



Computing Curriculum

EYFS to Year 6

Overarching Principles

Computing

Subject Vision

‘Technology will not replace great teachers, but technology in the hands of great teachers can be transformational.’ George Couros

At Abingdon school, we believe that every child should have the right to a curriculum that champions excellence; supporting pupils in achieving to the very best of their abilities. We understand the immense value technology plays not only in supporting the Computing and whole school curriculum but overall in the day-to-day life of our school. We believe that technology can provide: enhanced collaborative learning opportunities; better engagement of pupils; easier access to rich content; support for conceptual understanding of new concepts and can support the needs of all our pupils.

As a school we have chosen the Purple Mash Computing Scheme of Work from reception to year 6. Both schemes of work support our teachers in delivering focussed and engaging lessons which help to raise standards and allow all pupils to achieve to their full potential. This includes children of all abilities, social and cultural backgrounds, those with disabilities, EAL speakers and SEND statement and non-statemented.

Subject Intent

- ❖ **To use Computational thinking**
- ❖ **To think creatively**
- ❖ **To solve problems involving algorithms and networks**

Teaching and Learning Overview

Abingdon Classroom: This is how we do it....		
Behaviour for learning		
Positive relationships • Mutual respect • Emotional support	Effective learning environment • Working walls • Celebration of learning	Engaging and relevant curriculum • Inclusive • Diverse
Effective Teaching and Learning		
Builds on and activates prior knowledge	Questioning	Talk
Vocabulary	Feedback	Sequenced steps to enable new learning
Modelling	Identifying and addressing misconceptions	Assessment for and of learning
Retrieval practice - long term memory	Adapted learning for the needs of individual pupils	Resources – to support, scaffold, challenge

Key Subject Specific Teaching Approaches

- ❖ Answering and asking questions
- ❖ Working collaboratively
- ❖ Educational visits
- ❖ Investigations
- ❖ Create projects

EYFS

Across nursery and reception, Computing knowledge and skills are explicitly taught as foundations for the KS1 National Curriculum. The focus is primarily to develop the computing knowledge within the overarching topics using these units of learning as the vehicles of delivery.

Term	Nursery theme (2-3 yr olds)	Nursery Theme (3-4 yr olds)	Links to KS1 Computing
AUT 1	To know that some equipment needs to be turned on and off. Follow instructions as part of practical activities and games.	Understand how to operate simple equipment, e.g. turns on CD player, uses a remote control, can navigate touch-capable technology with support.	Computer Science ELG- Communication and language.
AUT 2	Shows an interest in technological toys with knobs or pulleys.	To follow and give simple instructions. Experiment with programming a BeeBot/Blue-Bot developing familiarity with algorithms.	Computer science ELG- Communication and language. Maths: Shape, space and measure.
SPR 1	Use and pretend to use technology purposefully.	Know the different parts of a computer: mouse, screen, keyboard. Begin to use simple programmes to support learning.	Information technology ELG- Communication and language: Listening and attention/understanding/speaking
SPR 2	Use and pretend to use technology purposefully.	Listen to a range of music.	Information technology
SUM 1	Name and recognise uncomfortable, embarrassed and upset emotions.	With support, begin to recognise common uses of information technology beyond school.	Digital literacy ELG- Understanding the world
SUM 2	Name and recognise uncomfortable, embarrassed and upset emotions.	To use technology safely and respectfully. Begin to understand that information can be retrieved from digital devices and the internet.	Digital literacy ELG- Understanding the world

Term	Reception Theme	Links to KS1 Computing	Ideas
AUT 1	Awesome Autumn (3 lessons) <i>ELG – Creating with materials</i> <i>ELG – Fine motor skills</i> <i>ELG- Building relationships</i> <i>ELG- Gross motor skills</i> <i>ELG- Managing self</i> Self-image & identity	Coding and Computational thinking Digital Literacy (Education for a connected world)	Use Barefoot lessons/resources Digital literacy See Computing folder 25-26
AUT 2	Winter Warmers (1 lesson)	Coding and Computational thinking <u>Information Technology</u> Independently explore how things work Start to use a mouse and a keyboard effectively developing basic skills, including typing, moving and clicking and using an online paint tool.	Use Barefoot lessons/resources Digital literacy See Computing folder 25-26 Use mice in role play areas with laptops. Mouse control activities https://mouse-practice.com/games/apple-catch/&play https://frontend.letsgolearn.com/practice/bubbles Extension dot to dot activities for accuracy https://www.primarygames.com/seasons/summer/games/summerdottodot/
SPR 1	Busy Bodies (1 lesson)	Coding and Computational thinking <u>Information Technology</u> Independently explore how things work Start to use a mouse and a keyboard effectively developing basic skills, including typing, moving and clicking and using an online paint tool.	Use Barefoot lessons/resources Digital literacy See Computing folder 25-26 Use mice in role play areas with laptops. Mouse control activities https://mouse-practice.com/games/apple-catch/&play https://frontend.letsgolearn.com/practice/bubbles Extension dot to dot activities for accuracy https://www.primarygames.com/seasons/summer/games/summerdottodot/
SPR 2	Springtime (1 lesson)	Coding and Computational thinking <u>Information Technology</u> Children play with and investigate mechanical equipment (wind-up toys, pulleys, sets of cogs with pegs and board). Use technology purposefully to create content such as a video recording, stories, and/or draw a picture on screen (ipads, cameras, 2Simple).	Use Barefoot lessons/resources Digital literacy See Computing folder 25-26 Discuss the difference between a photo and video and talk about the different devices that both a photo and video can be taken on. Children can use the different technology to take photos and videos of different objects or activities for their work. Try and let the children choose which device to use and explain why they chose it, e.g. digital camera, tablet, laptop, camcorder, mobile phone, etc.

