Computing at Grove Church of England Primary

Revised 2026

LONG TERM PLAN OF KNOWLEDGE AND SKILLS

"Computer science empowers students to create the world of tomorrow."

Satya Nadella, CEO of Microsoft

Intent

Computing is a unique subject in that it is bursting with opportunities to solve problems, for children to evaluate and improve their own work, and to demonstrate our core value of resilience. The intent of our Computing offer is to provide a structured curriculum which is accessible to all our students and that is rich with opportunities for a broad, deep understanding of computing and how it links to their everyday lives. It builds incrementally on the skills learned each year until our students become competent, confident, creative and safe users of a wide variety of computing technology.

Computing lessons provide opportunities for children to reflect on the difference between humans and computers, which can help them articulate their own spiritual values and beliefs, particularly in understanding the limitations of computers, as well as awe and wonder at the power of digital tools. Using computing skills across the curriculum provides a valuable opportunity for children to feel connected with others, as well as an important real-life context for them to show social responsibility in their safe and respectful use of technology both at school and at home.

Implementation

At Grove CE Primary, every child enjoys their regular computing lessons that give them the crucial skills they need to access and expand upon all other areas of the curriculum, and gives them a firm foundation for both their future use of ICT, and their study of computing and computer science at secondary school. Our curriculum is based on the Teach Computing Curriculum, created by subject experts from the National Centre for Computing Education, using the latest pedagogical research. The computing content is organised into interconnected networks, ensuring that skills and knowledge are built on year by year and sequenced appropriately to maximise learning for all children, as well as links to other curriculum areas. The units for key stages 1 and 2 are based on a spiral curriculum. This means that each of the four themes (Creating Media, Data and Information, Programming, Computing Systems and Networks) is revisited regularly, at least once in each year group, and pupils revisit each theme through a new unit that consolidates and builds on prior learning within that theme. See Appendix 1 for details of how each unit links to and addresses the Computing subject content of the National Curriculum.

The Teach Computing Curriculum uses the National Centre for Computing Education's computing taxonomy to ensure comprehensive coverage of the subject. This is summarised in the following ten strands:

■ Algorithms — Be able to comprehend, design, create, and evaluate algorithms
■ Computer networks — Understand how networks can be used to retrieve and share information, and how they come with associated risks
■ Computer systems — Understand what a computer is, and how its constituent parts function together as a whole
■ Creating media — Select and create a range of media including text, images, sounds, and video
■ Data and information — Understand how data is stored, organised, and used to represent real-world artefacts and scenarios
■ Design and development — Understand the activities involved in planning, creating, and evaluating computing artefacts
■ Effective use of tools — Use software tools to support computing work
■ Impact of technology — Understand how individuals, systems, and society as a whole interact with computer systems
■ Programming — Create software to allow computers to solve problems
■ Safety and security — Understand risks when using technology, and how to protect individuals and systems

Our pupils become confident in using a variety of hardware and software, and produce high-quality work with a purpose. Keeping pupils safe online is crucial for their wellbeing and development, so Grove School fosters digital citizenship, helping pupils make smart choices and behave ethically when using technology.

Online Safety

Teaching online safety not only protects our pupils but also empowers them to use the internet responsibly. The Teach Computing Curriculum covers all the requirements of the National Curriculum for online safety, and this is reiterated and reinforced in our PSHE lessons and also throughout the year in response to any relevant issues that arise. We also teach specific digital citizenship lessons in every class every half term, covering every strand mentioned in Education for a Connected World (See appendix 2), provide regular guidance to parents about online safety and celebrate Safer Internet Day annually.

Enhancements

We make use of ICT to enhance our curriculum offering, as well as encourage our children to engage with the wider world and build up their cultural capital. We regularly schedule "virtual visits" including online history workshops with the British Museum looking closely at artefacts, and interactive sessions with authors to encourage a love of reading and writing. Children enjoy creating and recording their own music using digital tools, programming robots and making links with angles and distance in maths, and using physical sensors and logging software in science investigations. In-person visits include a Y3/4 data-logging session from our local solar farm, a Y5/6 STEM workshop from Eko and creative digital skills from FS to Year 6 with Three Mobile.

SEND

Computing and Information Technology are essential tools for inclusion at Grove. They enable children with SEND, whatever their needs, to use technology purposefully in ways that make the wider curriculum accessible, empower those with communication difficulties to engage with others and to fully include everyone in activities and learning. Our children have the opportunity to use information technology to help them access other areas of the curriculum, for example learning to type accurately if they have fine motor skill limitations that impact their writing, using "text-to-speech" for dyslexic children to be able

to access the same texts for research in history, science or geography, or making use of motivating and well-sequenced overlearning of phonics or maths facts through games and interactive programs.

Progression across year groups and key stages

All learning objectives have been mapped to the National Centre for Computing Education's taxonomy of ten strands, which ensures that units build on each other from one key stage to the next. Within the Teach Computing Curriculum, every year group learns through units within the same four themes, combining the ten strands above. This approach allows us to use the spiral curriculum approach to progress skills and concepts from one year group to the next. The 4 themes, which are colour-coded in the long term plan, are:

Creating Media	Data and Information
Programming	Computing Systems and Networks

Termly Overview:

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
EYFS	Awesome Autumn		Winter Warmers		Springtime	
Year 1	Technology Around Us	Digital Painting	Digital Writing	Programming Animations	Moving a Robot	Grouping Data
Year 2	Information Technology Around Us	Digital Photography	Programming Quizzes	Robot Algorithms	Making Music	Pictograms
Year 3	Connecting Computers	Sequencing Sounds	Branching Databases	Desktop Publishing	Events and Actions in Programs	Stop-Frame animation
Year 4	The Internet	Audio Production	Repetition in Shapes	Data Logging	Photo Editing	Repetition in Games
Year 5	Systems and Searching	Video Production	Vector Graphics	Flat-file Databases	Selection in Physical Computing	Selection in Quizzes
Year 6	Communication and Collaboration	Webpage Creation	Variables in Games	Introduction to Spreadsheets	3D Modelling	Sensing Movement

Pedagogy

Our computing lessons include a range of strategies to deliver effective lessons to our pupils. There are 12 key principles underlined by research, which have each been shown to contribute to effective teaching and learning in computing, that are embodied in our curriculum.

Lead with concepts Support pupils in the acquisition of knowledge, through the use of key concepts, terms, and vocabulary, providing opportunities to build a shared and consistent understanding. Glossaries, concept maps, and displays, along with regular recall and revision, can support this approach.	**Work together** Encourage collaboration, specifically using pair programming and peer instruction, and also structured group tasks. Working together stimulates classroom dialogue, articulation of concepts, and development of shared understanding.	**Get hands-on** Use physical computing and making activities that offer tactile and sensory experiences to enhance learning. Combining electronics and programming with arts and crafts (especially through exploratory projects) provides pupils with a creative, engaging context to explore and apply computing concepts.
Unplug, unpack, repack Teach new concepts by first unpacking complex terms and ideas, exploring these ideas in unplugged and familiar contexts, then repacking this new understanding into the original concept. This approach, called 'semantic waves', can help pupils develop a secure understanding of complex concepts.	**Model everything** Model processes or practices — everything from debugging code to binary number conversions — using techniques such as worked examples and live coding. Modelling is particularly beneficial to novices, providing scaffolding that can be gradually taken away.	**Foster program comprehension** Use a variety of activities to consolidate knowledge and understanding of the function and structure of programs, including debugging, tracing, and Parson's Problems. Regular comprehension activities will help secure understanding and build connections with new knowledge.
Add variety Provide activities with different levels of direction, scaffolding, and support that promote learning, ranging from highly structured to more exploratory tasks. Adapting your instruction to suit different objectives will help keep all pupils engaged and encourage greater independence.	**Create projects** Use project-based learning activities to provide pupils with the opportunity to apply and consolidate their knowledge and understanding. Design is an important, often overlooked aspect of computing. Pupils can consider how to develop an artefact for a particular user or function, and evaluate it against a set of criteria.	**Make concrete** Bring abstract concepts to life with real-world, contextual examples, and a focus on interdependencies with other curriculum subjects. This can be achieved through the use of unplugged activities, proposing analogies, storytelling around concepts, and finding examples of the concepts in pupils' lives.
Challenge misconceptions Use formative questioning to uncover misconceptions and adapt teaching to address them as they occur. Awareness of common misconceptions alongside discussion, concept mapping, peer instruction, or simple quizzes can help identify areas of confusion.	**Structure lessons** Use supportive frameworks when planning lessons, such as PRIMM (Predict, Run, Investigate, Modify, Make) and (Use-Modify-Create). These frameworks are based on research and ensure that differentiation can be built in at various stages of the lesson.	**Read and explore code first** When teaching programming, focus first on code 'reading' activities, before code writing. With both block-based and text-based programming, encourage pupils to review and interpret blocks of code. Research has shown that being able to read, trace, and explain code augments pupils' ability to write code.

