

Computing Medium Term Plan

Key:	CS - Computer Science	IT - Information Technology	DL - Digital Literacy
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Click your year group to quickly jump to that section

<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
<u>The national curriculum</u> for computing aims to ensure that all pupils: - can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation - can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems - can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems - are responsible, competent, confident and creative users of information and communication technology.			<u>Keeping children safe in education (KCSIE) 2024</u> states that online safety is essential that children are safeguarded from potentially harmful and inappropriate online material. The four areas of risk: <u>content</u>: being exposed to illegal, inappropriate, or harmful content, for example: pornography, fake news, racism, misogyny, self-harm, suicide, anti-Semitism, radicalisation, and extremism. <u>contact</u>: being subjected to harmful online interaction with other users; for example: peer to peer pressure, commercial advertising and adults posing as children or young adults with the intention to groom or exploit them for sexual, criminal, financial or other purposes. <u>conduct</u>: online behaviour that increases the likelihood of, or causes, harm; for example, making, sending and receiving explicit images (e.g. consensual and non consensual sharing of nudes and semi-nudes and/or pornography, sharing other explicit images and online bullying, and <u>commerce</u>: risks such as online gambling, inappropriate advertising, phishing and or financial scams. If you feel your pupils, students or staff are at risk, please report it to the Anti-Phishing Working Group (https://apwg.org/). <u>Education for a Connected World (EFACW) 2020</u> ● Self-image and identity ● Online relationships ● Online reputation ● Online bullying ● Managing online information ● Health, wellbeing and lifestyle ● Privacy and security ● Copyright and ownership		
<u>Key stage 1</u> Pupils should be taught to: - understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions CS1 - create and debug simple programs CS2 - use logical reasoning to predict the behaviour of simple programs CS3 - use technology purposefully to create, organise, store, manipulate and retrieve digital content IT1 - recognise common uses of information technology beyond school DL1 - use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. DL2					

Year 1

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Introduction to Purple Mash (3 lessons) - To login and create my own avatar on Purple Mash. IT1, DL2 - To open an activity and then save the work to the 'My Work' area. IT1, DL2 - To understand how to complete work in the 2Dos area in Purple Mash. IT1, DL2 Creating and Following Instructions (3 lessons) - To understand that an algorithm is a set of instructions. CS1, CS2, CS3, DL2 - To follow and create simple instructions on a device. CS1, CS2, CS3, DL2 - To sequence algorithms that require a correct order. CS1, CS2, CS3, DL2	Data Explorers (6 lessons) - To think carefully about the steps of grouping items. IT1, DL2 - To group items using a computer. IT1, DL2 - To sort different items. IT1, DL2 - To understand that data is information that can be collected and used. IT1, DL2 - To understand that data can be shown using pictures. IT1, DL2 - To collect data and create a pictogram. IT1, DL2	Creative Computing (4 lessons) - To use paint tools to draw a picture. IT1, DL2 - To create a jigsaw using a digital device and share it so that others can play. IT1, DL2 - To create a placing game in 2DIY. IT1, DL2 - To create images and use these to make a game. IT1, DL2	Technology Around Us (4 lessons) - To know what the word technology means. DL1, DL2 - To know what technology is used in school. DL1, DL2 - To consider the purposes of technology used in the wider world. DL1, DL2 - To understand the safe use of technology devices. DL1, DL2	Coding (6 lessons) - To understand that computer programs work by following instructions called code. CS1, CS2, CS3, DL2 - To use object and action code blocks to make a computer program. CS1, CS2, CS3, DL2 - To understand what an event is in coding. CS1, CS2, CS3, DL2 - To understand the purpose of an output and to be able to 'read' code to find out what it does. CS1, CS2, CS3, DL2 - To change aspects of the design view. CS1, CS2, CS3, DL2 - To plan and make a computer program. CS1, CS2, CS3, DL2	Animated Stories (6 lessons) - To understand some differences between traditional books and digital books. IT1, DL2 - To draw a character for a 2Create a Story digital book. IT1, DL2 - To understand the difference between backgrounds and other objects on the screen in 2Create a Story. IT1, DL2 - To add animation to objects in 2Create a Story. IT1, DL2 - To add text to a 2Create a Story file. IT1, DL2 - To add sounds to a 2Create a Story file. IT1, DL2
Online Safety Starters <u>Privacy and Security (5)</u> Keeping passwords and personal information private.	Online Safety Starters <u>Managing Online Information</u> Finding information and knowing not everything online is true.	Online Safety Starters <u>Self-Image and Identity</u> Knowing when to ask a trusted adult for help online. <u>Online Reputation</u> Understanding that information can stay online.	Online Safety Starters <u>Online Bullying</u> Recognising kind and unkind behaviour online. <u>Health, Wellbeing and Lifestyle</u> Using technology safely at home and school.	Online Safety Starters <u>Online Relationships</u> Being kind and respectful when communicating online.	Online Safety Starters <u>Copyright and Ownership</u> Knowing that digital work belongs to someone.

