



Computing Progression Document

Computing Systems and Network Autumn 1 & 2

Year	Knowledge	Skills	Vocab
EYFS			
Year 1	<p><u>Autumn 1 & 2 - Technology around us - Year 1</u> Where do we see technology around us and how can it help us? Learners 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 and who to ask for help if they see any content or comments online that make them feel uncomfortable.</p> <ul style="list-style-type: none"> • Learners 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 be able to recognise that some technology can be used in different ways • To be able to use a mouse, keyboard in different ways 	<p>Learners will learn to use a computer / iPad</p> <ul style="list-style-type: none"> • I can locate examples of technology in the classroom • I can name the main parts of a computer • I can switch on and log into a computer • I can use a mouse to click and drag • I can use a mouse to open a program • I can click and drag to make objects on a screen • I can use a mouse to create a picture • I can say what a keyboard is for • I can type my name on a computer • I can save my work to a file • I can delete letter 	<ul style="list-style-type: none"> • technology, • computer, • mouse, • trackpad, • keyboard, • screen, • double-click • typing
Year 2	<p><u>Autumn 1 & 2 - IT around us</u> How is IT being used for good in our lives? 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. Learners will then investigate how IT improves our world, and they will learn about the importance of using IT responsibly.</p> <ul style="list-style-type: none"> • To recognise the uses and features of information technology • To identify the uses of information technology in the school • To identify information technology beyond school • To explain how information technology helps us • To explain how to use information technology safely • To recognise that choices are made when using information technology 	<p>Learners will develop an understanding of what IT is and identify how it can help them.</p> <ul style="list-style-type: none"> • I can identify examples of computers • I can describe some uses of computers • I can identify that some IT can be used in more than one way • I can list different uses of information technology • I can talk about different rules for using IT and how they can help keep me safe 	<ul style="list-style-type: none"> • Information technology (IT), • computer, • barcode, • scanner/scan

<p>Year 3</p>	<p>Autumn 1 & 2 - Connecting Computers How are computers connected? Learners 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.</p> <ul style="list-style-type: none"> • To explain how digital devices function • To identify input and output devices • To recognise how digital devices can change the way that we work • To explain how a computer network can be used to share information • To explore how digital devices can be connected • To recognise the physical components of a network 	<p>Learners will learn the fundamentals such as inputs, processes and outputs. This will then move to how information is moved between devices and how they form a network</p> <ul style="list-style-type: none"> • I can explain that digital devices accept inputs • I can explain that digital devices produce outputs • I can classify input and output devices • I can explain how I use digital devices for different activities • I can suggest differences between using digital devices and using non-digital tools • I can explain how messages are passed through multiple connections • I can recognise that a computer network is made up of a number of devices • I can demonstrate how information can be passed between devices • I can identify the benefits of computer networks 	<ul style="list-style-type: none"> • digital device, • input, • process, • output, • program, • digital, • non-digital, • connection, • network, • switch, • server, • wireless access point, • cables, • sockets
<p>Year 4</p>	<p>Autumn 1 & 2- The Internet What is the WWW made of and is it all true? Learners 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.</p> <ul style="list-style-type: none"> • To describe how networks physically connect to other networks • To recognise how networked devices make up the internet • To outline how websites can be shared via the World Wide Web (WWW) • To describe how content can be added and accessed on the World Wide Web (WWW) • To recognise how the content of the WWW is created by people • To evaluate the consequences of unreliable content 	<p>Learners will explore how a network can share messages with another network to form the internet. They will also explore the WWW understanding not everything is true</p> <ul style="list-style-type: none"> • I can describe the internet as a network of networks • I can explain that the internet is used to provide many services • I can recognise that the World Wide Web contains websites and web pages • I can explain what media can be found on websites • I can explain that there are rules to protect content • I can explain that not everything on the World Wide Web is true • I can explain why I need to think carefully before I share or reshare content 	<ul style="list-style-type: none"> • internet, • network, • router, • security, • switch, • server, • wireless access point (wap) • website, • web page, • web address • routing • web browser, • World Wide Web,