SUM 1	Boats ahoy! (2 lessons)	Coding and Computational thinking	Use Barefoot lessons/resources Digital literacy See Computing folder 25-26
SUM 2	Understanding the world	<u>Computer Science</u> Understanding how to debug instructions, with the help of an adult, when things go wrong.	Use Barefoot lessons/resources Digital literacy See Computing folder 25-26

Long Term map

	Autumn	Spring	Summer
Year 1	Exploring Purple Mash (Unit 1.1 in PM) To know how to safely log on and become familiar with Purple mash and explore the icons and types of resources available.	Unplugged activities	1.3 Programming (A) programming a robot To know how to explore using individual commands, both with other learners and as part of a computer program. They will identify what each command for the floor robot does and use that knowledge to start predicting the outcome of programs.
	Pictograms (1.3) To know that data can be represented in picture format and record the results of an experiment.	Maze Explorers (1.5) To know the functionality of the direction keys, how to create and debug a set of instructions (algorithm) and how to use the additional direction keys as part of an algorithm.	Animated stories (1.6) To know how to add animation, backgrounds and sound (including voice recording or music clips created by chdn) to a story. They will also know how to share their ebook to a class display.
Year 2	2.1 Computing systems and networks - IT around us To know how 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.	Coding 2.1 **Crash course ** To know what coding is and that an algorithm is related to giving instructions. To know that coding involves giving instructions to complete a task. To know how to make a program that follows their algorithm.	2.3 Programming (A) robot algorithms To know instructions in sequences and the use of logical reasoning are used 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.
	Making music 2.7 To know how to make music digitally using 2sequence as well as edit, combine and refine sounds and composed music. Children will also know how to upload a sound and understand that music can be used to express feelings and create tunes that depict feelings.	2.3 Spreadsheets To know what tasks a spreadsheet program can be used for. To know how to enter data into spreadsheet cells and use the totalling tools. To use a spreadsheet for money calculations, use 2calculate tool to check calculations and collect data and produce a graph.	Creating pictures 2.6 To know the functions of 2paint a picture and learn and recreate the impressionist style of art. They will recreate pointillist art and look at the work of various pointillist artists. The chdn will learn the art of various artists and recreate the styles used using a template.
Year 3	3.1 Computing systems & Networks To know that digital devices, with an initial focus on inputs, processes, and outputs.	Coding (3.1) To know what a flow chart is and how they are used in computer programming. To know that there	Email (3.5) To know about different methods of communication. To know how to open and respond to an email using and address book. To know

	To know how to compare digital and non-digital devices. To be introduced to computer networks, including devices that make up a network's infrastructure, such as wireless access points and switches. To discover the benefits of connecting devices in a network.	are different types of timers and select the right type for the purpose. To know how to use the repeat command and understand the importance of nesting and be able to design and create an interactive scene.	how to use email safely and add an attachment to an email and explore a simulated email scenario.
	Touch Typing (3.4) To know the terminology used for typing. Understand the correct way to sit at a keyboard and how to use the home, top and bottom row keys. To practise how to type with the left and right hand.	Spreadsheets (3.3) To know how to use 2calculate to collect data and produce a variety of graphs. To know how to use the advanced mode to learn about cell references. To know that the formula wizard and bar to write formulae. To know how to use the tools to explore number ad create a computational model using a spreadsheet.	Branching databases (3.6) To know how to sort objects using just 'yes' or 'no' questions. To know how to complete a branching database using 2Queestion. To know how to create a branching database of the children's choice.
	4.1 Computing Systems and Networks- The Internet To know and appreciate the internet as a network of networks which need to be kept secure. Children 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 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.	Coding (4.1) To begin to know what selection in computer programming is. To know how an IF statement works and use co ordinates in computer programming. To know what the 'repeat until' command is and how an IF/ELSE statement works. To know what a variable is in programming and use a number variable and create a playable game.	Writing for audiences (4.4) To know how font size and style can affect the impact of a text. To use a simulated scenario to produce a news report. To know how to use a simulated scenario to write for a community campaign.
Year 4	Animation 4.6 To know what makes a good, animated film or cartoon. T know how animations are created by hand and to find out how animation can be created in a similar way using the computer. To know about onion skinning in animation and add backgrounds and sounds to animations. To be introduced to stop motion animation and share animation on the class display board.	Micro: bits (4.11) To know how sensor inputs from the accelerometer can be used to detect movement, such as when a stap is taken. To know how variables can be used to keep track of things in a program and how inputs, outputs and computer code work together to make control systems. To know what logic is and how it can be used to make different outputs happen according to different inputs. To know how to make a control system and a game.	Logo (4.5) To know the structure of the coding language of logo and how to input simple instructions in logo. To know how to use 2Logo to create letter shapes and use the repeat function in logo to create shapes and build procedures.