Key Vocabulary: login, logout, password, avatar, homepage, icon, save, file name, 2Do, instructions, algorithm, program, coding, computer bug, debugging	Key Vocabulary: group, criteria, sort, data, pictogram	Key Vocabulary: digital art, drag and drop, arrow keys, touchscreen gestures, hotspot	Key Vocabulary: technology, device, electronic, digital technology, hardware	Key Vocabulary: instruction, algorithm, program, programmer, code, coding, code blocks, object, action, debugging, design view, code view, event, when clicked, command, output, attribute, scale, program design	Key Vocabulary: digital book, eraser, undo, animation, background, copy and paste, font, text, sound effect
Progression: <u>EYFS</u> Understanding the World - Understanding our technologically diverse world through using technological devices such as cameras, tablets, phones, old laptops and Bee-Bots. LEGO® Education Coding Express Exploring early coding concepts through play. Creating and following simple sequences. Exploring cause and effect. Predicting what will happen. Developing problem-solving skills. <u>Year 2</u> Route Explorers / Coding Following and creating instructions. Building and using algorithms. Creating commands and simple programs. Using events, timers and objects. Testing and debugging programs.	Progression: <u>EYFS</u> Understanding the World - Understanding our technologically diverse world through using technological devices such as cameras, tablets, phones, old laptops and Bee-Bots. LEGO® Education Coding Express Exploring early coding concepts through play. Creating and following simple sequences. Exploring cause and effect. Predicting what will happen. Developing problem-solving skills. <u>Year 2</u> Questioning / Spreadsheets Collecting and presenting data. Using tally charts to gather information. Sorting data using yes or no questions. Understanding and navigating branching databases. Using spreadsheets to organise and represent data. Creating and interpreting block diagrams.	Progression: <u>EYFS</u> Understanding the World - Understanding our technologically diverse world through using technological devices such as cameras, tablets, phones, old laptops and Bee-Bots. LEGO® Education Coding Express Exploring early coding concepts through play. Creating and following simple sequences. Exploring cause and effect. Predicting what will happen. Developing problem-solving skills. <u>Year 2</u> Creating Pictures / Presenting Ideas Using digital painting tools. Creating digital artwork. Exploring different digital art effects and styles. Organising and presenting ideas digitally. Creating digital content for a purpose.	Progression: <u>EYFS</u> Understanding the World - Understanding our technologically diverse world through using technological devices such as cameras, tablets, phones, old laptops and Bee-Bots. LEGO® Education Coding Express Exploring early coding concepts through play. Creating and following simple sequences. Exploring cause and effect. Predicting what will happen. Developing problem-solving skills. <u>Year 2</u> The Internet Understanding what the internet is. Understanding how devices connect to the internet. Accessing the World Wide Web. Understanding websites and webpages. Using browsers and search engines safely. Using keywords to find information.	Progression: <u>EYFS</u> Understanding the World - Understanding our technologically diverse world through using technological devices such as cameras, tablets, phones, old laptops and Bee-Bots. LEGO® Education Coding Express Exploring early coding concepts through play. Creating and following simple sequences. Exploring cause and effect. Predicting what will happen. Developing problem-solving skills. <u>Year 2</u> Coding / Route Explorers Creating programs using algorithms. Using events and timed sequences. Understanding object attributes. Using buttons within programs. Following and creating routes using commands. Testing and debugging programs.	Progression: <u>EYFS</u> Understanding the World - Understanding our technologically diverse world through using technological devices such as cameras, tablets, phones, old laptops and Bee-Bots. LEGO® Education Coding Express Exploring early coding concepts through play. Creating and following simple sequences. Exploring cause and effect. Predicting what will happen. Developing problem-solving skills. <u>Year 2</u> Creating Pictures / Presenting Ideas Creating digital images using a range of tools. Organising digital content clearly. Combining different types of digital content. Presenting ideas digitally for an audience. Developing creative choices when producing digital work.

Year 2

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
The Internet (2 lessons merged lessons) - To understand how the internet, the World Wide Web and a browser work together. DL1, DL2 - To understand the different types of hardware used to access the internet and their functions. DL1, DL2 - To understand the difference between a website and a webpage and use a school website to find information. DL1, DL2 - To understand the difference between a browser and a search engine, and to practise searching for information safely. DL1, DL2 Questioning (4 lessons) - To understand how data can be used to help answer a question. IT1, DL2 - To ask an appropriate question, gather data using a tally chart and present it using digital tools. IT1, DL2 - To begin to explore how yes or no questions can be used to sort data. IT1, DL2 - To understand how branching databases work and practise navigating them to find answers. IT1, DL2	Spreadsheets (6 lessons) - To understand what a spreadsheet is and how to navigate one using 2Calculate. IT1, DL2 - To edit and improve a spreadsheet so that information is organised clearly and displayed correctly. IT1, DL2 - To explore how spreadsheets can complete calculations automatically. IT1, DL2 - To explore the range of tools available in 2Calculate and understand how they can change the way data is used. IT1, DL2 - To create and interpret block diagrams from data. IT1, DL2 - To use our learning about spreadsheets to help us complete a project. IT1, DL2	Creating Pictures (5 lessons) - To create a digital art piece in an Impressionist style. IT1, DL2 - To create a digital art piece in a Pointillism style. IT1, DL2 - To create a digital art piece that is in the style of Piet Mondrian's work. IT1, DL2 - To create digital art patterns in the style of the Arts and Crafts movement. IT1, DL2 - To create a portfolio of digital art. IT1, DL2	Route Explorers (4 lessons) - To use the direction keys in 2Go to move the turtle along a route. CS1, CS2, CS3, DL2 - To use units of distance along with the direction keys in 2Go to move along a route. CS1, CS2, CS3, DL2 - To write instructions to complete more than one step of a route at once. CS1, CS2, CS3, DL2 - To build up instructions for a longer route. CS1, CS2, CS3, DL2	Coding (6 lessons) - To create a computer program using an algorithm. CS1, CS2, CS3, DL2 - To understand ways that the collision detection event can be used in a program. CS1, CS2, CS3, DL2 - To design a program that follows a timed sequence. CS1, CS2, CS3, DL2 - To understand that different objects have different attributes (properties). CS1, CS2, CS3, DL2 - To understand the function of button objects in a program. CS1, CS2, CS3, DL2 - To understand the importance of testing and debugging. CS1, CS2, CS3, DL2	Presenting Ideas (4 lessons) - To understand that ideas can be organised and presented using a concept map. IT1, DL2 - To add information to a concept map. IT1, DL2 - To organise ideas clearly in a concept map. IT1, DL2 - To use a concept map to present ideas to others IT1, DL2
Online Safety Starters <u>Online Relationships (6)</u> Asking permission and saying no online.	Online Safety Starters <u>Managing Online Information</u> Searching online and questioning what is real.	Online Safety Starters <u>Self-Image and Identity</u> Understanding that people may act differently online. <u>Copyright and Ownership</u> Respecting work created by others.	Online Safety Starters <u>Online Bullying</u> Understanding what bullying is and how to get help.	Online Safety Starters <u>Privacy and Security</u> Protecting passwords and private information. <u>Health, Wellbeing and Lifestyle</u> Following simple rules for safe technology use.	Online Safety Starters <u>Online Reputation</u> Knowing online information can be seen and shared.