<p>Year 5</p>	<p>Autumn 1&2 - Systems and searching How can we search for information safely and effectively? In this unit, learners 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> <ul style="list-style-type: none"> • I can explain that systems are built using a number of parts. • I can describe that a computer system features inputs, processes, and outputs. • I can identify tasks that are managed by computer systems. • I can make use of a web search to find specific information and refine my search. 	<p>Learners will learn how to search online safely and effectively; this could be combined into a science / topic lesson.</p> <ul style="list-style-type: none"> • Follow Teach Computing slides. • Create a toy with inputs, outputs and processes. • Understand what systems we have to protect ourselves online. • Practice how to spot a legitimate website. • Learn how to refine web searches to find specific information. • Index the classroom. • Unplugged activity to learn how webpages are ranked. • To finish this unit, use the summative assessment from Teach Computing to ensure children's understanding 	<ul style="list-style-type: none"> • System, • connection, • digital, • input, • process, • output • Search, • Search engine, • refine • Ordering, • ranking,
<p>Year 6</p>	<p>Autumn 1 & 2 - Communication and collaboration How is data transferred over the internet? In this unit learners explore how data is transferred over the internet. Learners initially focus on addressing, before they move on to the makeup and structure of data packets. Learners 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.</p> <ul style="list-style-type: none"> • To explain the importance of internet addresses • To recognise how data is transferred across the internet • To explain how sharing information online can help people to work together • To evaluate different ways of working together online • To recognise how we communicate using technology • To evaluate different methods of online communication 	<p>Learners will learn to understand how we can use the internet to communicate & share online safety.</p> <ul style="list-style-type: none"> • I can recognise that data is transferred using agreed methods • I can explain that internet devices have addresses to access websites • I can identify and explain the main parts of a data packet • I can explain that data is transferred over networks in packets • I can recognise how to access shared files stored online • I can send information and work together over the internet • I can recognise that working together on the internet can be public or private • I can identify that there are a variety of ways to communicate over the internet • I can compare different methods of communicating on the internet • I can decide when I should and should not share information online • I can explain how to report inappropriate content online 	<ul style="list-style-type: none"> • 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.



Computing Progression Document

Programming Spring 1 & 2 CYCLE A

Year	Knowledge	Skills	Vocab
EYFS			
Year 1	<p><u>Spring 1 - Moving a robot</u> How can we use instructions to move a robot? This unit introduces learners to early programming concepts. Learners will explore using individual commands, both with other learners and as part of a computer program. They will identify what each floor robot command does and use that knowledge to start predicting the outcome of programs. The unit is paced to ensure time is spent on all aspects of programming and builds knowledge in a structured manner. Learners are also introduced to the early stages of program design through the introduction of algorithms.</p> <ul style="list-style-type: none"> To explain what a given command will do I can follow an instruction I can give directions To combine 'forwards' and 'backwards' commands to make a sequence To plan a simple program To find more than one solution to a problem 	<p>Learners will learn to be able to move a Beebot to given instructions</p> <ul style="list-style-type: none"> Predict the outcome of a command Explain what commands do Run a command on a Beebot Choose a series of commands that can be run as a program Combine four direction commands to make sequences Run a program on a Beebot 	<ul style="list-style-type: none"> Bee-Bot, forwards, backwards, turn, clear, go, commands, instructions, directions, left, right, route, plan, algorithm, program.
Year 2	<p><u>Spring 2 - Robot algorithms</u> How can we use instructions to move a robot? This unit 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..</p> <ul style="list-style-type: none"> To describe a series of instructions as a sequence To explain what happens when we change the order of instructions To use logical reasoning to predict the outcome of a program To explain that programming projects can have code and artwork To design an algorithm To create and debug a program that I have written 	<p>Learners will learn to be able to move a Beebot to given instructions</p> <ul style="list-style-type: none"> I can give and follow instructions I can improve language of instructions to be clear and precise I can order and sequence instructions I can make predictions on the outcomes of a sequence I can design, create and test a sequence with a Beebot I can move a robot around a designed mat I can fix errors 'debug' algorithms in my programs 	<ul style="list-style-type: none"> instruction, sequence, clear, unambiguous, algorithm, program, order prediction, artwork, design, route, debugging, decomposition