Year 5	5.1 Computing Systems and Networks - Systems and sensing To know how computer systems and how information is transferred between systems and devices. Children 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.	Coding (5.1) To know how to simplify code to create a playable game. To know what a simulation is and program that simulation using 2Code. To know what decomposition and abstraction are in computer science. To know how to take a real-life situation, decompose it and think about the level of abstraction. To begin to know how to use friction in code and understand what a function is and how functions work in code. To understand what the different variable types are and how they are used differently and how to create a string. To know what a concatenation is and how it works.	External devices (5.9) To know how a device can be programmed to be used as a game controller. To know how to explore the functions available for the Purple chip and appraise their uses. To know how to create a simple quiz program that can be answered using an external device and create a program in which an external device can be used to monitor real world conditions.
	Game creator (5.5) To know how to plan a game and design and create the game environment. To now how to design and create the game quest and finish and share the game to self and peer evaluate.	Spreadsheets (5.3) To know how to use formulae within a spreadsheet to convert measurements of length and distance. To know how to use a spreadsheet to model real-life problems and the spreadsheet tools to investigate probability. To know how to use the count tool to answer hypotheses about common letters in use.	3D Modelling (5.6) To know how to use 2Design and Make and the skills of computer aided design. To know how to explore the effect of moving points when designing. To know how to design a 3D model to fit certain criteria and refine and print a model.
	5.1 Computing Systems and Networks- Communication and collaboration To know how to explore how data is transferred over the internet. Children will initially focus on addressing, before they move on to the makeup and structure of data packets. They will 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.	Coding (6.1) To know how to design a playable game with a timer and a score. To know how to plan and use the selection and variables and understand how the launch command works. To know how to use functions and understand why they are useful. To understand how functions are created and called and use flowcharts to create and debug code. To know how to create a simulation of a room in which devices can be controlled and input can be used in the program. To know how 2Code can be used to make a text adventure game.	6.6 Programming (B) Sensing and Movement (Micro: Bits) To know how to use a simple program 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.

Text Adventures (6.5)

To know what a text adventure is and use 2Connect to plan a story adventure. To know how to make a story based adventure using 2Create a story. To know how to read and understand given code for a text adventure game and debug and improve a text adventure game.

6.6 Programming (B) Sensing and Movement (Micro: Bits)

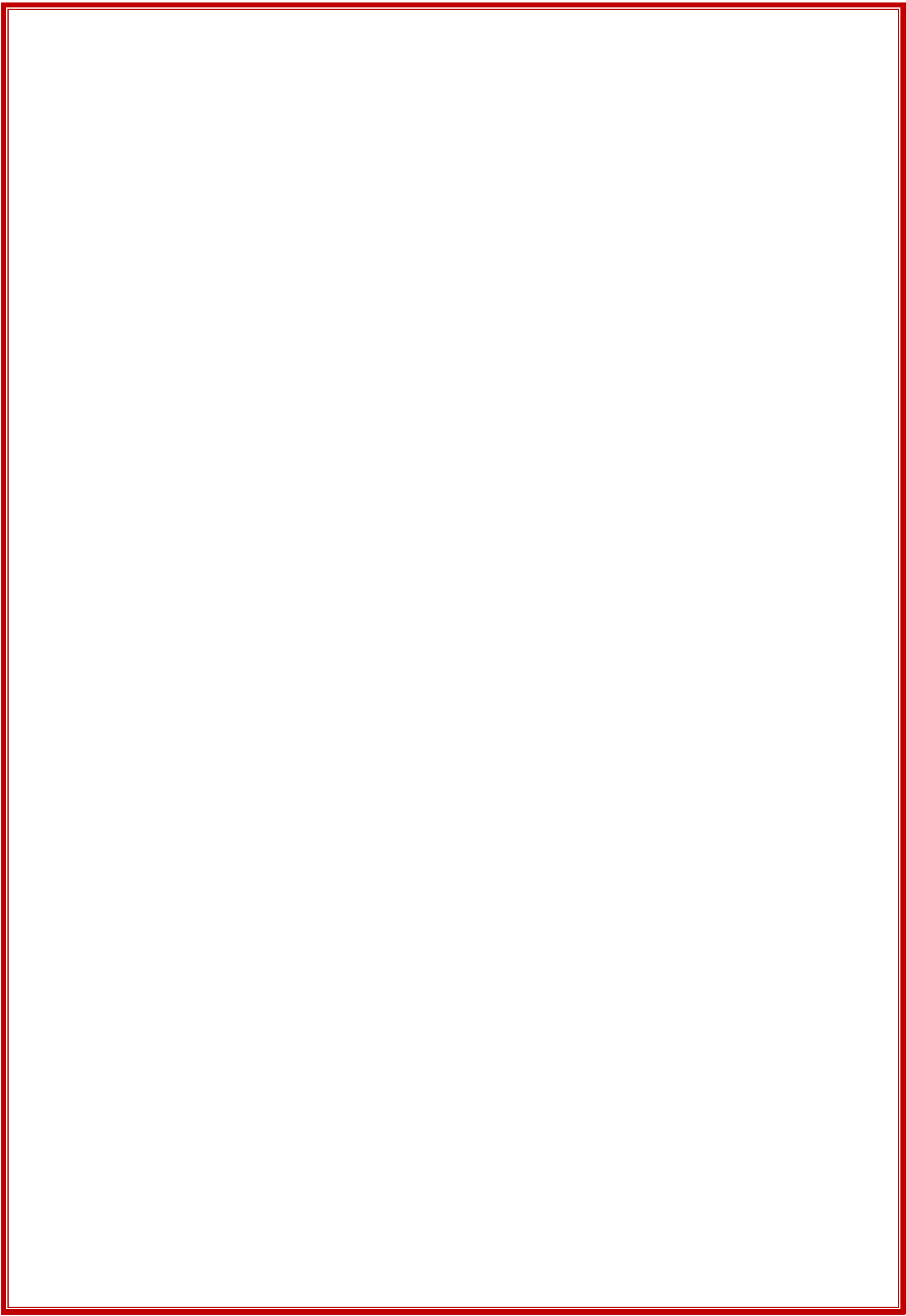
To know how to use a simple program to build in and test within the new programming environment, before transferring it to their micro:bit. Pupils then take on three new projects in Lessons 2, 3, and 4, with each lesson adding more depth.