Impact

By the time our pupils leave us in Year 6, they will:

- Understand what a computer is, and how to use one effectively.
- Understand how networks can be used to retrieve and share information.
- Comprehend, analyse and evaluate algorithms.
- Analyse a problem and design algorithms in order to solve it.
- Select, adapt and create a range of media including text, images, sounds, and video.
- Understand risks when using technology, and how to protect themselves in their everyday life.
- Be responsible, competent, confident and creative users of digital technology.

Formative assessment

Every lesson includes formative assessment opportunities for teachers to use and to ensure that misconceptions are recognised and addressed if they occur. The learning objective and success criteria are introduced in the slides at the beginning of every lesson. At the end of every lesson, pupils are invited to assess how well they feel they have met the learning objective which gives pupils a reminder of the content that has been covered, as well as a chance to reflect. It is also a chance for teachers to see how confident the class is feeling so that they can make changes to subsequent lessons accordingly.

Summative Assessment

In KS1, teachers will observe whether pupils are able to meet the success criteria for each lesson by the end of the unit and if so, they will be judged to be working at age-related expectations. In KS2, each unit ends with either a multiple choice quiz or a rubric which highlights to teachers whether the pupil is approaching (emerging), achieving (expected), or exceeding the expectations for their age group.

Our Curriculum

EYFS				
		Knowledge	**Skills**	**Key Vocabulary**
	Autumn **Awesome Autumn**	Children know about similarities and differences in relation to places, objects, materials and living things. Children can spot patterns in the environment. To know some vegetables that are grown in the UK. To know that some leaves change colour in the autumn.	Children talk about the patterns they can see in a sequence and continue a given pattern. Children spot mistakes in patterns and fix them. Children follow instructions involving several ideas or actions. They answer 'how' and 'why' questions about their experiences and in response to stories or events. Children cut up vegetables safely. To create a maze and plan a path through it. To print repeating patterns. To cut paper.	autumn leaf path maze pumpkin soup ingredients recipe repeat pattern
		Computational Thinking areas covered for Future Learning: Patterns Logic Decomposition Creating Collaborating Algorithms	**British Value/ SMSC:** **Spiritual: enjoy learning about oneself and the surrounding world** **Use imagination and creativity** **Individual Liberty:** Children are empowered to make choices and voice their views.	**Education for a Connected World (Online Safety):** **Meet the Digital Citizens - Arms** **Meet the Digital Citizens - Legs**
		Knowledge	**Skills**	**Vocabulary**
	Spring **Winter Warmers**	Children know about similarities and differences in relation to places, objects, materials and living things. Children know that some environments around the world are cold and need different clothing and shelter.	Children create their own designs that follow a repeating pattern. Talk about what is the same and what is different. Represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role-play and stories. To test out different materials, ways of stacking and joining them. To decompose a task into smaller, more manageable parts.	build stack join plan instruction first next
		Computational Thinking areas covered for Future Learning: Persevering	**British Value/ SMSC:** **Social responsibility**	**Education for a Connected World (Online Safety):**

		Tinkering Decomposition Collaborating Creating Algorithms	**The Rule of Law:** We understand that rules are to keep others and ourselves safe	**Meet the Digital Citizens - Heart** **Meet the Digital Citizens - Head**
		Knowledge	**Skills**	**Vocabulary**
	Summer **Springtime**	To know the seasons of the year and why we plant or harvest at set times of the year. To know how to care for plants or flowers. To know the directions forwards, backwards, left and right to describe position.	Collaborate with others to solve a problem To give and follow instructions for everyday tasks. Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories. Follow instructions involving several ideas or actions. They make observations of animals and plants and explain why some things occur, and talk about changes.	seed scarecrow turn left, right, forwards, back map road
		Computational Thinking areas covered for Future Learning: Decomposition Persevering Algorithms Collaborating Creating Tinkering Abstraction	**British Value/ SMSC:** **Social: Use a range of social skills** **Tolerance** **Mutual Respect** We can work together and respect each others' ideas.	**Education for a Connected World (Online Safety):** **Meet the Digital Citizens - Guts** **Meet the Digital Citizens - Feet**
Year 1				
	Computing Systems and Networks: **Technology around us**	**Knowledge**	**Skills**	**Key Vocabulary (See Appendix 2)**
	Autumn 1 Recognising technology in school	To identify technology To identify a computer and its main parts	To use a mouse in different ways To use a keyboard to type on a computer To use the keyboard to edit text To create rules for using technology responsibly	computer information technology mouse keyboard

	and using it responsibly.			text
	Prior Learning: Use of IWB, tablets and other technology in FS and at home.	Future Learning: Y2 Information Technology around us Y3 Connecting Computers Y4 The Internet Y5 Systems and Searching Y6 Communication and Collaboration	**British Value/ SMSC:** Social responsibility **The Rule of Law:** We understand that rules are to keep others and ourselves safe	**Education for a Connected World (Online Safety):** Health, well-being and lifestyle Self Image and identity Managing Online Information Pause for People
	Creating Media: **Digital painting**	**Knowledge**	**Skills**	**Key Vocabulary**
	Autumn 2 Choosing appropriate tools in a program to create art, and making comparisons with working non-digitally.	To describe what different freehand tools do To explain why I chose the tools I used To compare painting a picture on a computer and on paper	To use the shape tool and the line tools To make careful choices when painting a digital picture To use a computer on my own to paint a picture	program tool digital mouse choice
	Prior Learning: FS Experimenting with art materials (paint and drawing)	Future Learning: Y2 Digital Photography Y3 Desktop Publishing Y4 Photo Editing Y5 Vector Graphics Y6 3D Modelling	British Value/ SMSC: **Spiritual and cultural development** through creative expression and learning about artist's tools. **Mutual Respect:** We appreciate and understand the views of others, our right to challenge, question and discuss opinions and views, and to do this in a respectable and thoughtful way.	**Education for a Connected World (Online Safety):** Online Bullying Media Balance Is Important
	Programming: **Moving a robot**	**Knowledge**	**Skills**	**Vocabulary**
	Spring 1 Writing short algorithms and programs for floor robots, and	To explain what a given command will do	To combine forwards and backwards commands to make a sequence To combine four direction commands to make sequences To plan a simple program To find more than one solution to a problem	algorithm instruction code command debug direction

	predicting program outcomes.			forwards backwards turn left / right
	Prior Learning: FS "Summer fun" positional language and simple algorithms	Future Learning: Y1 Programming Animations Y2 Robot Algorithms Y2 Programming Quizzes Y3 Sequencing Sounds Y3 Events and Actions in Programs Y4 Repetition in Shapes Y4 Repetition in Games Y5 Selection in Physical Computing Y5 Selection in Quizzes Y6 Sensing Movement Y6 Variables in Games	British Value/ SMSC **Spiritual development** through perseverance, resilience and improving their algorithms. **The Rule of Law:** We understand that rules are to keep others and ourselves safe. We understand the importance of following clear instructions.	**Education for a Connected World (Online Safety):** Online Relationships Online Reputation Device Advice - Why We Pause for People
	Data and Information: **Grouping Data**	**Knowledge**	**Skills**	**Vocabulary**
	Spring 2 Exploring object labels, then using them to sort and group objects by properties.	To identify that objects can be counted To describe objects in different ways	To label objects To count objects with the same properties To compare groups of objects To answer questions about groups of objects	data information object count compare group property
	Prior Learning: FS Mathematical language of counting and grouping	Future Learning: Y2 Pictograms Y3 Branching Databases Y5 Flat-File Databases Y6 Spreadsheets	**British Value/ SMSC:** **Social development** working in pairs and groups. **Mutual Respect:** We appreciate and understand the views of others, our right to challenge, question and discuss opinions and views, and to do this in a respectable and thoughtful way.	**Education for a Connected World (Online Safety):** Managing Online Information Media Balance Is Important - Quick Bite
	Creating Media: **Digital Writing**	**Knowledge**	**Skills**	**Vocabulary**
	Summer 1 Using a computer to create and format	To identify that the look of text can be changed on a computer To explain why I used the tools that I chose	To use a computer to write To add and remove text on a computer To make careful choices when changing text	program type text

