Computing curriculum
EYFS, KS1 and KS2

Pakeman Primary School

Computing curriculum
EYFS, KS1 and KS2

At Pakeman, we are a one and a half form entry school and therefore we have a Year A / Year B cycle of topics in nursery, KS1 and KS2 (this is not needed in 2-plus or reception). In EYFS, KS1 and KS2 we use the Islington Computing scheme of work.
For each Islington computing unit of work, children should be taught the **key knowledge**, **key skills** and **key vocabulary**. Please ensure that this information is fully covered in the series of lessons that you plan. As children move through the school, they will build on prior knowledge, skills and vocabulary.

Computing in EYFS:
While computing is not explicitly part of the EYFS framework, this stage is crucial for laying the groundwork for computational thinking—a key concept that runs through Years 1-6 as part of the National Curriculum. This progression of knowledge and skills combines insights from our experiences with the children and adapted elements from the Birth to 5 framework, where technology remains a key component. Children in reception also take part in a series of computing lessons to promote digital citizenship.

Contents

Computing Topic Map EYFS, KS1 and KS2 (Year A / Year B cycle)

The Islington Computing Scheme **units** of work are listed below for KS1 and KS2. In EYFS, we cover computing knowledge, skills and vocabulary through our **topics** and computing **mini-themes** and **computing-related opportunities**.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
2-Plus	**Topic: All About Me** **Computing-related opportunity 1: Technology we use at school and home**	**Topic: Nursery Rhymes** **Computing-related opportunity 2: Listening to music through technology**	**Topic: Favourite Stories** **Computing-related opportunity 3: Photos / Reading favourite stories**	**Topic: Transport** **Computing-related opportunity 4: Mechanical toys**	**Topic: Down at the Farm** **Computing-related opportunity 5: Mechanical toys**	**Topic: Under the Sea** **Computing-related opportunity 6: Transporting water**
Nursery (Year A)	**Topic: Marvellous Me** **Computing-related opportunity 1: Photos / Class Dojo**	**Topic: Building & Construction** **Computing-related opportunity 2: Technological construction toys**	**Topic: Making Music** **Computing-related opportunity 3: Recording and playing back music performances**	**Topic: Pirates** **Computing-related opportunity 4: Cause and effect materials (floating/sinking, boats, telescopes)**	**Topic: Shopping** **Computing-related opportunity 5: Toy tills and scanners / Visiting the shop**	**Topic: Pets** **Computing-related opportunity 6: Remote control toys / Bee-Bots**
Nursery (Year B)	**Topic: Marvellous Me** **Computing-related opportunity 1: Photos / Digital self-portrait drawings**	**Topic: Building & Construction** **Computing-related opportunity 2: Technological construction toys**	**Topic: Songs & Rhymes** **Computing-related opportunity 3: Recording and playing back music performances**	**Topic: Dinosaurs** **Computing-related opportunity 4: Recording and playing back small-world play scenes**	**Topic: People Who Help Us** **Computing-related opportunity 5: Emergency vehicles / Walkie-talkies**	**Topic: On Safari** **Computing-related opportunity 6: Remote control toys / Bee-Bots**
Reception	**Topic: Who Am I?** **Mini-theme 1: Communication between home and school via Class Dojo / Letter formation practice on a screen**	**Topic: Bears** **Mini-theme 2: Everywhere Bear – photos from home / Researching bear facts**	**Topic: What We Eat** **Mini-theme 3: Researching recipes / Finding out where our food comes from**	**Topic: Traditional Tales** **Mini-theme 4: Emails to and from the 3 Little Pigs / Filming story retellings**	**Topic: Spring** **Mini-theme 5: Photos on nature walks / Symmetrical drawing program - butterflies**	**Topic: Adventures** **Mini-theme 6: Online maps of local area and faraway places**
Year 1 and year 2 (Year A)	**Unit 1: Technology around us**	**Unit 2 (two half-terms): Digital painting and digital writing – busy things and JIT**		**Unit 3: Data – Busy things**	**Unit 4: Bee-Bots – Moving a floor robot**	**Unit 5: Busy things – early code**
Year 1 and year 2 (Year B)	**Unit 1: a) The different uses of computers b) My Busy things**	**Unit 2: Multimedia and Digital writing**	**Unit 3: Digital Photography**	**Unit 4: Data - Pictograms**	**Unit 5: JIT turtle – Robot algorithms**	**Unit 6: Scratch Jr – Sequencing Animations**