Python in pieces (Transition project 6.10)

To know how to create a program in Python in Pieces and write Python code that outputs text. To know how to write Python code that performs calculations and learn some ways to program repetition in Python. To know how to use Python to program an animation and use a 'while true' loop to make code run repeatedly.

Key Questions/End Points

	Autumn	Spring	Summer
Year 1	Exploring Purple Mash What is a password and why should we keep it safe?	Unplugged Activities Do I need device to learn about computers?	Programming (A) Robot algorithms What is an algorithm?
	Pictograms What is data and I can I show it as a picture?	Maze Explorers How do I undo a mistake on 2Go?	Animated Stories What is an animated story?
Year 2	IT around us What is IT and where can it be found?	Coding Why is an algorithm useful in coding?	Programming (A) Robot algorithms How do I debug a program?
	Making Music How can I change how my music sounds?	Spreadsheets How can a spreadsheet help you?	Creating Pictures What are the main features of Pointillism?
Year 3	Connecting Computers How do you connect computers?	Coding What does repeat mean in computer programming?	Email What is an email?
	Touch Typing Why should I type certain keys with certain fingers?	Spreadsheets Explain how you would collect data to find out children's favourite school subjects. What sort of graph would you create?	Branching databases What is a database?
Year 4	The internet What is the difference between the internet and the world wide web?	Coding Explain the stages of the design, code, test, debug coding process.	Writing for different audiences Why should I change the font when I am writing?
	Animation What is meant by onion skinning?	Micro: Bits How can sensors, code and outputs work together?	Logo What is logo?
Year 5	Systems and Searching How does a search engine work?	Coding What does decomposition mean?	External devices What output can be sent to the external device?
	Game Creator What makes a good game?	Spreadsheets How would you add a formula so that the cell shows the product of two other cells?	3D Modelling What are the different view of an object available in 2Design and Make?
Year 6	Communication and collaboration How is data shared and transferred?	Sensing and movement (Micro: Bits) What can I do with a Micro: Bit?	Coding What is a function in coding?
	Blogging What is a blog?		Python in pieces What is a 'while true loop'?
	Text Adventures What is a text-based adventure?		



Progression of Core Knowledge

	Autumn	Spring	Summer
Year 1	Know how to log in safely. Know how to find saved work in the work area. Know how to search Purple Mash for resources. Know how to open, save and print. Know that it is important to log out.	Know that Computing can be taught technology free.	Know how to predict the outcome of a command on a device. Know how to follow an instruction. Know how to combine 'forwards' and 'backwards' commands to make a sequence Know how to combine four direction commands to make sequences.
	Know that data can be represented in picture format. Know how to contribute to a class pictogram. Know how to use a pictogram to record the results of an experiment.	Know the functionality of the direction keys. Know how to create and debug a set of instructions. Know how to change and extend the algorithm list.	Know how to add animation to a story. Know how to add sound to a story, including voice recording and music the children have composed. Begin to know how to work on a more complex story, including adding backgrounds and copying and pasting pages.
Year 2	Know how to recognise the uses and features of information technology. Know how to identify the uses of information technology in the school. Know how information technology helps us. Know how to use information technology safely. Know that choices are made when using IT.	Know what coding is. Know how to use code blocks to create code. Know how to plan an algorithm in which objects collide. Know how to create a program that uses a timer after command. Know how to create a program that includes different object types.	Know what happens when we change the order of instructions. Know how logical reasoning to predict the outcome of a program. Know how to explain that programming projects can have code and artwork. Know how to design an algorithm. Know how to create and debug a program that I have written.
	Know how to make music digitally using 2Sequence. Know how to explore, edit and combine sounds. Know how to edit and refine composed music. Know how music can be used to express feelings and create tunes which depict feelings. Know how to upload a sound from a bank of sounds into the sounds section.	Know the sorts of tasks that a spreadsheet program could be used for. Know how to enter data into spreadsheet cells. Know how to use 2Calculate image tools. Know how to use the totalling tools. Know how to use a spreadsheet for money calculations.	Know the functions of the 2Paint a Picture tool. Learn about and know how to recreate the impressionist style of art (Monet, Degas, Renoir). Know how to recreate Pointillist art and look at the work of Pointillist artists. Learn about the work of Piet Mondrian and recreate the style using the lines template. Know about the work of William Morris and recreate the style using the patterns template.