	text, before comparing to writing non-digitally.	To compare typing on a computer to writing on paper		select delete upper/ lower case
	Prior Learning: Y1 Technology Around Us Y1 Digital Painting	Future Learning: Y2 Digital Photography Y3 Desktop Publishing Y4 Photo Editing Y4 Audio Production Y5 Video Production Y5 Vector Graphics Y6 Webpage Creation Y6 Vector Graphics	**British Value/ SMSC** **Cultural Development:** communicating through typed text Individual Liberty: We learn how to use our right to freedom of speech in a respectable and thoughtful way, being considerate of how this speech or writing will affect others.	**Education for a Connected World (Online Safety):** Privacy and Security Safety in My Online Neighbourhood
	Programming: **Programming Animations**	**Knowledge**	**Skills**	**Vocabulary**
	Summer 2 Designing and programming the movement of a character on screen to tell stories.	To choose a command for a given purpose To explain that each sprite has its own instructions	To join a series of commands together To identify the effect of changing a value To design the parts of a project To use my algorithm to create a program in Scratch Jr	algorithm instruction code command debug program run
	Prior Learning: Y1 Moving a robot	Future Learning: Y2 Robot Algorithms Y2 Programming Quizzes Y3 Sequencing Sounds Y3 Events and Actions in Programs Y4 Repetition in Shapes Y4 Repetition in Games Y5 Selection in Physical Computing Y5 Selection in Quizzes Y6 Sensing Movement Y6 Variables in Games	**British Value/ SMSC:** **Spiritual development** through perseverance, resilience and improving their algorithms. The Rule of Law: We understand that rules are to keep others and ourselves safe. We understand the importance of following clear instructions.	**Education for a Connected World (Online Safety):** Device Advice - Caring for Our Devices
Year 2				

Computing Systems and Networks: **Information Technology around us**	**Knowledge**	**Skills**	**Key Vocabulary**
Autumn 1 Identifying IT and how its responsible use improves our world in school and beyond.	To recognise the uses and features of information technology To explain how information technology helps us To explain how to use information technology safely To recognise that choices are made when using information technology	To identify the uses of information technology in the school To identify information technology beyond school	computer information technology
Prior Learning: Y1 Technology Around us	Future Learning: Y3 Connecting Computers Y4 The Internet Y5 Systems and Searching Y6 Communication and Collaboration	**British Value/ SMSC:** **Moral development:** Considering the responsible choices we can make online. Democracy: we are learning to understand and be considerate to the views of other internet users. We understand that we are each part of the democracy of the internet and that we can each, in our own small way, affect the way the internet exists.	**Education for a Connected World (Online Safety):** Health, well-being and lifestyle How Technology Makes You Feel
Creating Media: **Making Music**	**Knowledge**	**Skills**	**Vocabulary**
Autumn 2 Using a computer as a tool to explore rhythms and melodies, before creating a musical composition.	To identify that there are patterns in music To show how music is made from a series of notes	To say how music can make us feel To create music for a purpose To review and refine our computer work	music adjective rhythm pattern pitch notes sequence
Prior Learning: Y1 Technology Around Us Y1 Digital Painting Y1 music	Future Learning: Y3 Desktop Publishing Y4 Photo Editing Y4 Audio Production Y5 Video Production Y5 Vector Graphics Y6 Vector Graphics	**British Value/ SMSC:** **Spiritual and cultural development** through creative expression and learning about artist's tools. **Mutual Respect/ Tolerance:** The children are given opportunities to critique each other's work in a positive and constructive manner whilst showing respect for the	**Education for a Connected World (Online Safety):** Online Bullying Pause for people

			opinions and beliefs of their peers which may differ from their own.	
	Creating Media: **Digital Photography**	**Knowledge**	**Skills**	**Key Vocabulary**
	Spring 1 Capturing and changing digital photographs for different purposes.	To describe what makes a good photograph To decide how photographs can be improved To recognise that photos can be changed	To use a digital device to take a photograph To make choices when taking a photograph To use tools to change an image	program tool digital photograph choice effect
	Prior Learning: Y1 Digital painting	Future Learning: Y3 Desktop Publishing Y4 Photo Editing Y4 Audio Production Y5 Video Production Y5 Vector Graphics Y6 3D Modelling	**British Value/ SMSC:** **Spiritual and Cultural:** Creating personal artistic expressions. **Mutual Respect/ Tolerance:** The children are given opportunities to critique each other's work in a positive and constructive manner whilst showing respect for the opinions and beliefs of their peers which may differ from their own.	**Education for a Connected World (Online Safety):** Online Relationships Online Reputation Device Advice - Our Device Charter
	Programming: **Robot Algorithms**	**Knowledge**	**Skills**	**Vocabulary**
	Spring 2 Creating and debugging programs, and using logical reasoning to make predictions.	To describe a series of instructions as a sequence To explain what happens when we change the order of instructions To explain that programming projects can have code and artwork	To use logical reasoning to predict the outcome of a program (series of commands) To design an algorithm for a BeeBot To create and debug a program that I have written	algorithm instruction code command debug direction forwards backwards turn left / right
	Prior Learning: Y1 Programming Animations Y1 Moving a Robot	Future Learning: Y2 Programming Quizzes Y3 Sequencing Sounds Y3 Events and Actions in Programs Y4 Repetition in Shapes Y4 Repetition in Games	**British Value/ SMSC:** **Social Development:** Working in teams with roles and helping each other. The Rule of Law: We understand that rules are to keep others and ourselves safe. We understand the importance of following clear instructions.	**Education for a Connected World (Online Safety):** Managing Online Information Device Advice -

		Y5 Selection in Physical Computing Y5 Selection in Quizzes Y6 Sensing Movement Y6 Variables in Games		Managing Device Distractions
	Programming: **Programming Quizzes**	**Knowledge**	**Skills**	**Vocabulary**
	Summer 1 Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz.	To explain that a sequence of commands has a start To explain that a sequence of commands has an outcome	To create a program in Scratch Jr using a given design To change a given design To create a program using my own design To decide how my project can be improved	algorithm instruction code command debug program run
	Prior Learning: Y2 Robot Algorithms Y1 Programming Animations Y1 Moving a Robot	Future Learning: Y3 Sequencing Sounds Y3 Events and Actions in Programs Y4 Repetition in Shapes Y4 Repetition in Games Y5 Selection in Physical Computing Y5 Selection in Quizzes Y6 Sensing Movement Y6 Variables in Games	**British Value/ SMSC:** The Rule of Law: We understand that rules are to keep others and ourselves safe. We understand the importance of following clear instructions.	**Education for a Connected World (Online Safety):** Privacy and Security Internet Traffic Light
	Data and Information: **Pictograms**	**Knowledge**	**Skills**	**Vocabulary**
	Summer 2 Collecting data in tally charts and using attributes to organise and present data on a computer.	To recognise that we can count and compare objects using tally charts To recognise that objects can be represented as pictures To recognise that people can be described by attributes To explain that we can present information using a computer	To create a pictogram To select objects by attribute and make comparisons	data information object count compare group represent tally pictogram