<p>Year 3 SPRING 1</p>	<p>Spring 1 - Sequencing Sounds Why do programs sometimes not work how we intended? How do we solve this? 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> <ul style="list-style-type: none"> To explore a new programming environment To identify that commands have an outcome To explain that a program has a start To recognise that a sequence of commands can have an order To change the appearance of my project To create a project from a task description 	<p>Learners will have their introduction to Scratch, learning the basics and to create a musical online Piano.</p> <ul style="list-style-type: none"> I can identify the objects in a Scratch project (sprites, backdrops) I can recognise that commands in Scratch are represented as blocks I can create a program following a design and understand that each sprite is controlled by the commands I choose I can predict the coding blocks used to move a sprite I can create a sequence of connected commands I can explain what a sequence is I can order notes into a sequence I can make design choices for my artwork I can relate a task description to a design I can implement my algorithm as code 	<ul style="list-style-type: none"> Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop, motion, turn, point direction <ul style="list-style-type: none"> go to, glide, sequence, event, task, design, run order, note, chord, algorithm, bug, debug code
<p>Year 3 SPRING 2</p>	<p>Spring 2 - Events and actions in programs How can we code a sprite to move around a maze? 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.</p> <ul style="list-style-type: none"> To explain how a sprite moves in an existing project To create a program to move a sprite in four directions To adapt a program to a new context To develop my program by adding features To identify and fix bugs in a program To design and create a maze-based challenge 	<p>Learners will create a maze game on Scratch building on the first unit.</p> <ul style="list-style-type: none"> I can explain the relationship between an event and an action I can identify a way to improve a program I can choose a character for my project I can choose a suitable size for a character in a maze I can program movement I can choose blocks to set up my program I can choose suitable keys to turn on additional features I can build more sequences of commands to make my design work I can code my sprite to move in all directions I can debug my algorithm if it isn't working as planned I can code my sprite to leave a pen trail showing where the sprite has moved I can make design choices and justify them I can implement my design I can evaluate my project 	<ul style="list-style-type: none"> motion, event, sprite, algorithm, logic, move, resize, extension block, pen up, actions set up, pen, design, action, debugging, errors, setup, code, test, debug

<p>Year 5</p>	<p>Spring 1 - Selection in Physical Computing What components can you put together and how do you control them? In this unit, learners 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 components (including output devices- LEDs and motors) through the application of their existing programming knowledge.</p> <ul style="list-style-type: none"> • To explain that a condition can only be true or false • To relate that a count-controlled loop contains a condition. • To compare a count-controlled loop with a condition-controlled loop • To explain that a condition-controlled loop will stop when a condition is met. • To create a condition-controlled loop • To use a condition in an 'if...then...' statement to start an action 	<p>Learners will use the Crumbles or Microbits</p> <ul style="list-style-type: none"> • Become familiar with the controller. • Connect a circuit of the controller and LED light, setting and controlling the colours. • Connect a motor to the controller. • Construct a program to control multiple outputs. • Create conditions for start / stop actions. • Connect a switch. <p>Advanced skills -</p> <ul style="list-style-type: none"> • Connect microbit to the computer. • Create coding to control the microbit. • Code the microbit to say a message. • Code the microbit to be a magic 8 ball. • Code the microbit to play music on demand 	<ul style="list-style-type: none"> • microcontroller • components, • connection, • infinite loop • selection, • condition, • action, • repetition • program, • controller, • switch, • motor, • LED, • Sparkle, • crocodile clips, • battery box
<p>Year 6</p>	<p>Spring 2 - Variables in games How can we add elements to a game? 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.</p> <ul style="list-style-type: none"> • To define a 'variable' as something that is changeable • To explain why a variable is used in a program • To choose how to improve a game by using variables • To design a project that builds on a given example • To use my design to create a project • To evaluate my project 	<p>Learners will use Scratch to create a falling fruit catcher game</p> <ul style="list-style-type: none"> • I understand what a sprite is • I can identify and explain what a variable is • I can recognize that the value of a variable can be changed • I can make use of an event in a program to set a variable • I can create multiple sprites for a purpose • I can create algorithms for my project • I can add a scoring algorithm to my program • I can add a timer to my program • I can test the code I have written • I can identify ways that my game could be improved 	<ul style="list-style-type: none"> • variable, • change, • name, • value, • set, • design, • event, • algorithm, • code, • task • declare • . artwork, • program, • project, • code, • test, • debug, • improve, • evaluate, • share, • assign,



