unit concludes with learners designing and coding their own maze-tracing program.
Learning Objectives	I can describe how networks physically connect to other networks. I can recognise how networked devices make up the internet. I can outline how websites can be shared via the World Wide Web (WWW). I can describe how content can be added and accessed on the World Wide Web (WWW). I can recognise how the content of the WWW is created by people. I can evaluate the consequences of unreliable content.	I can explain that the composition of digital images can be changed. I can explain that colours can be changed in digital images. I can explain how cloning can be used in photo editing. I can explain that images can be combined. I can combine images for a purpose. I can evaluate how changes can improve an image.	I can explain how a sprite moves in an existing project. I can create a program to move a sprite in four directions. I can adapt a program to a new context. I can develop my program by adding features. I can identify and fix bugs in a program. I can design and create a maze-based challenge.
Vocabulary	Internet, network, router, network security, network switch, wireless access point (WAP), router, website, web page, web address, router, routing, route tracing, browser, World Wide Web, content, links, files, use, download, sharing, ownership, permission, accurate, honest, adverts	Image, edit, arrange, select, digital, crop, undo, save, search, copyright, compositio save, pixels, rotate, flip, adjustments, effects, colours, hue/saturation, sepia, version, illustrator, clone, recolour, magic wand, sharpen, brighten, fake, real, composite, background, foreground, retouch, paste, alter, publication, elements, original, font style, border, layer	Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop, motion, turn, point in direction, go to, glide, event, task, design, code, run the code, order, note, chord, algorithm, bug, debug, Motion, event, sprite, algorithm, logic, move, resize, algorithm, extension block, pen up, set up, design, action, debugging, errors, setup, test

Computing – curriculum map – LKS2 – cycle B



COMPUTER SCIENCE	INFORMATION TECHNOLOGY	DIGITAL LITERACY	INFORMATION TECHNOLOGY
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	Spring 2	Summer 1	Summer 2
Unit	Don't rainforest on my parade	Great scot!	Ch-Ch-Changes!
Computing Unit (& yr group)	Data Data logging Y4 unit Audino Science Journal App	Creating Media second unit Stop Frame Animation Y3 unit iMotion app (or any stop-motion software)	Programming second unit Repetition in games Y4 Programming B Scratch (online)
Skills (disciplinary knowledge) The skills I have learned...	Explain that data gathered can be used to answer a given question and I can suggest questions to be asked of the data. Use a data logger to collect data and that the data logger collects 'data points' from sensors over a given time. Use collected data to answer questions and draw conclusions.	I can explain that animation is a sequence of drawings or photographs. I can create a stop frame animation and predict what it will look like. I can break down a story into setting, characters and events to create a storyboard. I can evaluate the quality of my animation and review a series of frames to check my work. To review and improve an animation explaining how I will improve it. I can evaluate the impact of adding other media to my animation	Develop the use of count-controlled loops in a different programming environment, for example: Scratch. Explain that in programming there are infinite loops and count controlled loops. Develop a program which includes two or more loops which run at the same time. Modify an infinite loop. More able: Pupils' designs for their programs, show that they are absorbing new knowledge of coding structures such as 'if statements, repetition and variables to think of their programs in logical, achievable steps.
Knowledge (substantive knowledge) The knowledge I have...	In this unit, pupils will consider how and why data is collected over time. Pupils will consider the senses that humans use to experience the environment and how computers can use special input devices called sensors to monitor the environment. They will collect data as well as access data captured over long periods of time. They will look at data points, data sets, and logging intervals. Pupils will spend time using a computer to review and analyse data. Towards the end of the unit, pupils will pose questions and then use data loggers to automatically collect the data needed to answer those questions.	In this unit, pupils will use a range of techniques to create a stop-frame animation. Next, they will apply those skills to create a story-based animation. This unit will conclude with learners adding other types of media to their animation, such as music and text.	In this unit, pupils will explore the concept of repetition in programming using the Scratch environment. The unit begins with a Scratch activity similar to that carried out in Logo in Programming unit A, where learners can discover similarities between two environments. Pupils look at the difference between count-controlled and infinite loops and use their knowledge to modify existing animations and games using repetition. Their final project is to design and create a game which uses repetition, applying stages of programming design throughout.
Learning Objectives	I can explain that data gathered over time can be used to answer questions. I can use a digital device to collect data automatically. I can explain that a data logger collects 'data points' from sensors over time. I can recognise how a computer can help us analyse data. I can identify the data needed to answer questions. I can use data from sensors to answer questions.	I can explain that animation is a sequence of drawings or photographs. I can relate animated movement with a sequence of images I can plan an animation. I can identify the need to work consistently and carefully. I can review and improve an animation. I can evaluate the impact of adding other media to an animation.	I can develop the use of count-controlled loops in a different programming environment. I can explain that in programming there are infinite loops and count-controlled loops. I can develop a design that includes two or more loops which run at the same time. I can modify an infinite loop in a given program. I can design a project that includes repetition. I can create a project that includes repetition.
Vocabulary	Data, table (layout), input device, sensor, data logger, logging, data point, interval, analyse, import, export, logged, collection, analyse, review, conclusion.	Animation, flip book, stop frame, animation, frame, sequence, image, photograph, setting, character, events, onion skinning, consistency, delete, frame, media, import, transition.	Scratch, programming, sprite, blocks, code, loop, repeat, value, forever, infinite loop, count-controlled loop, animate, costume, event block, duplicate, modify, debug, refine, evaluate, algorithm.