	Prior Learning: Y1 Grouping Data	**Future Learning:** Y3 Branching Databases Y5 Flat-File Databases Y6 Spreadsheets	**British Value/ SMSC:** **Individual Liberty:** Children are given choices in how to investigate and present their work.	**Education for a Connected World (Online Safety):** Pause for People - Quick Bite
Year 3				
Computing Systems and Networks: **Connecting Computers**		**Knowledge**	**Skills**	**Key Vocabulary**
	Autumn 1 Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks.	To identify input and output devices To recognise how digital devices can change the way we work To explain how a computer network can be used to share information To recognise the physical components of a network	To explore how digital devices can be connected To explain how digital devices function	input output device digital network server switch hardware router
	Prior Learning: Y1 Technology Around us Y2 IT around us	**Future Learning:** Y4 The Internet Y5 Systems and Searching Y6 Communication and Collaboration	**British Value/ SMSC:** **Moral development:** Considering the responsible choices we can make online. Democracy: we are learning to understand and be considerate to the views of other internet users. We understand that we are each part of the democracy of the internet and that we can each, in our own small way, affect the way the internet exists.	**Education for a Connected World (Online Safety):** Device-Free Moments
	Programming: **Sequence in music**	**Knowledge**	**Skills**	**Key Vocabulary**
	Autumn 2 Creating sequences in a block-based programming language to make music.	To identify that commands have an outcome To explain that a program has a start To recognise that a sequence of commands can have an order	To explore a new programming environment (Scratch) To change the appearance of my project To create a project from a task description	command control sequence note algorithm code debug

				program run
	Prior Learning: Y3 Sequencing Sounds Y2 Programming Quizzes Y2 Robot Algorithms Y1 Programming Animations Y1 Moving a Robot	**Future Learning:** Y4 Data Logging Y4 Repetition in Shapes Y4 Repetition in Games Y5 Selection in Physical Computing Y5 Selection in Quizzes Y6 Sensing Movement Y6 Variables in Games	**British Value/ SMSC:** **Social Development:** Working in teams with roles and helping each other. **The Rule of Law:** We understand that rules are to keep others and ourselves safe. We understand the importance of following clear instructions.	**Education for a Connected World (Online Safety):** Online Bullying **Putting a STOP to Online Meanness**
	Data and Information: **Branching databases**	**Knowledge**	**Skills**	**Vocabulary**
	Spring 1 Building and using branching databases to group objects using yes/no questions.	To identify the object attributes needed to collect relevant data To explain why it is helpful for a database to be well structured	To create questions with yes/no answers To create a branching database To identify objects using a branching database To compare the information shown in a pictogram with a branching database	data database object compare group property attribute classify
	Prior Learning: Y1 Grouping Data Y2 Pictograms	**Future Learning:** Y3 Branching Databases Y5 Flat-File Databases Y6 Spreadsheets	**British Value/ SMSC:** **Tolerance**: We understand that these are people from different communities, cultures, faiths and beliefs. We use the opportunities offered in computing to question, challenge and understand people with these different characteristics to support and develop our tolerance of them.	**Education for a Connected World (Online Safety):** Online Relationships Online Reputation **Who Is in Your Online Community?**
	Creating Media: **Desktop publishing**	**Knowledge**	**Skills**	**Vocabulary**
	Spring 2 Creating documents by modifying text, images, and page layouts for a specified purpose.	To recognise how text and images convey information To recognise that text and layout can be edited To consider the benefits of desktop publishing	To choose appropriate page settings To add content to a desktop publishing publication (Microsoft Word and PowerPoint) To consider how different layouts can suit different purposes	text images backspace shift desktop publishing template orientation

				placeholder
	Prior Learning: Y1 Digital Painting Y2 Digital Photography	**Future Learning:** Y3 Desktop Publishing Y4 Photo Editing Y5 Vector Graphics Y6 3D Modelling	**British Value/ SMSC:** **Spiritual and cultural development** through creative expression and learning about artist's tools. **Individual Liberty: We** learn how to use our right to freedom of speech in a respectable and thoughtful way, being considerate of how this speech or writing will affect others.	**Education for a Connected World (Online Safety):** Managing Online Information Copyright and Ownership **We the Digital Citizens** **Digital Trails**
	Programming: **Events and actions**	**Knowledge**	**Skills**	**Vocabulary**
	Summer 1 Writing algorithms and programs that use a range of events to trigger sequences of actions.	To explain how a sprite moves in different directions To know that an algorithm can use a range of events to trigger a sequence of actions	To create a program in Scratch to move a sprite in four directions To adapt a program to a new context To develop my program by adding features To identify and fix bugs in a program To design and create a maze-based challenge	command sequence algorithm code debug program run
	Prior Learning: Y3 Sequencing Sounds Y2 Programming Quizzes Y2 Robot Algorithms Y1 Programming Animations Y1 Moving a Robot	**Future Learning:** Y4 Data Logging Y4 Repetition in Shapes Y4 Repetition in Games Y5 Selection in Physical Computing Y5 Selection in Quizzes Y6 Sensing Movement Y6 Variables in Games	**British Value/ SMSC:** **Cultural:** Computational thinking encourages students to develop and explore their problem solving skills. **The Rule of Law:** We understand that rules are to keep others and ourselves safe. We understand the importance of following clear instructions.	**Education for a Connected World (Online Safety):** Privacy and Security **That's Private!**
	Creating Media: **Stop-frame Animation**	**Knowledge**	**Skills**	**Vocabulary**
	Summer 2 Capturing and editing digital still images to produce a stop-frame animation that tells a story.	To know that animation is a sequence of drawings or photographs To know that a smaller change between frames results in smoother movement.	To plan an animation To identify the need to work consistently and carefully To review and improve an animation To evaluate the impact of adding other media to an animation	animate/animation sequence frame

	Prior Learning: Y1 Digital painting Y2 Digital Photography	**Future Learning:** Y4 Photo Editing Y4 Audio Production Y5 Video Production Y5 Vector Graphics Y6 3D Modelling	**British Value/ SMSC:** **Spiritual and Cultural:** Creating personal artistic expressions. **Spiritual and cultural development** through creative expression and learning about artist's tools.	**Education for a Connected World (Online Safety):** We the Digital Citizens
Year 4				
	Computing Systems and Networks: **The Internet**	**Knowledge**	**Skills**	**Key Vocabulary**
	Autumn 1 Recognising the internet as a network of networks including the WWW, and why we should evaluate online content.	To describe how networks physically connect to other networks To recognise how networked devices make up the internet To recognise how the content of the WWW is created by people	To outline how websites can be shared via the World Wide Web (WWW) To describe how content can be added and accessed on the World Wide Web (WWW) To evaluate the consequences of unreliable content	network server switch router
	Prior Learning: Y1 Technology Around us Y2 IT around us Y3 Connecting Computers	**Future Learning:** Y5 Systems and Searching Y6 Communication and Collaboration	**British Value/ SMSC:** **Moral development:** Considering the responsible choices we can make online. Democracy: we are learning to understand and be considerate to the views of other internet users. We understand that we are each part of the democracy of the internet and that we can each, in our own small way, affect the way the internet exists.	**Education for a Connected World (Online Safety):** Online Bullying Your Rings of Responsibility
	Creating Media: **Audio Production**	**Knowledge**	**Skills**	**Key Vocabulary**
	Autumn 2 Capturing and editing audio to produce a podcast, ensuring that copyright is considered.	To identify that sound can be digitally recorded To explain that a digital recording is stored as a file To explain that audio can be changed through editing	To use a digital device to record sound To show that different types of audio can be combined and played together To evaluate editing choices made	audio combine track edit recording podcast background

	Prior Learning: Y1 Digital painting Y2 Digital Photography Y3 Stop-frame Animation	**Future Learning:** Y4 Photo Editing Y5 Video Production Y5 Vector Graphics Y6 3D Modelling	**British Value/ SMSC:** **Cutural / spiritual** artistic expression Individual Liberty: We learn how to use our right to freedom of speech in a respectable and thoughtful way, being considerate of how this speech or writing will affect others.	**Education for a Connected World (Online Safety):** The Power of Words
	Programming: **Repetition in shapes**	**Knowledge**	**Skills**	**Vocabulary**
	Spring 1 Using a text-based programming language to explore count-controlled loops when drawing shapes.	To identify that accuracy in programming is important To explain what 'repeat' means	To create a program in a text-based language (LOGO) To modify a count-controlled loop to produce a given outcome To decompose a task into small steps To create a program that uses count-controlled loops to produce a given outcome	command sequence algorithm code debug loop count repeat
	Prior Learning: Y3 Events and Actions in Programs Y3 Sequencing Sounds Y2 Programming Quizzes Y1 Programming Animations	**Future Learning:** Y4 Repetition in Games Y5: Selection in Physical Computing Y5: Selection in Quizzes Y6: Variables in Games Y6: Sensing Movement	**British Value/ SMSC:** **Cultural:** Computational thinking encourages students to develop and explore their problem solving skills. The Rule of Law: We understand that rules are to keep others and ourselves safe. We understand the importance of following clear instructions.	**Education for a Connected World (Online Safety):** Online Relationships Online Reputation Our Digital Citizenship Pledge
	Data and Information: **Data logging**	**Knowledge**	**Skills**	**Vocabulary**
	Spring 2 Recognising how and why data is collected over time, before using dataloggers to carry out an investigation.	To explain that data gathered over time can be used to answer questions To explain that a data logger collects 'data points' from sensors over time	To use a digital device (data logger) to collect data automatically To use data collected over a long duration to find information To identify the data needed to answer questions To use collected data to answer questions	data sensor data point log graph duration
	Prior Learning: Y3 Events and Actions in Programs Y2 Programming Quizzes	**Future Learning:** Y5 Selection in Physical Computing Y6 Sensing Movement	**British Value/ SMSC:** **Mutual Respect/ Tolerance:** The children are given opportunities to critique each other's work in a positive and constructive manner whilst showing respect for the	**Education for a Connected World (Online Safety):** Is Seeing Believing?