Year 3 and year 4 (Year A)	**Unit 1: Connecting computers**	**Unt 2: Creating media – Audio editing - Audacity**	**Unit 3: Google docs**	**Unit 4: Data and information – Branching database – J2Data**	**Unit 5: Code.org – coding**	**Unit 6: Sequencing with Scratch animation**
Year 3 and year 4 (Year B)	**Unit 1: Computing systems and networks – The internet**	**Unit 2: J2 Animate**	**Unit 3: Google slides**	**Unit 4: Data logging – using data loggers**	**Unit 5: Multiple scenes and dialogue**	**Unit 6: Repetition Scratch shapes**
Year 5 and year 6 (Year A)	**Unit 1: Computing systems and networks**	**Unit 2: Imovie – camera angles, frames and editing**	**Unit 3: Vector drawing – google drawings**	**Unit 4: Data and information – J2Databas**	**Unit 5: Selection in quizzes**	**Unit 6: Scratch – variables in games**
Year 5 and year 6 (Year B)	**Unit 1: History of computing**	**Unit 2: Creating web pages – Google sites**	**Unit 3: Creating media – 3D modelling tinkercard**	**Unit 4: Data and information – flat-file databases**	**Unit 5: Scratch – variables in games**	**Unit 6: Sensing – Microbit – step counter**

Pakeman Primary School
Computing curriculum – 2 Plus

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	**All About Me**	**Nursery Rhymes**	**Favourite Stories**	**Transport**	**Down at the Farm**	**Under the Sea**
Computing-related opportunities	Technology we use at school and home	Listening to music through technology	Photos Reading favourite stories	Mechanical toys	Mechanical toys	Transporting water
Key skills (overarching)	• Seek to acquire basic skills in turning on and operating some digital equipment • Operate mechanical toys, e.g., turn the knob on a wind-up toy or pull back on a friction car • Play with water to investigate "low technology" such as washing and cleaning • Use pipes, funnels and other tools to carry/transport water from one place to another					
Key knowledge (overarching)	• Recognise technology that is used at home and in school • Anticipate repeated sounds, sights and actions – e.g., when an adult demonstrates an action toy several times					
Key resources	**For independent use:** old keyboards, cameras, remote controls, mechanical toys, headphones, mobile phones, calculators **To be used with adult support:** iPad, camera, interactive whiteboard					
Key vocabulary (overarching)	*Computing vocabulary used during the academic year:* computer, iPad, mobile phone, light switch, washing machine, fridge, TV, remote control, toaster, kettle, microwave, button, flap, light, push, press, turn, switch					

Pakeman Primary School
Computing curriculum – Nursery
Year A

Year A	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	**Marvellous Me**	**Building & Construction**	**Making Music**	**Pirates**	**Shopping**	**Pets**
Computing-related opportunities	Photos Class Dojo	Technological construction toys	Recording and playing back music performances	Cause and effect materials (floating/sinking boats, telescope)	Toy tills and scanners Visiting the shop	Remote control toys Bee-Bots
Key skills (overarching)	• Show an interest in technological toys with knobs or pulleys, real objects such as cameras, and touchscreen devices such as mobile phones and tablets • Show skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements, or new images • Play with a range of materials to learn cause and effect, for example, make a string puppet using dowels and string to suspend the puppet					
Key knowledge (overarching)	• Know how to operate simple equipment, e.g., turn on a CD player, use a remote control, navigate touch-capable technology with support • Know that information can be retrieved from digital devices and the internet					
Key resources	**For independent use**: old keyboards, cameras, remote controls, mechanical toys, headphones, remote control toys, shopping till, mobile phones, calculators. **To be used with adult support:** iPad, camera, interactive whiteboard, Bee-Bot					
Key vocabulary (overarching)	*Computing vocabulary used during the academic year:* computer, iPad, mobile phone, light switch, washing machine, fridge, TV, remote control, toaster, kettle, microwave, Bee-Bot, shopping till, scanner, barcode, button, flap, light, push, press, turn, switch, record					