Year 3	Know how to identify input and output devices. Know how to recognise how digital devices can change the way we work. Know how a computer network can be used to share information. Explore how digital devices can be connected. Recognise the physical components of a network.	Know what a flowchart is and how it used in computer programming. Know that there are different types of timers and select the right type for purpose. Know how to use the repeat command. Know the importance of nesting. Know how to design and create an interactive scene.	Know how to think about different methods of communication. Know how to open and respond to an email using an address book. Know how to how to use email safely. Know how to add an attachment to an email. To explore a simulated email scenario.
	Know typing terminology. Know the correct way to sit at the keyboard. Know how to use the home, top and bottom row keys. Know how to practise tying with the left and right hand.	Know how to use 2Calculate to collect data and produce a variety of graphs. Know how to use the advanced mode of 2Calculate to learn about cell references. Know how to use the formulae wizard and formulae bar to write formulae. Know the tools within 2Calculate to explore number. Know how to create a computational model using a spreadsheet.	Know how to sort objects using just 'yes' or 'no' questions. Know how to complete a branching database using 2Question. Know to create a branching database of the children's choice
Year 4	Know how networks physically connect to other networks. Know how networked devices make up the internet. Know how websites can be shared via the World Wide Web (WWW). Know how content can be added and accessed on the World Wide Web (WWW). Know how to recognise the content of the WWW is created by people.	Know how to understand the 'repeat until' command. Know how to understand how an IF/ELSE statement works. Know how to understand what a variable is in programming. Know how to use a number variable. Know how to create a playable game.	Know how to explore how font size and style can affect the impact of a text. Know how to use a simulated scenario to produce a news report. Know how to use a simulated scenario to write for a community campaign.

	Know how animations are created by hand. Know how to find out how animation can be created in a similar way using the computer. Know how to learn about onion skinning in animation. Know how to add backgrounds and sounds to animations. Know how to be introduced to 'stop motion' animation	Know how to understand how sensor inputs from the accelerometer can be used to detect movement, such as when a step is taken. Know how to understand how variables can be used to keep track of things in a program. Know how to understand how inputs, outputs and computer code work together to make control systems. Know how to understand what logic is and how it can be used to make different outputs happen according to different inputs. Know how to be able to make a control system or game.	Know how to learn the structure of the coding language of Logo. Know how to input simple instructions in Logo. Know how to use 2Logo to create letter shapes. Know how to use the Repeat function in Logo to create shapes. Know how to use and build procedures in Logo.
Year 5	Know that computers can be connected to form systems. Know how to identify how to use a search engine Know how to describe how search engines select results Know how to explain how search results are ranked Know how to recognise why the order of results is important, and to whom	Know what decomposition and abstraction are in computer science. Know and understand how to use friction in code. To begin to understand what a function is and how functions work in code. Know and understand what the different variable types are and how they are used differently. Know and understand how to create a string. Know and understand what concatenation is and how it works.	Know and understand how a device can be programmed to be used as a game controller. Know how to explore the functions available for the Purple Chip and appraise their uses. Know how to create a simple quiz program that can be answered using an external device. Know how to create a program in which an external device can be used to monitor real world conditions.
	Know how to plan a game. To design and create the game environment. Know how to design and create the game quest. Know how to finish and share the game. Know how to self and peer evaluate.	Know how to use formulae within a spreadsheet to convert measurements of length and distance. Know how to use a spreadsheet to model a real life problem. Know how to use spreadsheet tools to investigate probability. Know how to use the count tool to answer hypotheses about common letters in use.	To be introduced to 2Design and Make and the skills of computer aided design. Know how to explore the effect of moving points when designing. Know how to design a 3D Model to fit certain criteria. Know how to refine and print a model

Computing systems & Networks- Communication and collaboration

Know the importance of internet addresses.

Know how data is transferred across the internet.

Know how sharing information online can help people to work together.

Know how to evaluate different ways of working together online.

Blogging

Know how to identify the purpose of writing a blog.

Know how to identify the features of a successful blog.

Know how to plan the theme and content for a blog.

Know how to understand how to write a blog and a blog post.

Know and understand how to contribute to an existing blog.

Know and understand h

Know how to design a playable game with a timer and a score.

Know how to plan and use selection and variables.

Know how to understand how the launch command works.

Know how to use functions and understand why they are useful.

Know how to use flowcharts to create and debug code

Know how to design a project that uses inputs and outputs on a controllable device.