Key Vocabulary: internet, World Wide Web, browser, modem, router, Wi-Fi, smart device, website, webpage, home page, link, search engine, search bar, keywords, data, primary data, pictogram, tally chart, open question, closed question, yes or no question, grouping, sorting, branching database	Key Vocabulary: spreadsheet, cell, row, column, click and drag, resize, format, edit, delete, wrap text, automatically, apparatus, value, controls toolbar, count tool, is equals tool, quiz tool, block diagram, axis/axes, data, title, labels	Key Vocabulary: impressionism, palette, style, pointillism, outline, De Stijl, fill tool, horizontal, vertical, Arts and Crafts, repeating pattern, rotated pattern, symmetry, digital portfolio, import, image picker, resize	Key Vocabulary: direction, command, instructions, route, algorithm, coding, computer bug, debugging	Key Vocabulary: algorithm, event, object, action, debug/debugging, program design, program, collision detection, command, sequence, timer, attribute, when swiped event, when key event, when clicked, output, button object, bug	Key Vocabulary: concept map, title, node, connecting line, layer, group, present
Progression: <u>Year 1</u> Technology Around Us / Data Explorers Recognising technology in school and the wider world. Understanding the safe use of technology. Understanding that data is information that can be collected and used. Grouping and sorting information. <u>Year 3</u> Email Understanding different ways people communicate. Understanding and responding to emails. Composing and sending emails. Communicating safely online.	Progression: <u>Year 1</u> Data Explorers Understanding that data is information. Grouping and sorting data. Representing data using pictures. Collecting data and creating pictograms. <u>Year 3</u> Spreadsheets Using 2Calculate in Advanced Mode. Automatically totalling rows and columns. Using simple formulae. Using functions to calculate totals, averages, highest and lowest values. Applying spreadsheet skills to solve problems.	Progression: <u>Year 1</u> Creative Computing Using digital paint tools. Creating digital images. Using images to create simple games. Developing confidence using digital creative tools. <u>Year 3</u> Presentations: Google Slides Adding and formatting text. Inserting and formatting images. Choosing appropriate slide designs. Adding animations and transitions. Creating and presenting an effective digital presentation.	Progression: <u>Year 1</u> Creating and Following Instructions Understanding that an algorithm is a set of instructions. Following and creating simple instructions. Sequencing instructions in the correct order. <u>Year 4</u> Logo Inputting commands and instructions. Using commands to create shapes. Using the Repeat command. Using procedures to write instructions.	Progression: <u>Year 1</u> Coding Understanding that computer programs follow instructions called code. Using objects and action code blocks. Understanding events and outputs. Reading simple code. Planning and making a computer program. <u>Year 3</u> Coding Using flowcharts in computer programming. Using different types of timers. Using repeat commands. Using nesting. Testing and debugging programs. Designing and coding a program.	Progression: <u>Year 1</u> Animated Stories / Creative Computing Combining text and images digitally. Adding animation to digital work. Adding sounds to digital work. Creating digital content for an audience. <u>Year 3</u> Presentations: Google Slides Adding and formatting text. Adding slides and selecting appropriate layouts. Inserting and formatting images. Adding animations and transitions. Creating an effective presentation for an audience.

Key:	CS - Computer Science	IT - Information Technology	DL - Digital Literacy
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The national curriculum for computing aims to ensure that all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology.

Key stage 2

Pupils should be taught to:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts **CS1**
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output **CS2**
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs **CS3**
- understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration **CS4**
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content **IT1**
- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information **IT2**
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact **DL1**

Keeping children safe in education (KCSIE) 2024 states that online safety is essential that children are safeguarded from potentially harmful and inappropriate online material.

The four areas of risk:

content: being exposed to illegal, inappropriate, or harmful content, for example: pornography, fake news, racism, misogyny, self-harm, suicide, anti-Semitism, radicalisation, and extremism.

contact: being subjected to harmful online interaction with other users; for example: peer to peer pressure, commercial advertising and adults posing as children or young adults with the intention to groom or exploit them for sexual, criminal, financial or other purposes.

conduct: online behaviour that increases the likelihood of, or causes, harm; for example, making, sending and receiving explicit images (e.g. consensual and non consensual sharing of nudes and semi-nudes and/or pornography, sharing other explicit images and online bullying, and

commerce: risks such as online gambling, inappropriate advertising, phishing and or financial scams. If you feel your pupils, students or staff are at risk, please report it to the Anti-Phishing Working Group (<https://apwg.org/>).