	Y1 Programming Animations		opinions and beliefs of their peers which may differ from their own.	
	Creating Media: **Photo editing**	**Knowledge**	**Skills**	**Vocabulary**
	Summer 1 Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled.	To explain that digital images can be changed To describe how images can be changed for different uses To recognise that not all images are real	To change the composition of an image To make good choices when selecting different tools To evaluate how changes can improve an image	tool composition rotate crop clone combine retouch
	Prior Learning: Y1 Digital Painting Y2 Digital Photography Y3 Desktop Publishing Y4 Audio Production	Future Learning: Y5 Vector Graphics Y6 3D Modelling	**British Value/ SMSC:** **Spiritual and cultural development** through creative expression and learning about artist's tools. **Moral** development and discussion about he ethics of photograph manipulation. **Mutual Respect/ Tolerance:** The children are given opportunities to critique each other's work in a positive and constructive manner whilst showing respect for the opinions and beliefs of their peers which may differ from their own.	**Education for a Connected World (Online Safety):** Privacy and Security Password Power-Up
	Programming: **Repetition in games**	**Knowledge**	**Skills**	**Vocabulary**
	Summer 2 Using a block-based programming language to explore count-controlled and infinite loops when creating a game.	To explain that in programming there are infinite loops and count controlled loops	To develop the use of count-controlled loops in a different programming environment To develop a design that includes two or more loops which run at the same time To modify an infinite loop in a given program To design and create a project that includes repetition	command sequence algorithm code debug loop count-controlled infinite decomposition
	Prior Learning: Y4 Repetition in Shapes	Future Learning: Y5: Selection in Physical Computing Y5: Selection in Quizzes	**British Value/ SMSC:** **Social Development:** Working in teams with roles and helping each other.	**Education for a Connected World (Online Safety):**

	Y3 Events and Actions in Programs Y3 Sequencing Sounds Y2 Programming Quizzes Y1 Programming Animations	Y6: Variables in Games Y6: Sensing Movement	**The Rule of Law:** We understand that rules are to keep others and ourselves safe. We understand the importance of following clear instructions.	This Is Me
Year 5				
	Computing Systems and Networks: **Systems and Searching**	**Knowledge**	**Skills**	**Key Vocabulary**
	Autumn 1 Identifying and exploring how information is shared between digital systems.	To explain that computers can be connected together to form systems To recognise the role of computer systems in our lives To recognise how information is transferred over the internet To explain how sharing information online lets people in different places work together	To contribute to a shared project online To evaluate different ways of working together online	device digital network server switch hardware router data packet public/private
	Prior Learning: Y1 Technology Around us Y2 IT around us Y3 Connecting Computers Y4 The Internet	**Future Learning:** Y6 Communication and Collaboration	**British Value/ SMSC:** **Moral development:** Considering the responsible choices we can make online. **The Rule of Law:** we understand the use of rules on computers and the internet, such as when we are allowed to use social media and what we are allowed to post and share. We understand that rules are to keep others and ourselves safe and to help the internet to be an enjoyable and engaging place.	**Education for a Connected World (Online Safety):** Online Bullying My Media Choices
	Creating Media: **Video production**	**Knowledge**	**Skills**	**Key Vocabulary**
	Autumn 2	To explain what makes a video effective To identify digital devices that can record video	To capture video using a range of techniques To create a storyboard To consider the impact of the choices made when making and sharing a video	store retrieve export storyboard

	Planning, capturing, and editing video to produce a short film.	To identify that video can be improved through reshooting and editing		edit camera angle
	Prior Learning: Y1 Digital painting Y2 Digital Photography Y3 Stop-frame Animation Y4 Photo Editing	Future Learning: Y5 Vector Graphics Y6 3D Modelling	**British Value/ SMSC:** **Spiritual and cultural development** through creative expression and learning about artist's tools. **Mutual Respect:** we appreciate and understand the views of others, our right to challenge, question and discuss opinions and views, and to do this in a respectable and thoughtful way. We understand that as we are connected with the world while accessing the internet, we are exposed to the widest range of views, and we are learning to respect them.	**Education for a Connected World (Online Safety):** Online Bullying Be a Super Digital Citizen
	Programming: **Selection in physical computing**	**Knowledge**	**Skills**	**Vocabulary**
	Spring 1 Exploring conditions and selection using a programmable microcontroller	To explain that a loop can stop when a condition is met To explain that a loop can be used to repeatedly check whether a condition has been met	To control a simple circuit connected to a computer To write a program that includes count-controlled loops To design a physical project that includes selection To create a program that controls a physical computing project using a Crumble.	circuit count-controlled loop input output condition conditional loop statement flow algorithm debug
	Prior Learning: Y4 Data Logging Y4 Repetition in Games Y4 Repetition in Shapes Y3 Events and Actions in Programs Y3 Sequencing Sounds Y2 Programming Quizzes Y1 Programming Animations	Future Learning: Y5: Selection in Quizzes Y6: Variables in Games Y6: Sensing Movement	**British Value/ SMSC:** **Social Development:** Working in teams with roles and helping each other. **The Rule of Law:** We understand that rules are to keep others and ourselves safe. We understand the importance of following clear instructions.	**Education for a Connected World (Online Safety):** Online Relationships Online Reputation Keeping Games Fun and Friendly

	Data and Information: **Flat-file databases**	**Knowledge**	**Skills**	**Vocabulary**
	Spring 2 Using a database to order data and create charts to answer questions.	To compare paper and computer-based databases To outline how grouping and then sorting data allows us to answer questions To explain that tools can be used to select specific data To explain that computer programs can be used to compare data visually	To use a form to record information To apply my knowledge of a database to ask and answer real-world questions	form field record sort question value selection filter
	Prior Learning: Y1 Grouping Data Y2 Pictograms Y3 Branching Databases	Future Learning: Y6 Spreadsheets	**British Value/ SMSC:** **Cultural:** Computational thinking encourages students to develop and explore their problem solving skills. **Different faiths and beliefs:** we understand that we are connected to people across the whole world. We understand that these are people from different communities, cultures, faiths and beliefs.	**Education for a Connected World (Online Safety):** Managing Online Information Copyright/Ownership **A Creator's Rights and Responsibilities**
	Creating Media: **Vector graphics**	**Knowledge**	**Skills**	**Vocabulary**
	Summer 1 Creating images in a drawing program by using layers and groups of objects.	To identify that drawing tools can be used to produce different outcomes To recognise that vector drawings consist of layers	To create a vector drawing by combining shapes To use tools to achieve a desired effect To group objects to make them easier to work with To evaluate my vector drawing	vector duplicate rotate alignment layer group
	Prior Learning: Y1 Digital Painting Y2 Digital Photography Y3 Desktop Publishing Y4 Photo Editing	Future Learning: Y6 3D Modelling	**British Value/ SMSC:** **Spiritual and cultural development** through creative expression and learning about artist's tools. **Individual Liberty:** we understand how to use our right to freedom of speech in a respectable and thoughtful way, being considerate of how this speech will affect others. We understand the freedom the internet and computers offer us in discovering information and connecting us with the world.	**Education for a Connected World (Online Safety):** Privacy and Security **Private and Personal Information**