Computing – curriculum map – UKS2 – cycle B



COMPUTER SCIENCE	INFORMATION TECHNOLOGY	DIGITAL LITERACY	INFORMATION TECHNOLOGY
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	Autumn 1	Autumn 2	Spring 1
Unit	It's all Greek to me!	Ain't no mountain high enough	The big Shang theory
Computing Unit (& yr group)	Networks and Systems How search engines work, how results are ranked, online communication, Y6 unit	Creating Media first unit Video production Y5 unit Video editing software (iMovie)	Programming first unit Selection in quizzes Year 5 Programming B Scratch (online)
Skills (disciplinary knowledge) The skills I have learned...	Search the web for specific information and identify and compare results from different search engines. Explain that web crawlers are the digital bots that search the internet for index pages for web address. Explain web pages are ranked and how search engines make money. Identify that there are different ways to communicate over the internet.	Explain that a video can hold visual and audio media. Plan a video using a storyboard. Make a recording taking into account light and angles. Reshot, edit and improve my video and include special effects, title screen and end credits	Explain how selection is used in a program and identify conditions and how to modify them. Create a program with different outcomes using selection and identify the condition and outcome is an if... then... else statement. Explain how selection directs the flow of a program Design and create a program which uses selection: creating the algorithms, running the program and debugging.
Knowledge (substantive knowledge) The knowledge I have...	In this unit, pupils explore how data is transferred over the internet. Pupils initially focus on addressing, before they move on to the makeup and structure of data packets. They then look at how the internet facilitates online communication and collaboration; they complete shared projects online and evaluate different methods of communication. Finally, they learn how to communicate responsibly by considering what should and should not be shared on the internet and how to report concerns about inappropriate content online.	In this unit, pupils will learn how to create short videos by working in pairs or groups. As they progress through this unit, they will be exposed to topic-based language and develop the skills of capturing, editing, and manipulating video. Pupils are guided with step-by-step support to take their idea from conception to completion. At the conclusion of the unit, pupils have the opportunity to reflect on and assess their progress in creating a video.	In this unit, pupils will develop their knowledge of 'selection' by revisiting how 'conditions' can be used in programming, and then learning how the 'if... then... else...' structure can be used to select different outcomes depending on whether a condition is 'true' or 'false'. They represent this understanding in algorithms, and then by constructing programs in the Scratch programming environment. They learn how to write programs that ask questions and use selection to control the outcomes based on the answers given. They use this knowledge to design a quiz in response to a given task and implement it as a program. To conclude the unit, pupils evaluate their program by identifying how it meets the requirements of the task, the ways they have improved it, and further ways it could be improved.
Learning Objectives	I can explain the importance of internet addresses. I can recognise how data is transferred across the internet. I can explain how sharing information online can help people to work together. I can evaluate different ways of working together online. I can recognise how we communicate using technology. I can evaluate different methods of online communication.	I can explain what makes a video effective. I can use a digital device to record video. I can capture video using a range of techniques. I can create a storyboard. I can identify that video can be improved through reshooting and editing. I can consider the impact of the choices made when making and sharing a video.	I can explain how selection is used in computer programs. I can relate that a conditional statement connects a condition to an outcome. I can explain how selection directs the flow of a program. I can design a program that uses selection. I can create a program that uses selection. I can evaluate my program.
Vocabulary	Search, search engine, Google, Bing, Yahoo, refine, index, crawler, bot, optimisation, links, web crawlers, content creator, ranking, communication, internet, public, private, one-way, two-way, one-to-one, one-to-many, SMS, email, WhatsApp, blog, YouTube, Twitter, BBC Newsround.	Video, audio, recording, storyboard, script, soundtrack, dialogue, capture, zoom, storage, digital, tape, AV (audiovisual), videographer, video techniques, zoom, pan, tilt, angle, YouTuber, content, camera, colour, export, trim/clip, titles, end credits, timeline, transitions, soundtrack, retake/reshoot, special effects, constructive feedback.	Selection, condition, true, false, count-controlled loop, outcomes, conditional statement – the linking together of a condition and outcomes, algorithm, program, debug, implement, question, answer, task, input, outcomes, test, run, setup, share, evaluate, constructive.