Education for a Connected World (EFACW) 2020

- Self-image and identity
- Online relationships
- Online reputation
- Online bullying
- Managing online information
- Health, wellbeing and lifestyle
- Privacy and security
- Copyright and ownership

Year 3

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Email (6 lessons) - To understand how people communicate with each other. CS4, IT2, DL1 - To understand and respond to an email. CS4, IT2, DL1 - To compose and send an email. CS4, IT2, DL1 - To send an email attachment. CS4, IT2, DL1 - To learn how to use email safely. CS4, IT2, DL1 - To explore simulated email scenarios. CS4, IT2, DL1	Spreadsheets (6 lessons) - To understand the layout and features of 2Calculate in Advanced Mode. IT2, DL1 - To use the arrows toolbar to be able to automatically total rows and columns. IT2, DL1 - To use simple formulae in a spreadsheet by using the formula wizard. IT2, DL1 - To use advanced formulae in a spreadsheet to calculate totals, averages and to find the highest and lowest values. IT2, DL1 - To apply spreadsheet skills to solve real-world problems. IT2, DL1 - To design and use a spreadsheet to answer a series of questions. IT2, DL1	Micro:bits (4 lessons) - To use a micro:bit to create an electronic name badge. CS1, CS2, CS3, DL1 - To code a micro:bit to show animations on its LED display. CS1, CS2, CS3, DL1 - To code a micro:bit to show different images on the LED display when specific buttons are pressed. CS1, CS2, CS3, DL1 - To code a micro:bit to make sounds when movements are detected. CS1, CS2, CS3, DL1	Touch Typing (4 lessons) - To learn correct finger positioning on the keyboard and understand when to use the left or right hand. IT2, DL1 - To learn how to type numbers accurately and to use the shift key for capital letters. IT2, DL1 - To practise typing punctuation marks and symbols and build accuracy with simple words. IT2, DL1 - To practise typing sentences using capital letters, spaces, and full stops. IT2, DL1	Coding (6 lessons) - To understand what a flowchart is and how flowcharts are used in computer programming. CS1, CS2, CS3, DL1 - To understand that there are different types of timers. CS1, CS2, CS3, DL1 - To understand how to use the repeat command. CS1, CS2, CS3, DL1 - To understand the importance of nesting when coding, testing and debugging. CS1, CS2, CS3, DL1 - To design a program. CS1, CS2, CS3, DL1 - To use design documentation to code a program. CS1, CS2, CS3, DL1	Presentations - Google Slides (5 lessons) - To learn how to open Slides, add text and change how it looks. IT1, IT2, DL1 - To learn how to add slides, change slide designs and insert pictures into a presentation. IT1, IT2, DL1 - To add animations to pictures and text, and transitions between slides. IT1, IT2, DL1 - To create an effective presentation IT1, IT2, DL1 - To complete and present a slideshow to an audience. IT1, IT2, DL1
Online Safety Starters <u>Online Bullying (2)</u> Recognising online bullying and seeking support. <u>Privacy and Security (3)</u> Keeping accounts and devices secure.	Online Safety Starters <u>Managing Online Information</u> Searching effectively and spotting fact or opinion.	Online Safety Starters <u>Self-Image and Identity</u> Exploring how people show identity online.	Online Safety Starters <u>Health, Wellbeing and Lifestyle</u> Understanding how technology can affect wellbeing.	Online Safety Starters <u>Online Relationships</u> Understanding trust, permission and safe communication.	Online Safety Starters <u>Copyright and Ownership</u> Understanding that copying work without permission is unfair. <u>Online Reputation</u> Thinking carefully before sharing information online.

Key Vocabulary: communication, email, inbox, compose, address book, recipient, attachment, trusted contact, personal information, password, email simulation	Key Vocabulary: advanced mode, sheet, merge cells, copy tools, total tools, formula, formula bar, formula wizard, function, SUM, AVERAGE, MIN, MAX, range, operations, problem solving, data	Key Vocabulary: hardware, LED, repeat, program, software, animation, image, infinite loop, output, sequence, data, input, selection, accelerometer, gestures, sound output, speaker	Key Vocabulary: posture, typing, keyboard, home keys, top keys, bottom keys, numbers row, shift key, space bar	Key Vocabulary: collision detection, flowchart, procedure, timer, sequence, nested, interval, repeat, button object, turtle object, right-angle, degrees, object, action, event, nesting, test, debug, design, algorithm, output, attribute, alert	Key Vocabulary: Google Slides, slide, format, font, word art, media, image, handles, picture styles, shape styles, animation, transition, speaker notes, presenter notes
Progression: <u>Year 2</u> The Internet Understanding how the internet, World Wide Web and browsers work together. Understanding websites and webpages. Using a browser and search engine safely. Developing safe and responsible use of the internet. <u>Year 4</u> Effective Searching Understanding how search engines work. Using keywords to find information. Understanding how results are collected, sorted and ranked. Refining searches to find accurate information. Judging whether online information and sources can be trusted.	Progression: <u>Year 2</u> Spreadsheets Understanding what a spreadsheet is. Navigating and editing a spreadsheet. Exploring automatic calculations. Creating and interpreting block diagrams. Using spreadsheets to answer questions. <u>Year 5</u> Spreadsheets Extending understanding of formulae and functions. Using formulae to convert measurements. Creating and interpreting line graphs. Analysing data to identify patterns. Using spreadsheets for planning and budgeting.	Progression: <u>Year 2</u> Coding Creating programs from algorithms. Using events in programs. Using timers and sequences. Understanding object attributes. Testing and debugging programs. <u>Year 4</u> Micro:bits Using sensors and variables. Using selection and if/else statements. Coding programs that respond to light levels. Using gestures and inputs. Creating simulations and games.	Progression: <u>Year 2</u> Presenting Ideas Using digital tools to organise information. Adding information to digital work. Organising ideas clearly. Presenting digital work to others. <u>Year 5</u> Word Processing with Google Docs Creating and saving documents. Editing and formatting text. Adjusting document layouts. Inserting and formatting images. Using tables to organise information. Combining skills to produce a finished document.	Progression: <u>Year 2</u> Coding Creating a program using an algorithm. Using collision detection. Creating timed sequences. Understanding object attributes. Using button objects. Testing and debugging programs. <u>Year 4</u> Coding Building programs using previously learned coding structures. Using selection. Using co-ordinates. Introducing loops. Using variables. Creating a game that keeps score.	Progression: <u>Year 2</u> Presenting Ideas Organising ideas using a concept map. Adding information to digital presentations. Organising information clearly. Using digital tools to present ideas to others. <u>Year 4</u> Word Processing with Google Docs Formatting and editing digital content. Adjusting layouts for a purpose. Inserting and formatting images. Using tables to organise information. Combining digital skills to create an effective finished product.