	Programming: **Selection in quizzes**	**Knowledge**	**Skills**	**Vocabulary**
	Summer 2 Exploring selection in programming to design and code an interactive quiz.	To explain how selection is used in computer programs To relate that a conditional statement connects a condition to an outcome To explain how selection directs the flow of a program	To design a program which uses selection To create a program which uses selection To evaluate my program	infinite loop condition conditional loop statement flow algorithm debug setup code
	Prior Learning: Y5 Selection in Physical Computing Y4 Repetition in Games Y4 Repetition in Shapes Y3 Events and Actions in Programs Y3 Sequencing Sounds Y2 Programming Quizzes Y1 Programming Animations	**Future Learning:** Y6: Variables in Games Y6: Sensing Movement	**British Value/ SMSC:** **Social Development:** Working in teams with roles and helping each other. **The Rule of Law:** We understand that rules are to keep others and ourselves safe. We understand the importance of following clear instructions.	**Education for a Connected World (Online Safety):** Our Online Tracks
Year 6				
	Computing Systems and Networks: **Communication and Collaboration**	**Knowledge**	**Skills**	**Key Vocabulary**
	Autumn 1 Recognising how the WWW can be used	To identify how to use a search engine To describe how search engines select results	To evaluate different methods of online communication	search engine web crawler index

	to communicate and be searched to find information.	To explain how search results are ranked To recognise why the order of results is important, and to whom To recognise how we communicate using technology		rank relevance
	Prior Learning: Y1 Technology Around us Y2 IT around us Y3 Connecting Computers Y4 The Internet Y5 Systems and Searching	Future Learning: KS3 Computing Curriculum	**British Value/ SMSC:** **Moral development:** Considering the responsible choices we can make online. **The Rule of Law**: we understand the use of rules on computers and the internet, such as when we are allowed to use social media and what we are allowed to post and share. We understand that rules are to keep others and ourselves safe and to help the internet to be an enjoyable and engaging place.	**Education for a Connected World (Online Safety):** Online Bullying Finding My Media Balance
	Creating Media: **Web page creation**	**Knowledge**	**Skills**	**Key Vocabulary**
	Autumn 2 Designing and creating webpages, giving consideration to copyright, aesthetics, and navigation.	To review an existing website and consider its structure To recognise the need to preview pages To outline the need for a navigation path To recognise the implications of linking to content owned by other people	To plan the features of a web page To consider the ownership and use of images (copyright)	media HTML feature layout copyright fair-use preview navigation path hyperlink
	Prior Learning: Y1 Digital painting Y2 Digital Photography Y3 Desktop Publishing Y4 Photo Editing Y5 Vector Graphics	Future Learning: KS3 Computing Curriculum	**British Value/ SMSC:** **Moral Development:** Considering the ethics of sharing on the internet and crediting those who produce work. **Different Beliefs:** we understand that we are connected to people across the whole world. We understand that these are people from different communities, cultures, faiths and beliefs. We use the opportunities offered in computing to question, challenge and understand people with these	**Education for a Connected World (Online Safety):** Is It Cyberbullying?

			different characteristics to support and develop our tolerance of them.	
	Programming: **Variables in games**	**Knowledge**	**Skills**	**Vocabulary**
	Spring 1 Exploring variables when designing and coding a game.	To define a 'variable' as something that is changeable To explain why a variable is used in a program	To choose how to improve a game by using variables To design a project that builds on a given example To use my design to create a project To evaluate my project	variable placeholder memory value algorithm debug
	Prior Learning: Y5 Selection in Quizzes Y5 Selection in Physical Computing Y4 Repetition in Games Y4 Repetition in Shapes Y3 Events and Actions in Programs Y3 Sequencing Sounds Y2 Programming Quizzes Y1 Programming Animations	Future Learning: Y6: Sensing Movement KS3 Curriculum	**British Value/ SMSC:** **Social Development:** Working in teams with roles and helping each other. **Rule of Law**	**Education for a Connected World (Online Safety):** Online Relationships Online Reputation Digital Friendships
	Data and Information: **Introduction to spreadsheets**	**Knowledge**	**Skills**	**Vocabulary**
	Spring 2 Answering questions by using spreadsheets to organise and calculate data.	To identify questions which can be answered using data To explain that objects can be described using data To explain that formulas can be used to produce calculated data	To apply formulae to data, including duplicating To create a spreadsheet to plan an event To choose suitable ways to present data	data spreadsheet cell format calculation formula input/output duplicate
	Prior Learning: Y1 Grouping Data Y2 Pictograms	Future Learning: KS3 Computing Curriculum	**British Value/ SMSC:**	**Education for a Connected World (Online Safety):**

	Y3 Branching Databases Y5 Flat-File Databases		**Cultural:** Computational thinking encourages students to develop and explore their problem solving skills. **Mutual Respect/ Tolerance:** The children are given opportunities to critique each other's work in a positive and constructive manner whilst showing respect for the opinions and beliefs of their peers which may differ from their own.	Managing Online Information Copyright and Ownership Reading News Online
	Creating Media: **3D Modelling**	**Knowledge**	**Skills**	**Vocabulary**
	Summer 1 Planning, developing, and evaluating 3D computer models of physical objects.	To compare working digitally with 2D and 3D graphics To identify that physical objects can be broken down into a collection of 3D shapes	To use a computer to create and manipulate three-dimensional (3D) digital objects To construct a digital 3D model of a physical object To design a digital model by combining 3D objects To develop and improve a digital 3D model	select model resize rotate position
	Prior Learning: Y1 Digital Painting Y2 Digital Photography Y3 Desktop Publishing Y4 Photo Editing Y5 Vector Graphics	Future Learning: KS3 Computing Curriculum	**British Value/ SMSC:** **Spiritual and cultural development** through creative expression and learning about artist's tools. **Mutual Respect/ Tolerance:** The children are given opportunities to critique each other's work in a positive and constructive manner whilst showing respect for the opinions and beliefs of their peers which may differ from their own.	**Education for a Connected World (Online Safety):** Privacy and Security You Won't Believe This!
	Programming: **Sensing movement**	**Knowledge**	**Skills**	**Vocabulary**
	Summer 2 Designing and coding a project that captures inputs from a physical device.	To explain that selection can control the flow of a program	To create a program to run on a controllable device (Micro:Bit) To update a variable with a user input To use a conditional statement to compare a variable to a value To design a project that uses inputs and outputs on a controllable device To develop a program to use inputs and outputs on a controllable device	emulator condition variable flow statement selection physical input sensor operand

	Prior Learning: Y5 Selection in Physical Computing Y4 Data Logging Y3 Events and Actions in Programs Y2 Programming Quizzes Y1 Programming Animations	Future Learning: KS3 Computing Curriculum	**British Value/ SMSC:** **Social Development:** Working in teams with roles and helping each other. **The Rule of Law:** We understand that rules are to keep others and ourselves safe. We understand the importance of following clear instructions.	**Education for a Connected World (Online Safety):** **Beyond Gender Stereotypes**

Appendix 1: National Curriculum coverage in each unit

Creating Media	Data and Information
Programming	Computing Systems and Networks

Foundation Stage	Awesome Autumn	Winter Warmers	Springtime
Early Learning Goal and Development Matters links	ELG: Building Relationships ■ Work and play cooperatively and take turns with others; ELG: Creating with Materials ■ Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function; ELG: Fine Motor Skills ■ Use a range of small tools, including scissors, paint brushes and cutlery; ELG: Gross Motor Skills ■ Negotiate space and obstacles safely, with consideration for themselves and others;	Let's Make an Igloo: ELG: Building Relationships ■ Work and play cooperatively and take turns with others; ELG: Fine Motor Skills ■ Use a range of small tools, including scissors, paint brushes and cutlery; ELG: The Natural World ■ Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. Understanding the world	Junk Scarecrows ELG: The Natural World ■ Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. ELG: Creating with Materials ■ Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function; ■ Share their creations, explaining the process they have used; Understanding the world