Pakeman Primary School
Computing curriculum – Nursery
Year B

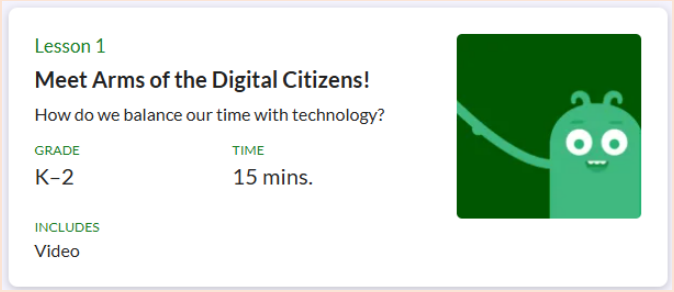
Year B	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	**Marvellous Me**	**Building & Construction**	**Songs & Rhymes**	**Dinosaurs**	**People Who Help Us**	**On Safari**
Computing-related opportunities	Photos Digital self-portrait drawings	Technological construction toys	Recording and playing back music performances	Recording and playing back small-world play scenes	Emergency vehicles Walkie-talkies	Remote control toys Bee-Bots
Key skills (overarching)	• Show an interest in technological toys with knobs or pulleys, real objects such as cameras, and touchscreen devices such as mobile phones and tablets • Show skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements, or new images • Play with a range of materials to learn cause and effect, for example, make a string puppet using dowels and string to suspend the puppet					
Key knowledge (overarching)	• Know how to operate simple equipment, e.g., turn on a CD player, use a remote control, navigate touch-capable technology with support • Know that information can be retrieved from digital devices and the internet					
Key resources	**For independent use**: old keyboards, cameras, remote controls, mechanical toys, headphones, remote control toys, walkie-talkies, mobile phones, calculators **To be used with adult support:** iPad, camera, interactive whiteboard, Bee-Bot					
Key vocabulary (overarching)	*Computing vocabulary used during the academic year:* computer, iPad, mobile phone, light switch, washing machine, fridge, TV, remote control, toaster, kettle, microwave, Bee-Bot, walkie-talkie, button, flap, light, push, press, turn, switch, record					