Year 4

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Effective Searching (3 lessons) - To understand what a search engine is, how it works and how to use simple keywords to find information online. To understand how search engines collect, sort and rank results, and why some results appear first. CS4, IT1, IT2, DL1 - To learn advanced ways to improve searches so we can find the most accurate and useful results quickly. CS4, IT1, IT2, DL1 - To develop strategies to judge whether information online is true and if sources can be trusted. CS4, IT1, IT2, DL1 Hardware and Software (3 lessons) - To identify and describe different pieces of computer hardware and understand their functions. CS4, IT2, DL1 - To understand what software is and how we use it to complete tasks. CS4, IT2, DL1 - To explore how hardware and software interact to complete everyday tasks. CS4, IT2, DL1	Logo (3 lessons) - To know key commands and input simple instructions. CS1, CS2, CS3, DL1 - To use a variety of commands to create shapes using multi-line mode. CS1, CS2, CS3, DL1 - To use the Repeat command. CS1, CS2, CS3, DL1 - To change the line thickness and colour. CS1, CS2, CS3, DL1 - To use procedures to write instructions. CS1, CS2, CS3, DL1 Introduction to AI (2 lessons) - To understand what Artificial Intelligence is and some of the tasks it can carry out. CS4, IT2, DL1 - To learn how to be a good digital citizen when using AI. To think about how AI might develop in the future. CS4, IT2, DL1	Sound Stories (4 lessons) - To understand what makes audiobooks effective and identify the key features that make them engaging. IT2, DL1 - To plan and write a script for an engaging audiobook. IT2, DL1 - To record clear narration and add sound effects to an audiobook. IT2, DL1 - To edit, improve and finalise an audiobook using recording and sound design tools. IT2, DL1	Micro:Bits (4 lessons) - To code a micro:bit to make it work as a step counter. CS1, CS2, CS3, DL1 - To code a micro:bit to make a light switch that switches on or off when the light level changes. CS1, CS2, CS3, DL1 - To code a micro:bit to make a rock, paper and scissors game. CS1, CS2, CS3, DL1 - To code micro:bits to make simulated dice. CS1, CS2, CS3, DL1	Coding (6 lessons) - To create a simple computer program using coding structures previously encountered. CS1, CS2, CS3, DL1 - To know what selection means in computer programming. CS1, CS2, CS3, DL1 - To know how to use co-ordinates in computer programming. CS1, CS2, CS3, DL1 - To explore methods that introduce loops in coding. CS1, CS2, CS3, DL1 - To understand what a variable is in programming. CS1, CS2, CS3, DL1 - To create a game that keeps score. CS1, CS2, CS3, DL1	Animation (6 lessons) - To understand what animation is. IT2, DL1 - To understand the term onion skinning and be able to use this technique for 2D computer animations. IT2, DL1 - To know how to enhance simple animations using animation software. IT2, DL1 - To plan an animation. IT2, DL1 - To create a narrative through animation. IT2, DL1 - To evaluate animations. IT2, DL1
Online Safety Starters <u>Managing Online Information (6)</u> Judging accuracy, adverts and fake news.	Online Safety Starters <u>Privacy and Security</u> Keeping personal information private online.	Online Safety Starters <u>Copyright and Ownership</u> Considering permission before reusing online content.	Online Safety Starters <u>Online Bullying</u> Recognising online bullying in different forms.	Online Safety Starters <u>Online Relationships</u> Building safe and positive online relationships. <u>Online Reputation</u> Knowing information online can be copied and shared.	Online Safety Starters <u>Self-Image and Identity</u> Understanding that online identity may not always be real. <u>Health, Wellbeing and Lifestyle</u> Managing screen time and distractions.