Know how to develop a program to use inputs and outputs on a controllable device.

Know how to use a conditional statement to compare a variable to a value.

Know how to find out what a text adventure is.

Know how to use 2Connect to plan a story adventure.

Know how to make a story-based adventure using 2Create a Story.

Know how to read and understand given code for a text adventure game.

Know how to debug and improve a text adventure game.

****This unit will be taught over 2 half terms****

Know how to create a program to run on a controllable device.

Know how to explain that selection can control the flow of a program.

Know how to update a variable with a user input.

Know how to create a program in Python in Pieces.

Know how to write Python code that outputs text.

Know how to write Python code that performs calculations.

Know how to learn some ways to program repetition in Python.

Know how to use Python to program an animation.

Know how to use a 'while true' loop to make code run repeatedly.

Key Vocabulary

Words in bold are the core vocabulary expectations for new arrivals.

	Autumn	Spring	Summer
Year 1	Avatar A digital picture to represent someone Password A series of letters, numbers and special characters that is entered after the username to access an online site. Log in Using a username and password to access a system. Log out Leaving a computer system. <u>Other vocabulary</u> Alert, icon, private, notification, My work area	Unplugged Activities on PM	Clear To remove any data in the device. Left Right A position which relates to something. For example, make the fish move left of the screen Program A set of instructions that tell a computer what to do. <u>Other vocabulary</u> Command, outcome, compare, sequence, instructions, predict
	Pictogram A diagram that uses pictures to represent data. Compare Looking at what is the same and what is different. Data A collection of information, used to help answer questions Recording results Writing down what you have found out. <u>Other vocabulary</u> Title, collect data	Algorithm A precise, step-by-step set of instructions used to solve a problem or achieve an objective. Command An action such as left command. Instruction Detailed information about how something should be done or operated. Direction The path that something travels. For example, a robot moving forwards, backwards or diagonal. <u>Other vocabulary</u> Undo, unit, route, left and right, challenge	Animation An object that moves on screen. E- book A book that can be read on the computer or on a tablet. Font The style of text used in a piece of writing on a computer or tablet. Edit Edit means to change something. For example, change some text to improve it. <u>Other vocabulary</u> Sound, sound effect, text, clip art gallery, background
Year 2	Information technology The study of systems for storing, retrieving and sending information. Computers An electronic device for storing and processing data. <u>Portable</u> To be easily carried or moved. <u>Other vocabulary</u> Laptop, pc, scanner, keyboard, pc	Algorithm A precise step by step set of instructions used to solve a problem or achieve an objective. Command A single instruction in 2Code. Bug A problem in a computer program that stops it working the way it was designed. Debug / Debugging Fixing code that has errors so that the code will run the way it was designed to. <u>Other Vocabulary</u>	Sequence A set of instructions or actions performed in a specific, ordered manner, where each instruction is executed one after the other. Prediction Estimating the future values Code A system of symbols or instructions written specific programming language that tells a computer how to perform a task. Route

Year 3			the path data packets take to travel from a source to a destination in a network. <u>Other vocabulary</u> Forwards, backwards, turn, left, right
	Beat A rhythmic unit in music. Compose To create a piece of music. Sound effect A sound other than speech or music. Tune Musical notes joined together to make a melody. <u>Other Vocabulary</u> Soundtrack, speed, tempo, volume,	Spreadsheet A computer program that represents information in a grid of rows and columns Cell An individual section of a spreadsheet grid. It contains data or calculations. Total In 2Calculate the total tool will calculate the total of all cells above, below or next to it dependent on which total tool used. Row Boxes running horizontally in a spreadsheet. <u>Other Vocabulary</u> Data, data table, equals, graph, drag, column, calculations	Pointillism Pointillism was a development of impressionism. It was invented mainly by George Seurat and Paul Signac. Pointillist paintings are created by using small dots in different colours to build up the whole picture. Colours are placed near each other rather than mixed. Palette Within computer graphics, this is the range of colours or shapes available to the user. Surrealism Explored the subconscious areas of the mind. The artwork often made little sense as it was usually trying to depict a dream or random thoughts. Impressionism The impressionist movement began in the 1860s and became most popular in the 1870s and 1880s. It differed from the common art of the time because it wasn't religious art, showing scenes from religious stories or specific events, but was just intended to capture a scene at a moment. The art gave an 'impression' of the scene. <u>Other Vocabulary</u> Fill, style, palette, art
	Wireless A computer network that makes use of radio frequency (RF) connections between the nodes in the network. Network A group of two or more computers or devices connected together so that they can share information and resources. Server	Action The way that objects change when programmed to do so. For example, move or change a property. Bug A problem in a computer program that stops it working the way it was designed. Click event An event that is triggered when the user clicks on an object. Collision Detection event	Email (Electronic Mail) An Internet service that allows people who have an email address to send and receive instant electronic letters. Inbox The folder where new emails go into when they are received. Attachment

A server is a computer that provides information to other computers on a network.

Access points

A device that allows wireless devices to connect to a network.

The event of two objects colliding.

Other vocabulary

Background, code, button, algorithm, alert, debug

A file, which could be a piece of work or a picture, that is sent with the email.