Computing Progression Document

Programming Spring 1 & 2 CYCLE B

Year	Knowledge	Skills	Vocab	
EYFS				
Year 1	<p>Spring 2 - Programming Animations How can we control a spite using algorithms? This unit introduces learners 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> <ul style="list-style-type: none"> To choose a command for a given purpose To show that a series of commands can be joined together To identify the effect of changing a value To explain that each sprite has its own instructions To design the parts of a project To use my algorithm to create a program 	<p>Learners will be introduced to coding</p> <ul style="list-style-type: none"> I can find the commands to move a sprite I can use commands to move a sprite I can use more than one block by joining them together I can use a Start block in a program I can run my program I can find blocks that have numbers, change the value I can show that a project can include more than one sprite I can delete a sprite I can add blocks to each of my sprites I can choose appropriate artwork for my project I can decide how each sprite will move I can create an algorithm for each sprite I can test the programs I have created 	<ul style="list-style-type: none"> ScratchJr, command, programme, background, programming, instructions, block, joining, start, run, sprite compare <table border="0" style="display: inline-table; vertical-align: top;"> <tr> <td style="padding-left: 20px;"> <ul style="list-style-type: none"> delete, reset, algorithm, predict, effect, change, value, design area </td> </tr> </table>	<ul style="list-style-type: none"> delete, reset, algorithm, predict, effect, change, value, design area
<ul style="list-style-type: none"> delete, reset, algorithm, predict, effect, change, value, design area 				
Year 2	<p>Spring 2 - Programming quizzes How can we control a spite using algorithms? Learners begin to understand that sequences of commands have an outcome and make predictions based on their learning. They use and modify designs to create their own quiz questions in ScratchJr and realise these designs in ScratchJr using blocks of code. Finally, learners evaluate their work and make improvements to their programming projects.</p> <ul style="list-style-type: none"> To explain that a sequence of commands has a start To explain that a sequence of commands has an outcome To create a program using a given design To change a given design To create a program using my own design To decide how my project can be improved 	<p>Learners will use Scratch Junior to create an animation of the seasons and a quiz</p> <ul style="list-style-type: none"> I can identify the start of a sequence I can identify that a program needs to be started I can show how to run my program I can predict the outcome of a sequence of commands I can change the outcome of a sequence of commands I can decide which blocks to use to meet the design I can build the sequences of blocks I need I can choose backgrounds for the design I can choose characters for the design I can create a program based on the new design I can create an algorithm I can build sequences of blocks to match my design I can debug my program 	<ul style="list-style-type: none"> sequence, command, decomposition. run, start, outcome, predict, blocks, design, actions, sprite, project program <table border="0" style="display: inline-table; vertical-align: top;"> <tr> <td style="padding-left: 20px;"> <ul style="list-style-type: none"> modify, change, algorithm, build, match, compare, debug, features, evaluate, code </td> </tr> </table>	<ul style="list-style-type: none"> modify, change, algorithm, build, match, compare, debug, features, evaluate, code
<ul style="list-style-type: none"> modify, change, algorithm, build, match, compare, debug, features, evaluate, code 				

<p>Year 4 SPRING 1</p>	<p>Spring 1 - Repetition in Shapes How can we use instructions draw shapes? Learners 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.</p> <ul style="list-style-type: none"> To identify that accuracy in programming is important To create a program in a text-based language To explain what 'repeat' means To modify a count-controlled loop to produce a given outcome To decompose a task into small steps To create a program that uses count-controlled loops to produce a given outcome 	<p>Learners will create repeated patterns, letters, numbers and shapes</p> <ul style="list-style-type: none"> Children learn what the common instructions are in 2Logo and how to type them I can use 2Logo to create letter shapes. I can use the Repeat command in 2Logo to create shapes To use and build procedures in 2Logo I can follow 2Logo code to predict the outcome I can find the most efficient way to draw shapes I can create 'flowers' or 'crystals' using 2Logo 	<ul style="list-style-type: none"> Logo (programming environment), program, turtle, commands, code snippet, algorithm, design, debug pattern, repeat, repetition, count-controlled value, trace, decompose, procedure
<p>Year 4 Spring 2</p>	<p>Spring 2 - Repetition in Games In what different ways can we control a sprite in Scratch? Learners 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. Learners 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.</p> <ul style="list-style-type: none"> To develop the use of count-controlled loops in a different programming environment To explain that in programming there are infinite loops and count-controlled loops To develop a design that includes two or more loops which run at the same time To modify an infinite loop in a given program To design a project that includes repetition To create a project that includes repetition 	<ul style="list-style-type: none"> I can predict the outcome of a snippet of code I can modify a snippet of code to create a given outcome I can modify loops to produce a given outcome I can choose when to use a count-controlled and an infinite loop I can explain what the outcome of the repeated action should be I can animate my own name I can build an animal catching game I can develop my own design explaining what my project will do I can refine the algorithm in my design I can build a program that follows my design I can evaluate the steps I followed when building my project 	<ul style="list-style-type: none"> 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