Key Vocabulary: internet, website, search engine, search bar, keywords, virtual assistant device, crawl, index, rank, relevance, filter, refine, snippet, exact match, reliable source, fake news, technology, manual technology, electrical technology, digital technology, smart technology, computer system, hardware, peripheral, component, input, output, storage, software, application, app, program, process	Key Vocabulary: logo, logo commands, pen up, pen down, multi-line mode, repeat, setps, setpc, procedure, artificial intelligence, AI, data, generative AI, prediction, refine, format, prompt, digital citizenship, privacy, responsible behaviour, trustworthy, reliable, future technology, innovation, automation, human oversight	Key Vocabulary: audiobook, sound effects, background music, editor, sound technician, sound effects manager, recording, track, timeline, edit, playback, final mix	Key Vocabulary: accelerometer, data, sensor, variable, if/else statement, infinite loop, logic, light sensor, gestures, if statement, selection, simulation	Key Vocabulary: action, attribute, event, object, tinker, flowchart, sequence, input, selection, if statement, if/else statement, timer, co-ordinates, repeat, repeat until, loop, variable, initialise, alert, tag attribute, random	Key Vocabulary: animation, animation software, frame, stop motion, onion skinning, copy frame, frames per second, background, sound effect, storyboard, evaluate, sharing controls
Progression: <u>Year 2</u> The Internet Understanding how the internet, World Wide Web and browsers work together. Understanding websites and webpages. Using browsers and search engines safely. Using keywords to search for information. <u>Year 6</u> Networks Understanding what computer networks are. Understanding the difference between the internet and World Wide Web. Exploring internet services. Understanding communication and collaboration online. Exploring how rules, filters and website blocking affect internet use.	Progression: <u>Year 2</u> Route Explorers Following and creating routes using instructions. Using direction commands. Using units of distance. Building algorithms for longer routes. <u>Year 6</u> Introduction to Python Using a text-based programming language. Entering simple commands. Using Python to perform calculations. Using repetition and library functions. Programming a graphical user interface.	Progression: <u>Year 1</u> Animated Stories Creating digital stories. Combining text and images. Adding animation. Adding sounds and sound effects to digital work. <u>Year 5</u> Word Processing with Google Docs Creating digital content for a purpose. Editing and formatting content. Combining text and images. Making decisions about layout and presentation. Reviewing and improving a finished digital product.	Progression: <u>Year 3</u> Micro:bits Creating programs for a physical device. Using the LED display as an output. Using buttons as inputs. Using the accelerometer to detect movement. Producing sound outputs. <u>Year 5</u> Micro:bits Using variables and selection. Using sensor data to control outputs. Using randomisation. Creating interactive games. Using a micro within an electrical circuit.	Progression: <u>Year 3</u> Coding Using flowcharts. Using timers and repeat commands. Using nesting. Testing and debugging programs. Designing and coding a program. <u>Year 5</u> Coding Simplifying code to improve efficiency. Programming simulations. Using decomposition and abstraction. Using functions. Using datatypes and variables. Reading code, predicting outcomes and debugging.	Progression: <u>Year 1</u> Animated Stories Creating digital stories. Adding animation to objects. Combining backgrounds and objects. Adding text and sound. Creating digital content for an audience. <u>Year 5</u> Game Creator Evaluating existing digital products. Planning digital content. Designing and using sprites. Creating an interactive digital environment. Checking playability and improving a finished product. Evaluating digital work created by others.

Year 5

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Word Processing with Google Docs (6 lessons) - To format text in a new Google Doc and save it with an appropriate filename. IT2, DL1 - To learn how to edit text and apply more advanced formatting. IT2, DL1 - To learn how to adjust the layout of a Google Doc. IT2, DL1 - To learn how to insert and format images in Google Docs. IT1, IT2, DL1 - To use tables in Google Docs to organise information. IT2, DL1 - To combine Google Doc skills to create and review a factsheet. IT2, DL1	Spreadsheets (6 lessons) - To refresh and extend understanding of formulae and functions from previous learning. IT2, DL1 - To use formulae in 2Calculate to convert measurements between different units. IT2, DL1 - To use 2Calculate to create and interpret line graphs that show how data changes over time. IT2, DL1 - To analyse weather data by using spreadsheets to identify patterns. IT2, DL1 - To use spreadsheets to plan and budget for an event. IT2, DL1 - To use a spreadsheet to plan a holiday. IT2, DL1	Game Creator (5 lessons) - To evaluate the features of a successful video game. IT2, DL1 - To plan a game in 2DIY3D. IT2, DL1 - To design and use game sprites. IT2, DL1 - To add features to a game world and check playability. IT2, DL1 - To evaluate games created by others. IT2, DL1	Databases (4 lessons) - To understand what a database is. IT2, DL1 - To design and create a database. IT2, DL1 - To build queries to find information. IT2, DL1 - To solve problems using a database. IT2, DL1	Coding (6 Lessons) - To understand some ways that code can be simplified so that it is easier to read and runs more efficiently. CS1, CS2, CS3, DL1 - To program a computer simulation using 2Code. CS1, CS2, CS3, DL1 - To know what decomposition and abstraction are in Computer Science. CS1, CS2, CS3, DL1 - To understand what a function is and how functions work in code. CS1, CS2, CS3, DL1 - To understand what datatypes are and how they are used when coding with variables. CS1, CS2, CS3, DL1 - To read code, predict outcomes and identify and fix bugs. CS1, CS2, CS3, DL1	Micro:Bits (4 lessons) - To create a micro:bit story telling game. CS1, CS2, CS3, DL1 - To code a micro:bit to measure temperature and produce different outputs based on this. CS1, CS2, CS3, DL1 - To code a micro:bit to simulate a magic 8 ball. CS1, CS2, CS3, DL1 - To create an automatic scoreboard display using a micro:bit. CS1, CS2, CS3, DL1
Online Safety Starters Self-Image and Identity (2) Making responsible choices about online identity. Health, Wellbeing and Lifestyle (4) Understanding technology's impact on wellbeing.	Online Safety Starters Online Bullying Knowing how to block, report and get support..	Online Safety Starters Online Relationships Communicating safely in online communities.	Online Safety Starters Copyright and Ownership Using online content fairly and legally.. Online Reputation Understanding how online information can affect opinions.	Online Safety Starters Managing Online Information Evaluating trust, adverts, hoaxes and stereotypes.	Online Safety Starters Privacy and Security Using strong passwords and checking app permissions.