Pakeman Primary School
Computing curriculum – Reception

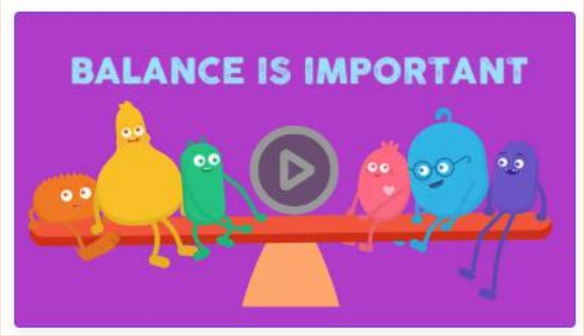
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	**Who Am I?**	**Bears**	**What We Eat**	**Traditional Tales**	**Spring**	**Adventures**
Computing-related mini themes	Communication between home and school via Class Dojo Letter formation practice on a screen	Everywhere Bear – photos from home Researching bear facts	Researching recipes Finding out where our food comes from	Emails to and from the 3 Little Pigs Filming story retellings	Photos on nature walks Symmetrical drawing program - butterflies	Online maps of local area and faraway places
Key skills (overarching)	• Complete a simple program on electronic devices • Use ICT hardware to interact with age-appropriate computer software • Create content such as a video recording, stories, and/or draw a picture on screen					
Key knowledge (overarching)	• Develop digital literacy skills by being able to access, understand and interact with a range of technologies • Use the internet with adult supervision to find and retrieve information of interest to themself • Know and talk about the different factors that support their overall health and well-being, including sensible amounts of 'screen time'					
Key resources	**For independent use**: old keyboards, laptop/screen, cameras, remote controls, mechanical toys, headphones, remote control toys, walkie-talkies, mobile phones, calculators **To be used with adult support:** iPad, camera, interactive whiteboard, Bee-Bot					
Key vocabulary (overarching)	*Computing vocabulary used during the academic year:* computer, iPad, mobile phone, light switch, washing machine, fridge, TV, remote control, toaster, kettle, microwave, Bee-Bot, walkie-talkie, internet, search, online, Wi-Fi, safety, button, flap, light, push, press, turn, switch, record					

Common Sense Education Lessons – Reception

Children in reception take part in a series of computing lessons to promote digital citizenship.

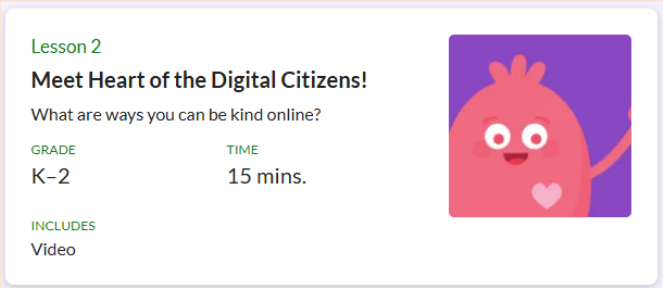
<table>
<tr><td rowspan="2">Autumn 1</td><td>Meet the Digital Citizen: Arms
 
</td><td>Lesson link:
Meet Arms of the Digital Citizens! | Common Sense Education

Objectives:
• Understand what media balance means.
• Reflect on how they balance their time with technology.

Vocabulary:
• Balance
• Device</td></tr>
<tr><td>Media Balance Is Important
 
</td><td>Lesson link:
Media Balance Is Important | Common Sense Education

Objectives:
• Know when and why to take breaks from device time.
• Consider the feelings of people around them, even when engaged in fun online activities.

Vocabulary:
• Balance
• Device</td></tr>
</table>

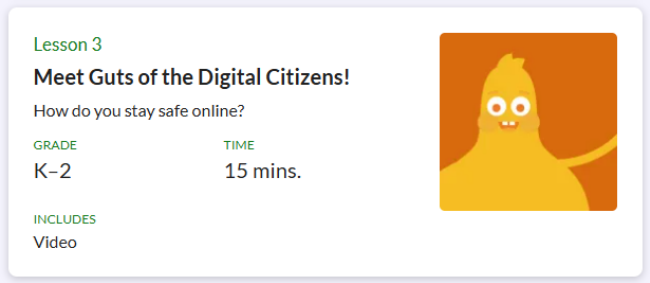
<table>
<tr><td rowspan="2"><u>Autumn 2</u></td><td><u>Meet the Digital Citizen: Heart</u>
 
</td><td>Lesson link:
Meet Heart of the Digital Citizens! | Common Sense Education

Objectives:
• Understand what it means to be respectful and kind to others.
• Reflect on how they can be kind online.

Vocabulary:
• Online
• Respect</td></tr>
<tr><td><u>Pause for People</u>
 
</td><td>Lesson link:
Pause for People | Common Sense Education

Objectives:
• Learn why it's important to be aware and respectful of people while using devices.
• Learn the Pause, Breathe, Finish Up routine as a self-regulation strategy for transitioning from technology to face-to-face interactions.