<p>Year 5</p>	<p>Summer 1 - Vector Drawing How do we create drawings to be used digitally? In this unit, learners 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.</p> <ul style="list-style-type: none"> • I can recognise that vector drawings are made using shapes. • I can experiment with the shape and line tools. • I can move, resize, and rotate objects I have duplicated. • I can use the zoom tool to help me add detail to my drawings. • I can identify that each added object creates a new layer in the drawing. • I can copy part of a drawing by duplicating several objects. • I can recognise when I need to group and ungroup objects. 	<ul style="list-style-type: none"> • Use PowerPoint to create vector drawings using inspiration. • Insert shapes, move, rotate and change the size. • Manipulate the layers of specific shapes • Group shapes together and ungroup them. • Duplicate shapes • Use copy and paste. • To use undo and re-do • change the order of layers in a vector drawing. • To use the left and right click appropriately 	<ul style="list-style-type: none"> • Vector Drawing • Copy • Paste • Group • Rotate • Insert • Shape fill • Shape outline
<p>Year 6</p>	<p>Spring 2 - Flat-file Databases How can you represent data? This unit looks at how a flat-file database can be used to organise data in records. Pupils use tools within a database to order and answer questions about data. They create graphs and charts from their data to help solve problems. They use a real-life database to answer a question and present their work to others.</p> <ul style="list-style-type: none"> • To explain that a computer program can be used to organise data. • To choose different ways to view data. • To outline how ordering data allows us to answer some questions. • To outline how operands can be used to filter data. • To choose which attribute and value to search by to answer a given question (operands) • To outline how 'AND' and 'OR' can be used to refine data selection. • To select an appropriate graph to visually compare data 	<ul style="list-style-type: none"> • Using 2Investigate create data base design with multiple data fields (Country name, population, capital city, coastline, continent, area) • Code data fields to accept the correct type of data (text or numbers or yes/no) • Children to create data files for multiple countries. • View the data in different ways. • Order the data in different ways. • Sort / group the data in different ways • Create a graph of data to compare 	<ul style="list-style-type: none"> • Database, • data, • field, • record, • sort, • order • graph, • chart, • axis, • compare, • filter

Spring 2- Spreadsheets

How can we use formula to answer questions?

This unit introduces the learners to spreadsheets. They will be supported in organising data into columns and rows to create their own data set. Learners 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. Learners will be taught how to apply formulas that include a range of cells, and apply formulas to multiple cells by duplicating them. Learners will use spreadsheets to plan an event and answer questions. Finally, learners will create charts, and evaluate their results in comparison to questions asked.

- To create a data set in a spreadsheet
- To build a data set in a spreadsheet
- To explain that formulas can be used to produce calculated data
- To apply formulas to data
- To create a spreadsheet to plan an event
- To choose suitable ways to present data

- I can collect data and enter it into a spreadsheet
- I can choose and apply formatting
- I can construct calculation formulas
- I can use sum and average formulas
- I can create a formula which includes a range of cells
- I can use a spreadsheet to answer questions
- I can produce a chart to show the answer to a question

- 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



Computing Progression Document

Creating Media Summer 1 & 2 CYCLE A

Year	Knowledge	Skills	Vocab
EYFS			
Year 1	<p>Summer 1 - Digital painting How can I use a computer / iPad to create art? Learners 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.</p> <ul style="list-style-type: none"> • To recognise computers can be used to create art • To use shape and line tools when precision is needed • I can make marks / lines on a screen and explain which tools I used • To recognise a tool can be adjusted to suit my needs • To decide when it's appropriate to use each tool • To combine a range of tools to create a piece of artwork • To consider the impact of choices made 	<ul style="list-style-type: none"> • To use a range of paint colours • Use lines where needed • To use digital paint brushes, pens and tools to create shapes • To an eraser to remove parts that are unwanted • To use the fill tool to colour an enclosed area • To use the undo button to correct a mistake • Compare painting using a computer to painting using brushes 	<ul style="list-style-type: none"> • paint program, • paintbrush, • erase, • fill, tool • undo, • shape tools, • line tool, • fill tool, • undo tool, • colour, • brush style and size • pictures, • painting, • computers
Year 1 & 2	<p>Summer 1 & 2 - Digital writing How can I display and edit my learning? Learners 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> <ul style="list-style-type: none"> • To use a computer to write • To add and remove text on a computer • To identify that the look of text can be changed on a computer • To make careful choices when changing text • To explain why I used the tools that I chose • To compare typing on a computer to writing on paper 	<ul style="list-style-type: none"> • I can open a word processor • I can identify and find keys on a keyboard • I can enter text into a computer • I can use letter, number and space keys • I can use backspace to remove text • I can type capital letters • I can identify the toolbar and use bold, italic and underline • I can click and drag text to change the font • I can use the undo button • I can make changes to text on a computer 	<ul style="list-style-type: none"> • word processor, • keyboard, • keys, • letters, • type, Number • space, text • toolbar, cursor • bold underline • italic, format • mouse, typing writing • select, compare • font, • undo, • redo, • backspace • capital letters,