Key Vocabulary: word processor, document, font, formatting, editing, bullet points, cut, copy, paste, page margins, page orientation, text alignment, styles, image, handles, text wrapping, picture styles, image styles, table, row, column, cell, border	Key Vocabulary: cell, row, column, formula, formula wizard, function, conversion, unit, line graph, axis/axes, trend, plot/plotting, continuous data, forecast, meteorologist, millibar, budget, income, cost/expense, profit, data	Key Vocabulary: game genre, 2D game, 3D game, game design, sprite, sprite animation, playability, game environment, game feedback	Key Vocabulary: data, database, group, field, filter, record, sort, edit, validation, condition, operator, query, linked tables, multiple tables	Key Vocabulary: object, event, action, tab attribute, simplify, efficient, computer generated variable, algorithm, flowchart, sequence, simulation, physical system, variable, decomposition, abstraction, sub-routine, friction, function, datatype, string, concatenation, print to screen	Key Vocabulary: gestures, if statement, logic, variable, data, selection, sleep, repeat, random, electrical circuit, pins
Progression: <u>Year 3</u> Presentations: Google Slides Adding and formatting text. Inserting and formatting images. Organising digital content using appropriate layouts. Creating effective digital presentations. Presenting finished work to an audience. <u>Year 6</u> Blogging Planning digital content for a specific purpose. Drafting, revising and editing written content. Formatting and styling digital writing. Using hyperlinks. Publishing digital content for an audience.	Progression: <u>Year 3</u> Spreadsheets Using spreadsheets in Advanced Mode. Automatically totalling rows and columns. Using simple and advanced formulae. Using functions including SUM, AVERAGE, MIN and MAX. Applying spreadsheet skills to solve problems. <u>Year 6</u> Spreadsheets with Google Sheets Using and applying spreadsheet formatting. Using spreadsheet functions. Creating and formatting charts. Sorting and filtering data. Using advanced functions. Combining spreadsheet skills for a given purpose.	Progression: <u>Year 4</u> Animation Understanding how digital animations are created. Using frames and onion skinning. Planning digital content using a storyboard. Creating a narrative through animation. Evaluating and improving digital work. <u>Year 6</u> Coding Designing programs for a specific purpose. Using user input. Testing and debugging programs. Using program design documentation. Creating interactive digital content. Developing a text-based adventure game.	Progression: <u>Year 2</u> Questioning Gathering and presenting data. Asking appropriate questions about data. Using yes or no questions to sort information. Understanding how branching databases work. Navigating a branching database to find answers. <u>Year 6</u> Spreadsheets with Google Sheets Organising data within spreadsheets. Sorting and filtering data. Using functions to analyse information. Creating charts to represent data. Combining data-handling skills for a given purpose.	Progression: <u>Year 4</u> Coding Using selection in programs. Using co-ordinates. Using loops. Using variables. Creating a game that keeps score. Testing and improving programs. <u>Year 6</u> Coding Using cloning. Using hotspots. Using different forms of user input. Using flowcharts to test and debug simulations. Using program design documentation. Creating a text-based adventure game.	Progression: <u>Year 4</u> Micro:bits Using the accelerometer and sensors. Using variables. Using selection and if/else statements. Creating programs that respond to inputs. Creating simulations and games. <u>Year 6</u> Micro:bits Using micro with electrical circuits. Using sensors to collect data. Collecting step-count data. Collecting temperature and light-level data. Using collected data in graphing software.