	ELG: Managing Self ■ Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices Active Learning ■ Respond to new experiences that you bring to their attention Creating and thinking critically ■ Review their progress as they try to achieve a goal. Check how well they are doing. Understanding the world ■ 3 and 4 year olds – Begin to understand the need to respect and care for the natural environment and all living things. ■ Reception – Understand the effect of changing seasons on the natural world around them. Mathematics 3 and 4 year olds ■ Discuss routes and locations, using words like 'in front of' and 'behind'. ■ Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...' ■ Talk about and identify the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Extend and create ABAB patterns – stick, leaf, stick, leaf. Notice and correct an error in a repeating pattern. Reception – Continue, copy and create repeating patterns. Make patterns with varying rules (including AB, ABB and ABBC) and objects and invite children to continue the pattern. Playing and exploring Make independent choices. Do things independently that they have been previously taught. Respond to new experiences that you bring to their attention.	■ 3 and 4 year olds – Begin to understand the need to respect and care for the natural environment and all living things. ■ Reception – Recognise some environments that are different to the one in which they live. Expressive arts and design ■ 3 and 4 year olds – Join different materials and explore different textures. Scarves for Snowmen ELG: Speaking ■ Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary; ELG: Creating with Materials ■ Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function; Active Learning ■ Respond to new experiences that you bring to their attention Creating and thinking critically ■ Review their progress as they try to achieve a goal. Check how well they are doing Mathematics 3 and 4 year olds – Talk about and identify the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Extend and create ABAB patterns – stick, leaf, stick, leaf. Notice and correct an error in a repeating pattern. Reception – Continue, copy and create repeating patterns. Make patterns with varying rules (including AB, ABB and ABBC) and objects and invite children to continue the pattern.	■ 3 and 4 year olds – Plant seeds and care for growing plants. Begin to understand the need to respect and care for the natural environment and all living things. ■ Reception – Understand the effect of changing seasons on the natural world around them. Explore the natural world around them. Expressive arts and design ■ 3 and 4 year olds – Join different materials and explore different textures. ■ Reception – Create collaboratively, sharing ideas, resources and skills. Rabbit Run ELG: Building Relationships ■ Work and play cooperatively and take turns with others; Active Learning ■ Respond to new experiences that you bring to their attention Creating and thinking critically ■ Review their progress as they try to achieve a goal. Check how well they are doing. Mathematics 3 and 4 year olds – Discuss routes and locations, using words like 'in front of' and 'behind'. Begin to describe a sequence of events, real or fictional, using words such as 'first', 'then...' Seed Sequencing ELG: Building Relationships ■ Work and play cooperatively and take turns with others; ELG: The Natural World ■ Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter. Understanding the world ■ 3 and 4 year olds – Plant seeds and care for growing plants. Begin to understand the need to respect and care for the natural environment and all living things.

					■ Reception – Understand the effect of changing seasons on the natural world around them. Explore the natural world around them.	
	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 1	Technology around us	Digital painting	Moving a robot	Grouping Data	Digital Writing	Programming Animations
National Curriculum Objectives met in this unit:	use technology purposefully to create, organise, store, manipulate and retrieve digital content recognise common uses of information technology beyond school 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.	use technology purposefully to create, organise, store, manipulate and retrieve digital content KS1 Art and Design NC: To develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form, and space Learn about the work of a range of artists, craft makers, and designers, describing the differences and similarities between different practices and disciplines and making links to their own work	understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions create and debug simple programs use logical reasoning to predict the behaviour of simple programs recognise common uses of information technology beyond school	use technology purposefully to create, organise, store, manipulate and retrieve digital content 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.	use technology purposefully to create, organise, store, manipulate and retrieve digital content 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.	understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions create and debug simple programs use logical reasoning to predict the behaviour of simple programs use technology purposefully to create, organise, store, manipulate and retrieve digital content

Year 2	Information Technology around us	Digital Photography	Pictograms	Robot Algorithms	Making Music	An Introduction to Quizzes
National Curriculum Objectives	use technology purposefully to create, organise, store, manipulate and retrieve digital content	use technology purposefully to create, organise, store, manipulate and retrieve digital content	Use technology purposefully to create, organise, store, manipulate and retrieve digital content Use technology safely and respectfully, keeping personal	understand what algorithms are; how they are implemented as programs on digital devices; and	use technology purposefully to create, organise, store, manipulate and retrieve digital content	understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by

met in this unit:	recognise common uses of information technology beyond school 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.	recognise common uses of information technology beyond school 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.	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. Y2 Maths NC interpret and construct simple pictograms, tally charts, block diagrams and simple tables Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity Ask and answer questions about totalling and comparing categorical data	that programs execute by following precise and unambiguous instructions create and debug simple programs use logical reasoning to predict the behaviour of simple programs use technology purposefully to create, organise, store, manipulate and retrieve digital content	Music NC links: Play tuned and untuned instruments musically Listen with concentration and understanding to a range of high-quality live and recorded music Experiment with, create, select, and combine sounds using the interrelated dimensions of music	following precise and unambiguous instructions create and debug simple programs use logical reasoning to predict the behaviour of simple programs

Year 3	Connecting Computers	Sequence in music	Stop-frame Animation	Branching databases	Desktop publishing	Events and actions
National Curriculum Objectives met in this unit:	use sequence, selection, and repetition in programs; work with variables and various forms of input and output 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 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	design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 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 **Music NC Links:** Pupils should develop an understanding of musical composition, organising and manipulating ideas within musical structures	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 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact **Further NC links:** **Literacy** Pupils should be taught to: draft and write by: in narratives, creating settings, characters and plot proof-read for spelling and punctuation errors **History** The Roman Empire and its impact on Britain	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 **Science NC links:** recognise that living things can be grouped in a variety of ways explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment	use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content 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	design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 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

Year 4	The Internet	Audio editing	Repetition in shapes	Data logging	Photo editing	Repetition in games
National Curriculum Objectives met in this unit:	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 use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content 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 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content 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 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact **Science NC Year 4** Sound: Find patterns between the volume of a sound and the strength of the vibrations that produced it Sound: Recognise that sounds get fainter as the distance from the sound source increases **English**	design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 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	use sequence, selection, and repetition in programs; work with variables and various forms of input and output 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 **Science NC Year 4** making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers Learn how to use new equipment, such as data loggers, appropriately. Collect data from their own observations and measurements, using notes, simple tables and standard units, and help to make decisions about how to record and analyse this data.	use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content 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 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs

		Writing – composition: Plan their writing by discussing and recording ideas Writing – draft and write by: In non-narrative material, using simple organisational devices Writing: Read aloud their own writing, to a group or the whole class, using appropriate intonation and controlling the tone and volume so that the meaning is clear				

Year 5	Sharing information	Video editing	Selection in physical computing	Flat-file databases	Vector drawing	Selection in quizzes
National Curriculum Objectives met in this unit:	design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output 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 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 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content 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 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 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 **Science NC link:** Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches, and buzzers **Design and Technology (Key stage 2)** Design: Generate, develop, model, and communicate their ideas	use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content 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	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	design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 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

			through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces, and computer-aided design Make : Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining, and finishing], accurately Select from and use a wider range of materials and components, including construction materials, textiles, and ingredients, according to their functional properties and aesthetic qualities Evaluate: Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work Technical knowledge: Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers, and motors] Apply their understanding of computing to program, monitor, and control their products			

Year 6	Communication (Search Engines)	Web page creation	Variables in games	Introduction to spreadsheets	3D Modelling	Sensing

National Curriculum Objectives met in this unit:	design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts 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 use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content 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 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content 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 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact **English NC Y6:** Writing composition: Identifying the audience for and purpose of the writing, selecting the appropriate form, and using other similar writing as models for their own.	design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 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	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 **NC maths links** Number – addition, subtraction, multiplication, and division: Solve problems involving addition, subtraction, multiplication, and division Statistics: Interpret and construct pie charts and line graphs, and use these to solve problems Calculate and interpret the mean as an average	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 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact **Art and design NC KS2** To improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials **Design and technology – KS2** Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design **Mathematics – KS2 (Y6)** Recognise, describe and build simple 3D shapes, including making nets	design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts use sequence, selection, and repetition in programs; work with variables and various forms of input and output use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 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

Appendix 2: Online Safety/ Digital Citizenship lessons National Curriculum Coverage

This appendix outlines how our half-termly digital citizenship lessons cover both the National Curriculum requirements and further requirements from the RSE statutory guidance, ECAW and KCSIE.

Education for a Connected World's strands align with **Common Sense Education's Digital Citizenship** strands:

Education for a Connected World	Common Sense Education
Self Image & Identity	Media Balance & Well-Being (Autumn 1)
Online Relationships	Relationships & Communication (Spring 1)
Online Reputation	Relationships & Communication (Spring 1)
Online Bullying	Cyberbullying, Digital Drama & Hate Speech (Autumn 2)
Managing Online Information	News & Media Literacy (Spring 2)
Health, Wellbeing and Lifestyle	Media Balance & Well-Being (Autumn 1)
Privacy and Security	Privacy & Security (Summer 1)
Copyright and ownership	News & Media Literacy (Spring 2)

National Curriculum in England: Computing Programmes of Study -- KS 1 & 2	**Key Stage 1 - Pupils should be taught to:** • use technology purposefully to create, organise, store, manipulate and retrieve digital content • recognise common uses of information technology beyond school • 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 **Key Stage 2 - Pupils should be taught to:** • 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 • use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

Relationships Education, Relationships and Sex Education (RSE) and Health Education	**Online Relationships - Pupils should know:** • that people sometimes behave differently online, including by pretending to be someone they are not. • that the same principles apply to online relationships as to face-to face relationships, including the importance of respect for others online even when we are anonymous. • the rules and principles for keeping safe online, how to recognise risks, harmful content and contact, and how to report them. • how to critically consider their online friendships and sources of information, including awareness of the risks associated with people they have never met. • how information and data is shared and used online. **Being Safe - Pupils should know:** • what sorts of boundaries are appropriate in friendships with peers and others (including in a digital context). • about the concept of privacy and the implications of it for both children and adults; including that it is not always right to keep secrets if they relate to being safe. • that each person's body belongs to them, and the differences between appropriate and inappropriate or unsafe physical, and other, contact. • how to respond safely and appropriately to adults they may encounter (in all contexts, including online) whom they do not know. • how to recognise and report feelings of being unsafe or feeling bad about any adult. • how to ask for advice or help for themselves or others, and to keep trying until they are heard. • how to report concerns or abuse, and the vocabulary and confidence needed to do so. • where to get advice (e.g. family, school and/or other sources). **Mental Well-Being - Pupils should know:** • that mental well-being is a normal part of daily life, in the same way as physical health. • that there is a normal range of emotions (e.g. happiness, sadness, anger, fear, surprise, nervousness) and scale of emotions that all humans experience in relation to different experiences and situations. • how to recognise and talk about their emotions, including having a varied vocabulary of words to use when talking about their own and others' feelings.