<p>Year 2</p>	<p>Summer 2 - Digital photography How can I take a great photograph? Learners will learn to recognise that different devices can be used to capture photographs and will gain experience capturing, editing, and improving photos. Finally, they will use this knowledge to recognise that images they see may not be real.</p> <ul style="list-style-type: none"> To use a digital device to take a photograph To make choices when taking a photograph To describe what makes a good photograph To decide how photographs can be improved To use tools to change an image To recognise that photos can be changed 	<ul style="list-style-type: none"> I can explain the process of taking a good photograph I can take photos in both landscape & portrait format I can identify what is wrong with a photograph I can improve a photograph by retaking it I can explore the effect that light has on a photo I can recognise that images can be changed I can use a tool to achieve a desired effect I can identify which photos are real and which have been changed 	<ul style="list-style-type: none"> compose, image flash, focus, editing, filter, format, framing, lighting capture <p>device, camera, photograph, , digital, landscape, portrait, framing, subject light sources background</p>
<p>Year 3</p>	<p>Summer 1 - Stop-frame animation How can we create a film using still images? Learners 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.</p> <ul style="list-style-type: none"> To explain that animation is a sequence of drawings or photographs To relate animated movement with a sequence of images To plan an animation To identify the need to work consistently and carefully To review and improve an animation To evaluate the impact of adding other media to an animation 	<ul style="list-style-type: none"> I can create an effective flip book—style animation using sticky notes I can explain how an animation/flip book works I can explain why little changes are needed for each frame I can create an effective stop-frame animation I can break down a story into settings, characters and events I can create a storyboard I can use onion skinning to help me make small changes between frames I can review a sequence of frames to check my work I can add other media to my animation 	<ul style="list-style-type: none"> animation, flip book, stopframe, frame, sequence, image, setting, character, events, onion skinning, media, import, transition <p>consistency, evaluation, delete, photograph</p>
<p>Year 4</p>	<p>Summer 2 - Audio Production How can we share our ideas over a podcast Learners 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.</p> <ul style="list-style-type: none"> To explain that audio recordings can be edited To identify that sound can be recorded To recognise the different parts of creating a podcast project To apply audio editing skills independently To combine audio to enhance my podcast project To evaluate the effective use of audio 	<ul style="list-style-type: none"> I can identify the input and output devices used to record and play sound I can use a computer to record audio I can explain that the person who records the sound can say who is allowed to use it I can re-record my voice to improve my recording I can inspect the soundwave view to know where to trim my recording I can explain how sounds can be combined to make a podcast more engaging I can plan appropriate content for a podcast I can arrange multiple sounds to create the effect I want I can listen to an audio recording to identify its strengths 	<ul style="list-style-type: none"> audio, microphone, speaker, headphones, input device, output device, sound, podcast, edit, trim, align, layer, import, record, playback, <p>selection, load, save, export, MP3, Evaluate, feedback</p>

<p>Year 5</p>	<p>Summer 2 - Video Production How can we create a movie scene? This unit gives learners the opportunity to learn how to create short videos in 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. Active learning is encouraged through guided questions and by working in small groups to investigate the use of devices and software. Learners are guided with step-by-step support to take their idea from conception to completion. At the teacher's discretion, the use of green screen can be incorporated into this unit.</p> <ul style="list-style-type: none"> • To explain the features of video as a visual media format • To recognise that filming techniques can be used to create different effects. • To combine filming techniques for a given purpose • To recognise the need to regularly review & reflect on a video project. • To identify videos can be improved through & reshooting or editing. 	<ul style="list-style-type: none"> • To use different camera angles • To use pan, tilt and zoom. • To use the green / blue screen for recording to ensure video can be used in iMovie. • To determine what scenes will convey your idea. • To decide what changes, I will make when editing. • To use split, trim and crop to edit a video. • To voice over video to convey a story • To choose to reshoot a scene or improve later through editing 	<ul style="list-style-type: none"> • Video, • audio, • camera, • panning, • close up • green screen • import, • split, • trim, • clip, • edit, • reshoot
<p>Year 6</p>	<p>Summer 2 - Web Page Creation How can we present information for the public? This unit introduces learners to the creation of websites for a chosen purpose. Learners 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 and fair use of media, the aesthetics of the site, and navigation paths.</p> <ul style="list-style-type: none"> • To review an existing website and consider its structure • To plan the features of a web page • To consider the ownership and use of images (copyright) • To recognise the need to preview pages • To outline the need for a navigation path • To recognise the implications of linking to content owned by other people 	<ul style="list-style-type: none"> • I can discuss the different types of media and features used on websites • I can draw a web page layout that suits my purpose • I can say why I should use copyright-free images and be able to find them • I can add content to, preview and evaluate my own web page • I can explain and describe navigation paths • I can make multiple pages and link them using hyperlinks 	<ul style="list-style-type: none"> • website, • external link • navigation, • breadcrumb trail, • Hypertext Markup Language (HTML), • logo, • layout, • header, • media, • purpose, • fair use, • media • webpage • embed. • browser <ul style="list-style-type: none"> • copyright • homepage • preview, • evaluate, • device, • Google Sites, • hyperlink, • subpage, • evaluate, • implication,