Year 6

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Coding (6 lessons) - To understand ways to use cloning in 2Code. CS1, CS2, CS3, DL1 - To explore the use of hotspots in 2Code. CS1, CS2, CS3, DL1 - To understand the different options for generating and using user input in 2Code. CS1, CS2, CS3, DL1 - To use flowcharts to test and debug a simulation. CS1, CS2, CS3, DL1 - To use program design documentation to produce a program. CS1, CS2, CS3, DL1 - To understand how 2Code can be used to make a text-based adventure game. CS1, CS2, CS3, DL1	Spreadsheets with Google Sheets (Lesson 6) - To understand and use basic formatting in Google Sheets. IT2, DL1 - To develop skills in using basic functions in Google Sheets. IT2, DL1 - To create and format charts in Google Sheets. IT2, DL1 - To sort and filter data within a spreadsheet. IT2, DL1 - To understand and use advanced functions in Google Sheets. IT2, DL1 - To combine Google Sheets skills to create an effective spreadsheet for a given purpose. IT2, DL1	Networks (4 lessons) - To understand what a computer network is and identify examples of networks at home, school and in the wider world. CS4, IT2, DL1 - To understand the difference between the internet and the World Wide Web and explore the services they provide. CS4, IT2, DL1 - To explore how the internet can be used for communication and collaboration, and how to do this safely and respectfully. CS4, IT2, DL1 - To explore who is in charge of the internet and how rules and website blocking can affect people, society and online platforms. CS4, IT2, DL1	Blogging (4 lessons) - To understand blogs and their features. IT2, DL1 - To plan the theme, content and structure for a blog post. IT2, DL1 - To write and style a blog post. IT2, DL1 - To review and comment on blog posts with an understanding of online safety. IT2, DL1	Micro:Bits (4 lessons) - To code a micro:bit to identify materials that are conductors. CS1, CS2, CS3, DL1 - To use a micro:bit to collect step count data and use this data in graphing software. CS1, CS2, CS3, DL1 - To use a micro:bit to collect temperature data and use this data in graphing software. CS1, CS2, CS3, DL1 - To use a micro:bit to collect light level data and use this data in graphing software. CS1, CS2, CS3, DL1	Introduction to Python (4 lessons) - To understand that Python is a text-based coding language and enter simple commands. CS1, CS2, CS3, DL1 - To use Python to perform mathematical calculations. CS1, CS2, CS3, DL1 - To be able to use repetition and Python library functions. CS1, CS2, CS3, DL1 - To understand how Python in Pieces can be used to program a graphical user interface. CS1, CS2, CS3, DL1
Online Safety Starters Health, Wellbeing and Lifestyle (5) Managing pressure, age ratings and wellbeing online.	Online Safety Starters Privacy and Security Managing passwords, scams, updates and privacy settings.	Online Safety Starters Online Bullying Recording and reporting online bullying. Online Reputation Building and protecting a positive online reputation.	Online Safety Starters Online Relationships Understanding risks linked to sharing online.	Online Safety Starters Managing Online Information Understanding ranking, persuasion and misinformation.	Online Safety Starters Self-Image and Identity Challenging harmful online content and seeking help. Copyright and Ownership Referencing sources and using reusable content.

Key Vocabulary: object, attribute, variable, timer, co-ordinates, clone, draggable attribute, repeat over, hotspot, datatype, input, concatenation, tinker, algorithm, debugging, function, flowchart, simulation, sub-routine, design, abstraction, decomposition, user interface, selection, repeat until, text-based adventure	Key Vocabulary: cell, row, column, workbook, worksheet, formatting, formula, function, SUM, AVERAGE, MAX, MIN, chart, chart labels, sort, filter, COUNTA, COUNT, COUNTIF, IF	Key Vocabulary: network, LAN, WAN, router, Wi-Fi, internet, World Wide Web, website, web browser, email, internet chat, video call, collaborate, respectful communication, online safety, censorship, firewall, filter, freedom of speech, responsible use	Key Vocabulary: blog, blog post, vlog, plan, draft, revise, edit, publish, hyperlink, commenting, approval, netiquette, moderation	Key Vocabulary: conductivity, electrical circuit, pins, sleep, variable, accelerometer, chart, data, data logging, sensor, LED	Key Vocabulary: command, function, print, string, floating point number, modulo operator, floor division, library, loop, range, variable, sprite, co-ordinate, sleep
Progression: <u>Year 5</u> Coding Simplifying code to make it more efficient. Programming simulations. Using decomposition and abstraction. Using functions. Working with datatypes and variables. Reading, predicting and debugging code. <u>Year 7</u> Programming Developing sequence, selection and iteration. Using variables and operators. Designing algorithms and programs. Testing and debugging programs. Developing programs using visual programming languages. Applying computational thinking to increasingly complex problems.	Progression: <u>Year 5</u> Spreadsheets Using formulae and functions. Converting measurements using formulae. Creating and interpreting line graphs. Analysing data and identifying patterns. Using spreadsheets for planning and budgeting. <u>Year 7</u> Spreadsheets and Data Applying spreadsheet skills to real-world problems. Using formulae and functions. Organising and analysing data. Sorting and filtering information. Creating appropriate charts and data representations. Using spreadsheets for modelling, including financial modelling.	Progression: <u>Year 4</u> Effective Searching / Hardware and Software Understanding how search engines work. Understanding how information is collected, sorted and ranked. Identifying computer hardware and its functions. Understanding what software is. Understanding how hardware and software work together. <u>Year 7</u> Computer Systems and Networks Developing understanding of computer systems. Exploring input, output and storage devices. Understanding how computers communicate. Developing understanding of networks and internet technologies. Exploring how data and information move between devices.	Progression: <u>Year 5</u> Word Processing with Google Docs Creating and formatting digital documents. Editing and improving written content. Adjusting layouts for a purpose. Combining text and images. Creating digital content for an intended audience. Reviewing and improving a finished digital product. <u>Year 7</u> Digital Literacy and Online Communication Creating and editing digital content for different purposes. Communicating and collaborating appropriately online. Considering the audience when creating digital content. Using technology safely and respectfully. Understanding online identity, privacy and responsible behaviour.	Progression: <u>Year 5</u> Micro:bits Using variables and selection. Using sensor data to control outputs. Using randomisation. Creating interactive programs. Using a micro within an electrical circuit. <u>Year 7</u> Physical Computing / Programming Applying programming concepts to physical systems. Using inputs and outputs. Using sensors to collect data. Using data to control program behaviour. Designing, testing and improving physical computing solutions.	Progression: <u>Year 5</u> Coding Using algorithms and flowcharts. Using variables and datatypes. Using functions. Using decomposition and abstraction. Reading and predicting code. Testing and debugging programs. <u>Year 7 and Beyond</u> Text-Based Programming Moving from visual to text-based programming. Writing and executing commands. Using variables and operators. Using selection and repetition. Using functions. Developing, testing and debugging increasingly complex programs.