	● how to judge whether what they are feeling and how they are behaving is appropriate and proportionate. ● the benefits of physical exercise, time outdoors, community participation, voluntary and service-based activities, on mental well-being and happiness. ● simple self-care techniques, including the importance of rest, time spent with friends and family, and the benefits of hobbies and interests. ● isolation and loneliness can affect children and that it is very important for children to discuss their feelings with an adult and seek support. ● that bullying (including cyberbullying) has a negative and often lasting impact on mental well-being. ● where and how to seek support (including recognising the triggers for seeking support), including whom in school they should speak to if they are worried about their own or someone else's mental well-being or ability to control their emotions (including issues arising online). ● it is common for people to experience mental health issues. For many people who do, the problems can be resolved if the right support is made available, especially if accessed early enough. **Internet Safety and Harms - Pupils should know:** ● that for most people the internet is an integral part of life and has many benefits. ● about the benefits of rationing time spent online, the risks of excessive time spent on electronic devices, and the impact of positive and negative content online on their own and others' mental and physical well-being. ● how to consider the effect of their online actions on others and know how to recognise and display respectful behaviour online, and the importance of keeping personal information private. ● why social media, some computer games, and online gaming, for example, are age restricted. ● that the internet can also be a negative place where online abuse, trolling, bullying, and harassment can take place, which can have a negative impact on mental health. ● how to be a discerning consumer of information online, including understanding that information, such as that from search engines, is ranked, selected and targeted. ● where and how to report concerns and get support with issues online.

Keeping Children Safe in Education	• Governing bodies and proprietors should ensure that children are taught about safeguarding, including online safety. Schools should consider this as part of providing a broad and balanced curriculum. • This may include covering relevant issues through Relationships Education and Relationships and Sex Education (formerly known as Sex and Relationship Education), tutorials (in colleges) and/or where delivered, through Personal, Social, Health and Economic (PSHE) education. The government has made regulations that will make the subjects of Relationships Education (for all primary pupils) and Relationships and Sex Education (for all secondary pupils) and Health Education (for all pupils in state-funded schools) mandatory from September 2020. • Whilst it is essential that governing bodies and proprietors ensure that appropriate filters and monitoring systems are in place, they should be careful that "over blocking" does not lead to unreasonable restrictions as to what children can be taught with regard to online teaching and safeguarding.
Teaching Online Safety in School	• Guidance supporting schools to teach their pupils how to stay safe online, within new and existing school subjects.

Developed by Common Sense Media (UK) with Islington Schools, with thanks to Pip Bhol and Katy Potts.
For more information contact Jenna Khanna jkhanna@commonsense.org

Appendix 3: Glossary of Computing terms

Term	Key Stage	Definition
Algorithm	1&2	A precise set of ordered steps that can be followed by a human or a computer to achieve a task
Attribute (property)	1&2	A word or a phrase that can be used to describe an object such as its colour, size, or price
Browser	2	SEE: Web browser

Term	Key Stage	Definition
Code	1&2	The commands that a computer can run
Code snippet	1&2	A section of a program viewed in isolation
Command	1&2	A single instruction that can be used in a program to control a computer
Computer	1&2	A programmable machine that accepts and processes inputs and produces outputs
Computer network	2	A group of interconnected computing devices
Computer system	2	A combination of hardware and software that can have data input to it, which it then processes and outputs. It can be programmed to perform a variety of tasks
Condition	2	A statement that can be either True or False
Condition-controlled	2	SEE: Loop (condition-controlled)
Count-controlled loop	2	SEE: Loop (count-controlled)
Data	1&2	A letter, word, number etc. that has been collected for a purpose, but stored without context
Data set	2	A collection of related data

Term	Key Stage	Definition
Debugging	1&2	The process of finding and correcting errors in a program
Decompose	2	To break down a task into smaller, more achievable steps
Digital device	2	A computer or a device with a computer inside that has been programmed for a specific task
Domain name	2	The part of a website's URL that is user friendly and identifies that it is under the control of a particular person or organisation e.g. raspberrypi.org
Execute (run)	2	SEE: Run
Hardware	2	The physical parts of a computer system
HTML (HyperText	2	A standardised language used to define the structure of web pages
Hyperlink	2	(Also: link, weblink) Text or media that when clicked, takes the user to another specified location (URL)
Infinite loop	2	SEE: Loop (infinite)
Information	1&2	Data put into a context that provides meaning
Information technology	1	The study, use, and development of computer systems for storing, processing, retrieving, and sending information

Term	Key Stage	Definition
Input	2	Data that is sent to a program to be processed
Input device	2	A piece of hardware used to control, or send data to, a computer
Internet	2	The global system of interconnected computer networks
Loop	2	(Count-controlled, condition-controlled, or infinite) Commands that repeatedly run a defined section of code
Loop (condition-controlled)	2	A command that repeatedly runs a defined section of code until a condition is met
Loop (count-controlled)	2	A command that repeatedly runs a defined section of code a predefined number of times
Loop (infinite)	2	A command that repeatedly runs a defined section of code indefinitely
Network	2	SEE: Computer network
Object	1	Something that can be named and has other attributes (properties), which can be labelled
Object	2	Something that is uniquely identifiable and has attributes
Output	2	The result of data processed by a computer
Output device	2	A piece of hardware that is controlled by outputs from a computer

Term	Key Stage	Definition
Procedure	2	A named set of commands that can be called multiple times throughout a program. This type of subroutine does not return a value.
Process	2	A program, or part of a program, that is running on a computer
Program	1&2	A set of ordered **commands** that can be **run** by a **computer** to complete a task
Property (attribute)	1	A word or a phrase that can be used to describe an **object** such as its colour, size, or price
Repetition	2	Part of a **program** where one or more **commands** are **run** multiple times in a **loop**
Router	2	A device that manages the flow of data between **computer networks**
Run (execute)	1&2	To action the **commands** in a **program**
Selection	2	Part of a **program** where if a **condition** is met, then a set of **commands** is **run**
Server	2	A networked **computer** that manages, **stores,** and provides **data** such as files to other computers
Software	2	The **programs** used to control **computers** and perform specific tasks
Stored (data)	2	**Data** kept digitally so that it can be accessed by a computer

Term	Key Stage	Definition
Subroutine	2	A named sequence of **commands** designed to perform a specific task
Switch (network	2	A device that manages the flow of **data packets** within a **computer network**
Technology	1	The use of scientific knowledge for practical purposes
URL (Uniform Resource	2	The address of a file on the **internet**
Variable	2	A named piece of **data** (often a number or text) **stored** in a computer's memory, which can be accessed and changed by a **computer program**
Web	2	SEE: WWW (World Wide Web)
Web address	2	SEE: URL (Uniform Resource Locator)
Web browser	2	A **program** used to view, navigate, and interact with **web pages**
Web page	2	A **HTML** document viewed using a **web browser**
Website	2	A collection of interlinked **web pages**, stored under a single **domain**
WiFi	2	A technology that allows devices to wirelessly access a **network** and transfer **data**

Term	Key Stage	Definition
WAP (Wireless Access Point)	2	A network device that allows wireless computing devices to connect to a wired **network**
WWW (World Wide Web)	2	A service provided via **the internet** that allows access to **web pages** and other shared files