Computing Progression Document

Creating Media Summer 1 & 2 CYCLE B

Year	Knowledge	Skills	Vocab
EYFS			
Year 1	<p>Summer 2 - Grouping data How can we group, count and label objects? This unit introduces pupils to data and information. They will begin by using labels to put objects into groups, and labelling these groups. Pupils will demonstrate that they can count a small number of objects, before and after the objects are grouped. They will then begin to demonstrate their ability to sort objects into different groups, based on the properties they choose. Finally, pupils will use their ability to sort objects into different groups to answer questions about data.</p> <ul style="list-style-type: none"> To identify some attributes of an object To collect simple data To identify that objects can be counted To describe the properties of an object To choose an attribute to group objects by To recognise that information can be presented in different ways 	<ul style="list-style-type: none"> Take photos on the iPad's and use Seesaw to label the photos Use Seesaw to match and group objects into groups Group and count real-life objects and take photos using Seesaw Describe properties of grouped objects Use Seesaw to create a tally chart Answer questions about grouped objects 	<ul style="list-style-type: none"> object, label, group, search, image, property, colour, size, shape, value, data set, more, less, most, fewest, least, the same
Year 1 & 2	<p>Summer 2 - Pictograms This unit introduces the learners to the term 'data'. Learners will begin to understand what data means and how this 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> <ul style="list-style-type: none"> To recognise we can count & compare objects using tally charts To recognise that objects can be represented as pictures To create a pictogram To select objects by attribute and make comparisons To recognise that people can be described by attributes To explain that we can present information using a computer To compare typing on a computer to writing on paper 	<ul style="list-style-type: none"> I can record data in a tally chart on Seesaw with a total I can organise data into a pictogram I can use pictograms to answer simple questions I can answer 'more than'/'less than' and 'most/least' questions about an attribute I can create a pictogram and draw conclusions from it 	<ul style="list-style-type: none"> group, less than most, least, common, popular, organise, data, object, objects, count, explain, attribute more than same, tally chart, votes, total, pictogram data, compare, enter different, conclusion block diagram, sharing

<p>Year 2</p>	<p>Summer 2 - Digital Music How can you create music using IT? Learners will explore how music can make them think and feel. They will make patterns and use those patterns to make music with both percussion instruments and digital tools. They will also create different rhythms and tunes, using the movement of animals for inspiration. Finally, learners will share their creations and compare creating music digitally and non-digitally.</p> <ul style="list-style-type: none"> To say how music can make us feel To identify that there are patterns in music To experiment with sound using a computer To use a computer to create a musical pattern To create music for a purpose To review and refine our computer work 	<ul style="list-style-type: none"> I can identify simple differences in pieces of music I can describe music using adjectives I can use 2Explore to explore sounds I can create a rhythm pattern using 2Beat I can use a computer to experiment with pitch I can use 2Sequence to refine my musical pattern on a computer I can add a sequence of notes to my rhythm and review my music 	<ul style="list-style-type: none"> instrument, quiet, loud, feelings, emotions, pattern, rhythm, pulse, pitch tempo, rhythm, notes, create, emotion, beat, music open edit
<p>Year 3</p>	<p>Summer 2 - Desktop publishing Why are desktop publishing skills important? Learners will become familiar with the terms 'text' and 'images' and emojis and understand that they can be used to communicate messages offline and online. They will use desktop publishing software and consider careful choices of font size, colour and type to edit and improve premade 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> <ul style="list-style-type: none"> To recognise how text and images convey information To recognise that text and layout can be edited To choose appropriate page settings To add content to a desktop publishing publication To consider how different layouts can suit different purposes To consider the benefits of desktop publishing 	<ul style="list-style-type: none"> I can explain the difference between text and images I can recognise that text and images can communicate messages clearly I can change font style, size, and colours for a given purpose I can edit text I can explain that text can be changed to communicate more clearly I can create a template for a particular purpose I can choose the best locations for my content I can paste text and images to create a magazine cover I can choose a suitable layout for a given purpose I can compare work made on desktop publishing to work created by hand 	<ul style="list-style-type: none"> text, images, advantages, disadvantages, communicate, font, style, landscape, portrait, orientation template, layout, content, desktop publishing, copy, paste, purpose, benefits placeholder