Vocabulary:
• Pause
• Device
• Frustrated</td></tr>
</table>

<table>
<tr>
<td rowspan="2"><u>Spring 1</u></td>
<td><u>Meet the Digital Citizen: Guts</u>
 
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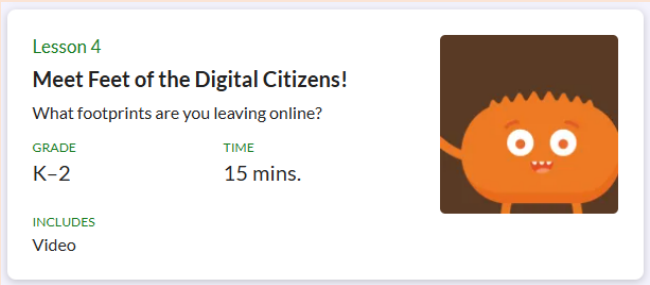
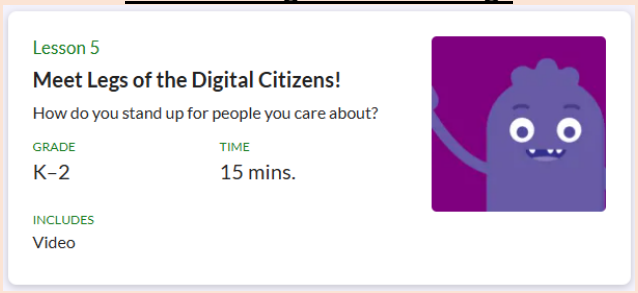
<td>Lesson link:
Meet Guts of the Digital Citizens! | Common Sense Education

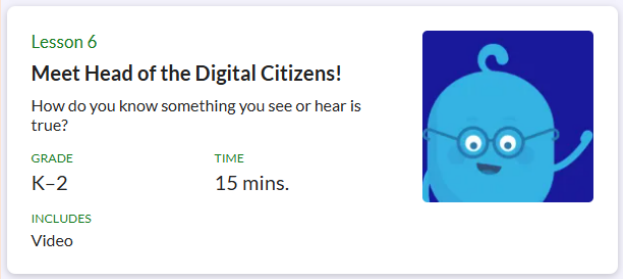
Objectives:
• Understand what being safe on the internet means.
• Reflect on ways to keep their passwords and information safe.

Vocabulary:
• Caution
• Internet</td>
</tr>
<tr>
<td><u>Safety in My Online Neighbourhood</u>
 
</td>
<td>Lesson link:
Safety in My Online Neighborhood | Common Sense Education

Objectives:
• Discover that the internet can be used to visit faraway places and learn new things.
• Compare how staying safe online is similar to staying safe in the real world.
• Explain rules for traveling safely on the internet.

Vocabulary:
• Online
• Website
• App</td>
</tr>
</table>

Spring 2	**Meet the Digital Citizen: Feet**  Lesson 4 Meet Feet of the Digital Citizens! What footprints are you leaving online? GRADE K–2 TIME 15 mins. INCLUDES Video	**Lesson link:** Meet Feet of the Digital Citizens! | Common Sense Education **Objectives:** • Understand what a digital footprint is. • Reflect on what and who they share with online. **Vocabulary:** • Digital footprint • Trail
Summer 1	**Meet the Digital Citizen: Legs**  Lesson 5 Meet Legs of the Digital Citizens! How do you stand up for people you care about? GRADE K–2 TIME 15 mins. INCLUDES Video	**Lesson link:** Meet Legs of the Digital Citizens! | Common Sense Education **Objectives:** • Understand what it means to be an upstander. • Reflect on ways to make others feel welcome. **Vocabulary:** • Community • Upstander