Computing – curriculum map – UKS2 – cycle B



COMPUTER SCIENCE	INFORMATION TECHNOLOGY	DIGITAL LITERACY	INFORMATION TECHNOLOGY
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	Spring 2	Summer 1	Summer 2
Unit	How is fair trade fair?	Only we can save the world!	Who do you think you are, Mr Hitler?
Computing Unit (& yr group)	Data Spreadsheets Y6 unit Google sheets	Creating Media second unit Webpage creation Y6 unit Google Sites	Programming second unit Variables in games Y6 Programming A (using different examples from Cycle A) Scratch (online)
Skills (disciplinary knowledge) The skills I have learned...	Create a formula in a spreadsheet for simple conversions e.g. cm to m and use formulas to calculate the perimeter of a rectangle. Work collaboratively to solve a problem using spreadsheets. Use simple formulae to solve calculations including =sum and other statistical functions. Present data visually using graphs in 2calculate and/or Excel. Decide which keys are more suitable to perform a task. E.g. Numerical keys when typing long numbers. More able: Pupils can create a database with a greater number of fields and create complex search questions about their database for their classmates to answer (Questions using and/or statements).	Explore a webpage and identify the different types of media that are used in its construction and its common features. Plan a design for a webpage that suits my purpose. Find suitable images and consider the ownership of these images. Add content to my page, make edits and preview it on a different device. Make multiple pages and link them using hyperlinks. Evaluate my the users experience of a website.	Define a 'variable' as something that is changeable, variables can hold numbers or letters. Explain why a variable is used in a program; it is a placeholder in memory for a single value. Choose how to improve a game by using variables. Design a project that builds on a given example: choosing artwork and creating the algorithm. Use my design to create a project, testing the code that I have written. Evaluate my project.
Knowledge (substantive knowledge) The knowledge I have...	This unit introduces pupils to spreadsheets. They will be supported in organising data into columns and rows to create their own data set. Pupils will be taught the importance of formatting data to support calculations, while also being introduced to formulas and will begin to understand how they can be used to produce calculated data. Pupils will be taught how to apply formulas that include a range of cells, and apply formulas to multiple cells by duplicating them. Pupils will use spreadsheets to plan an event and answer questions. Finally, pupils will create charts, and evaluate their results in comparison to questions asked.	In this unit, pupils will be introduced to creating websites for a chosen purpose. Pupils identify what makes a good web page and use this information to design and evaluate their own website using Google Sites. Throughout the process, learners pay specific attention to copyright, fair use of media and creative commons, the aesthetics of the site, and navigation paths. This will enable pupils to understand how to be a respectful and responsible user of technology online.	In this unit, pupils explore the concept of variables in programming through games in Scratch. First, pupils find out what variables are and relate them to real-world examples of values that can be set and changed. Then they use variables to create a simulation of a scoreboard. In Lessons 2, 3, and 5, which follow the Use-Modify-Create model, pupils experiment with variables in an existing project, then modify them, before they create their own project. In Lesson 4, pupils focus on design. Finally, in Lesson 6, pupils apply their knowledge of variables and design to improve their games in Scratch.
Learning Objectives	<ul style="list-style-type: none"> I can create a data set in a spreadsheet. I can build a data set in a spreadsheet. I can explain that formulas can be used to produce calculated data. I can apply formulas to data. I can create a spreadsheet to plan an event. I can choose suitable ways to present data. 	<ul style="list-style-type: none"> I can review an existing website and consider its structure. I can plan the features of a web page. I can consider the ownership and use of images (copyright). I can recognise the need to preview pages. I can outline the need for a navigation path. I can recognise the implications of linking to content owned by other people. 	<ul style="list-style-type: none"> I can define a 'variable' as something that is changeable. I can explain why a variable is used in a program. I can choose how to improve a game by using variables. I can design a project that builds on a given example. I can use my design to create a project. I can evaluate my project.
Vocabulary	Spreadsheet, data, data heading, data set, cells, columns and rows, data item, format, common attribute, formula, calculation, call reference, sigma, graph, evaluate, results, comparisons, questions, software, tools, data, propose.	Website, web page, browser, media, Hypertext Markup Language (HTML), layout, header, media, purpose, copyright, fair use, evaluate, preview, device, breadcrumb, trail, navigation, hyperlink, subpage, implication, external link, embed.	Variable, change, name, value, set, design, algorithm, code, task, artwork, program, project, code, test, debug, improve, evaluate, share.