<p>Year 4 Summer 2</p>	<p>Summer 2 - Photo Editing How can we change an image and make it better? Learners 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.</p> <ul style="list-style-type: none"> To explain that the composition of digital images can be changed To explain that colours can be changed in digital images To explain how cloning can be used in photo editing To explain that images can be combined To combine images for a purpose To evaluate how changes can improve an image 	<ul style="list-style-type: none"> I can improve an image by rotating it I can explain why I might crop an image I can use photo editing software to crop an image I understand that editing images can be unethical I can experiment with different colour effects I can add to the composition of an image by cloning I can remove parts of an image using cloning I can experiment with tools to select and copy part of an image I can choose suitable images for my project I can create a project that is a combination of other images I can review images against a given criteria 	<ul style="list-style-type: none"> saturation image, edit, digital, crop, rotate, undo, save, image effects, colours, hue, sepia, vignette, adjustments, retouch, font, 	<ul style="list-style-type: none"> select, combine, made up, real, composite, cut, copy, paste, alter, background foreground, zoom, undo, clone,
<p>Year 4 Summer 2</p>	<p>Summer 2 - Data Logging How can we use devices to log data and answer questions? 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. Pupils 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</p> <ul style="list-style-type: none"> To explain that data gathered over time can be used to answer questions To use a digital device to collect data automatically To explain that a data logger collects 'data points' from sensors over time To recognise how a computer can help us analyse data To identify the data needed to answer questions To use data from sensors to answer questions 	<ul style="list-style-type: none"> Children will be introduced to the Microbit Learners consider what data can be collected and how I can choose a data set to answer a given question I can explain what data can be collected using sensors I can use data from a sensor to answer a given question I can talk about the data that I have captured I can explain that there are different ways to view data I can propose a question that can be answered using logged data I can plan how to collect data using a Microbit I can interpret data that has been collected using a Microbit I can draw conclusions from the data that I have collected I can explain the benefits of using a Microbit 	<ul style="list-style-type: none"> data, table, layout, input device, sensor, logger, logging, data point interval, analyse, dataset, import, export, logged, collection, review, conclusion 	

<p>Year 5</p>	<p>Summer 2 - Programming - Selection in Quizes How can we change the algorithms to create a game? In this unit, pupils create a complex maze game and a quiz to develop their knowledge of selection by revisiting how conditions can be used in programs 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 using the Scratch programming.</p> <ul style="list-style-type: none"> recall how conditions are used in selection. Identify the condition and outcomes 'if...then...else...' Design the flow of programme which contains 'if...then...else' use selection in an infinite loop to check a condition test the game / quiz checking the algorithm. share game and quiz with others. 	<ul style="list-style-type: none"> Create a background with maze borders. Create a sprite who will move around the maze using the arrows. Code the sprite to go back to the start when touching the border colours. Create multiple levels which switch when the sprite reaches the end of the level. Add further elements such as a timer, score, messages. Create a maths quiz game with conditions and variables such as question, answer. Use if then, else to create outputs. Add a timer and score counter to the game 	<ul style="list-style-type: none"> algorithm Selection, condition, true, false, count-controlled loop conditional statement, program, debug
<p>Year 6</p>	<p>Project 6 - Sensing movement How can we control a spite using algorithms? This unit is the final KS2 programming unit and brings together elements of all the four programming constructs: sequence from Year 3, repetition from Year 4, selection from Year 5, and variables (introduced in Year 6 - 'Programming A'). It offers pupils the opportunity to use all of these constructs in a different, but still familiar environment, while also utilising a physical device — the micro:bit. The unit begins with a simple program for pupils to build in and test within the new programming environment, before transferring it to their micro:bit. Pupils then take on three new projects in Lessons 2, 3, and 4, with each lesson adding more depth.</p> <ul style="list-style-type: none"> To create a program to run on a controllable device To explain that selection can control the flow of a program To update a variable with a user input To use an conditional statement to compare a variable to a value To design a project that uses inputs and outputs on a controllable device To develop a program to use inputs and outputs on a controllable device 	<ul style="list-style-type: none"> I can apply my knowledge of programming to a new environment I can transfer my program to a controllable device I can use a variable in an if, then, else statement to select the flow of a program I can use a condition to change a variable I can experiment with different physical inputs I can use an operand (e.g. <=>) in an if, then statement I can design the algorithm for my project I can code a Microbit create a magic 8 ball (Lessons 1/2 yes/no/maybe) I can code a Microbit as a compass I can code a Microbit to act as a step counter 	<ul style="list-style-type: none"> Micro:bit, MakeCode, input, process, output, flashing, USB, trace, selection, condition, if then else, variable, random, debug. sensing, accelerometer, value, compass, direction, navigation, design, task, algorithm, step counter, plan, code, test create,