Trusted contact

A person who you know and trust, making an email from them safe to open.

Other vocabulary

BCC, compose, save to draft, address book, cc, compose

Posture

The correct way to sit at the computer.

Keys

Buttons that are pressed on a computer keyboard or typewriter. These can be described by their position; bottom row, top row and home row (middle row).

Space bar

The bar at the bottom of the keyboard.

Typing

The action or skill of writing something by means of a typewriter or in this case a computer.

Formula wizard

The wizard guides the user in creating a variety of formulae for a cell such as calculations, totals, averages, minimum and maximum for the selected cells.

Budget

A set amount of money that someone has available to spend on something. For example, a £100 budget to pay for a party.

Data table

A collection of information, especially facts or numbers, obtained by observation, questions or measurement to be analysed and used to help decision-making.

Formula bar

An area of the spreadsheet into which formulae can be entered using the '=' sign to open the formula.

Other vocabulary

Bar graph, advance mode, line graph, pie chart, range, spin tool

Database

A collection of data organised in such a way that it can be searched, and information found easily. Database usually refers to data stored on computers.

Branching database

Used to classify groups of objects. It is used to help identify the objects by answering questions with either 'yes' or 'no'.

Branching databases can also be called binary trees.

Binary tree

Another name for a branching database.

Other vocabulary

Data, debugging

Output

The amount of something produced by a machine.

Input

What is put in, taken in or operated on by any process or system.

Process

A series of actions or steps taken in order to achieve a particular end.

Code blocks

A way to write code using blocks which each have an object or an action. Each group of blocks will run when a specific condition is met or when an event occurs.

Design

In coding, this is a plan for the program showing the visual look of the user interface (the screen) with the objects. The algorithm can be represented as part of the design, showing actions and events.

Button

A type of object that responds to being clicked on.

Execute

This is the proper word for when you run the code. We say, 'the program (or code) executes.'

Other vocabulary

Campaign

An organised course of action to achieve a goal.

Viewpoint

The way someone sees or thinks about something.

Format

The way in which something is arranged or set out.

Genre

The style or category type of a piece of art, music or writing.

Other vocabulary

Font, reporter, opinion

Animation

The process of adding movement to still objects.

Stop motion

A technique whereby the camera is repeatedly stopped and started, for example to give animated figures the impression of movement.

Onion skinning

A process where the shadow image of the previous frame is present to help you line up the objects of the animation correctly.

Frames per second (FPS)

The number of frames played per second.

Other vocabulary

Frames, pause

Command, debugging, algorithm, background

Simulation

A program that models a real-life situation. They let you try things out that would be too difficult or dangerous to do in real life.

Selection

Selection is a decision command. When selection is used, a program will choose which bit of code to run depending on a condition.

Variable

A named area in computer memory. A variable has a name and a value. The program can change this variable value. Variables are used in programming to keep track of things that can change while a program is running.

Gestures

A type of input where the micro:bit is moved in different ways such as tilting, dropping, shaking.

Other vocabulary

Accelerometer, light sensor, logic, sensor, infinite loop

Logo

A text-based coding language used to control an on screen turtle to create mathematical patterns.

Logo commands (e.g FD, BK, RT, LT)

A list of commands inputted into 2Logo to move the turtle around the screen.

Grid

The template around which the 2Logo turtle moves.

Procedure

Pieces of Logo text with a procedure name that can be run by calling them by name. Saves time if you want to print to screen lots of the same shape.

Other vocabulary

Debugging, multi line mode, Pen up, prediction,

System

A set of things working together as parts of a mechanism or network.

Connect

Establishing a link or communication channel between two or more devices.

Digital

Electronic technology that represents information.

Abstraction

A way of de-cluttering and removing unnecessary details to get a program functioning.

Concatenation

The action of linking a mixture of strings, variable values and numbers together in a series.

Decomposition

A method of breaking down a task into manageable components. This makes coding easier as the components can then be coded separately and then brought back together in the program.

Efficient

In coding, simplified code runs faster and uses less processing memory, it is said to be more efficient.

Other vocabulary

Flowchart, action, debugging

QR code

A machine-readable code consisting of an array of black and white squares, used for storing a URL or other information that can be read by a device's camera.

Host

The main device that the external devices connect to.

External device

A portable computerised device such as a micro-bit, Makey Makey, Crumble board, temperature, pressure or light sensor. Devices such as smart phones can also be used as external devices using their sensors and functions to replicate the functionality of simpler devices. These devices communicate with other devices.

Emulator/Simulator

In computing this is a piece of software that causes the host device to behave like a different computer system (the guest).

Other vocabulary

Input, output, algorithm, sensor

Texture

	High frequency detail or colour information on a computer-generated graphic. Playability A measure of either the ease by which a video game may be played, or of the overall quality of its gameplay. Interactive Responding to a user's input on a computer or device. Customise Modify (something) to suit an individual or task. <u>Other vocabulary</u> Animation, computer game, perspective, evaluation, screenshot, instructions		
		Hypothesis A concept or idea that you test through research and experiments. The plural of hypothesis is hypotheses. Count tool Counts how many of a variable there are in a spreadsheet. Format The way that text looks. Formatting cells is helpful for interpreting a cell's contents for example you might want to format a cell to show a fraction e.g. 4 ½ or include units such as £ or \$. Computational model Creating or using a simulation (a model) of a real-life situation, on a computer. <u>Other vocabulary</u> Columns, profit, dice tool, expenses, formula, formula bar,	3D Something that has three dimensions; height, width and depth. 3D printing The action or process of making a physical object from a three-dimensional digital model, typically by laying down many thin layers of a material in succession. CAD (Computer aided design) A CAD computer program or app allows you to design a 3D object or environment in 2D and visualise it in 3D on the screen from many angles. Design brief A document for a design project, defining the core details, including the goal and strategy. <u>Other Vocabulary</u> 2D, points, net, template, pattern fill
Year 6	Communication The process of exchanging data between two or more devices or components enabling them to share information and resources. Protocol A set of rules and guidelines that govern how data is transmitted and received between devices on a network. Domain name server (DNS) A system that translates human-readable domain names. It acts as the 'phonebook of the internet' allowing users to access websites and other online resources.	Co- ordinates Numbers which determine the position of a point, shape or object in a particular space. Execute /Run Clicking the Play button to make the computer respond to the code. Execute is the technical word for when you run the code. We say, 'the program (or code) executes.' Flowchart A diagram that uses specifically shaped, labelled boxes and arrows to represent an algorithm as a diagram. Event	Micro:bit A pocket sized programmable computer designed to introduce physical computing and coding. MakeCode A free open source platform that provides a visual programming environment for creating interactive experiences. Flashing The process of writing new firmware or data, often an operating system or BIOS. USB

Internet protocol

A protocol or set of rules for routing and addressing packets of data so they can travel across networks and arrive at the destination.

An occurrence that causes a block of code to be run. The event could be the result of user action such as the user pressing a key (when Key) or clicking or swiping the screen (when Clicked, when Swiped) or when objects interact (collision). In 2Code, the event commands are used to create blocks of code that are run when events happen.

Other vocabulary

Debug, decomposition, algorithm, action

Universal serial bus. A device used to connect to computers and other electronic devices.

Other vocabulary

Input, process, output, trace

Text based adventure

A computer game that uses text instead of graphics.

Sprite

A computer graphic which may be programmed to move on-screen.

Micro:bit

A pocket sized programmable computer designed to introduce physical computing and coding.

MakeCode

A free open source platform that provides a visual programming environment for creating interactive experiences.

Flashing

The process of writing new firmware or data, often an operating system or BIOS.

USB

Universal serial bus. A device used to connect to computers and other electronic devices.

Other vocabulary

Input, process, output, trace

Python

A coding language in which you type the code in instead of using blocks.

Clone

In Python in Pieces, this copies an object in the Design view.

While True loop

A way to make the program repeat a set of instructions over and over again, forever or until you tell it to stop.

String

In Python, a string is a sequence of characters enclosed within single quotes (' ') or double quotes (" "). Strings are used to represent text data and can include letters, numbers, symbols, and spaces.

Other vocabulary

Syntax, datatype, integer

Function

In this context, a section of code that gets run when it is called from the main code. A function in a program is usually a piece of code that gets run lots of times.

Flow of control

The order that the computer program executes the commands it contains.

Other vocabulary

Step through, selection, debug

Key Dates and Figures (as appropriate)

Safer internet day – Tuesday 11th February 2026

Year group	Key figure	Significance
Year 1	Steve Jobs 	Co-founder of Apple. He left college but never gave up and worked hard to create the technology company Apple. His invention, the iPhone is now one of the most popular phones in the world. 
Year 2	Bill Gates 	Founder of the world's biggest software company. Born in Washington in 1955, he learnt to program computers at age 13. Owns a charity which helps people in developing countries by improving their health and wellbeing. 
Year 3	Ada Lovelace 	A brilliant mathematician known as 'the world's first computer programmer'. Her notes on technology in her time inspired Alan Turing to create the first computer in the 1940s. Born in 1815 when there were no computers, she was able to understand what technology could look like in the future. 

Year 4

Dr Shirley Jackson

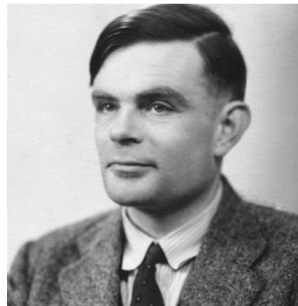


The first black woman to earn a doctorate at the University of Massachusetts. The second black woman to earn a doctorate in physics in the United States of America.
Her work helped to make many advancements in technology such as caller id, fibre-optic cables and touch tone telephones.



Year 5

Alan Turing



The British mathematician who made major contributions to the fields of maths, computer science and artificial intelligence.
He worked for the British government in World War II to break the secret code that the German army used to communicate. Turing helped to develop the first input - output system for the first computer.



Year 6

Marc Hannah



A computer scientist who was one of the founders of a special effects company. His work created the life-like special effects we see in films today, like Jurassic Park. He was instrumental in the design of the early gaming system Nintendo 64.