	Caring for Our Devices  	**Lesson link:** Caring for Our Devices | Common Sense Education **Objectives:** • Understand what it means to be responsible for something. • Identify ways to care for their device. **Vocabulary:** • Responsibility • Care
Summer 2	**Meet the Digital Citizen: Head**  	**Lesson link:** Meet Head of the Digital Citizens! | Common Sense Education **Objectives:** • Understand that not everything they see on the internet is true. • Reflect on ways to check if something they see online is true. **Vocabulary:** • News • Unbelievable

Pakeman Primary School
Computing curriculum - Year 1/2
Year A

Year A	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	**Toys**	**Heroes**	**Kings and Queens**	**Celebrations**	**Classroom adventures**	**Minibeasts**
Computing unit of work	**Unit 1: Technology around us**	**Unit 2: Digital painting and digital writing – busy things and JIT**		**Unit 3: Data – Busy things**	**Unit 4: Bee-Bots – Moving a floor robot**	**Unit 5: Busy things – early code**
Key skills (overarching)	**Digital Literacy** • Recognise the importance of using technology safely and respectfully • Keep personal information private and understand safe digital practices **Information Technology** • Use basic software to create, store, and share digital content • Understand how technology is used beyond school (e.g., at home or in the community) **Computer Science** • Understand basic algorithms and programming concepts • Create simple programs and debug basic errors					
Key knowledge (overarching)	• Understand that information can be presented digitally (e.g., text, images, sounds) • Know that computers follow instructions (algorithms) to complete tasks • Recognise the importance of staying safe when using technology • Understand that digital devices communicate through networks (e.g., the internet) • Know that algorithms must be precise and can solve simple problems • Recognise the difference between input and output in digital devices					
Key skills (topic specific)	Can identify examples of technology in the classroom.	Can log into Busy Things online using their own log in. Can move the cursor with a swiping action (finger) or moving the mouse.		Can group similar objects in more than one way.	Can explain what an algorithm is.	Code a sequence of instructions using basic online software

	Can name the main parts of a computer; Screen, keyboard, mouse, touch pad. Can switch on and log into a computer using the power button and their login details. Can identify rules to keep us safe when using technology by keeping personal information private.	Can use the mouse to click and drag Can locate and use the 'spacebar', 'shift', 'enter' and 'backspace' on a keyboard to carry out the required actions. Know which tool I need for colouring and can select it Know how to reset my canvas Know how to save my work Know how to type words with my keyboard Know how to type sentences with my keyboard Know how to retrieve my work after saving.	Can record how many objects are in a group Can compare groups of objects Can use Busy things to create picograms	Can spot errors and try to fix them. Can use controls to move a toy Use command symbols to write an algorithm Can program a Bee-Bot	Test my code by running the program Try to fix errors (debugging) Use drag and drop to move objects. Snap blocks together to code the algorithm
Key knowledge (topic specific)	I know that the computer, Interactive white board and the clock are all examples of technology in the classroom. I know that the power switch turns on and off the laptop/computer.	I know when I move the mouse, the curser of the screen moves in the same motion. I know if I press down the right button on the mouse, while my curser is on an object, the object will move wherever I move my mouse. I know when I unclick the right button, the object will then be still in its new position. I know if I click my mouse on different tool icons the curser changes to that tool. I know that if I click on the blue disc icon it saves my work.	I know I can group objects by their similarities, such as shape, colour and size. I also know that these objects may fit into more than one group e.g. a red square could go into a group for squares and red shapes.	I know that an algorithm is a set of detailed instructions which lead to an outcome. I know that when I press the arrow buttons, the robot will move in the same direction as the arrows.	I know that I can use my mouse to click on the arrow keys, this will move my object in the direction I have chosen. I know I can then click on a different arrow to change the direction of my object.

	I know I must keep my login details to myself.	I know if I click my mouse on the 'clear' icon my canvas will reset to blank.		I know there will be a different amount of objects in each group. I know that data is another word for information. I know that a 'data set' is a collection of related data.	I can draw arrows to show a route that I want the robot to follow. I know that this is an algorithm.	I know I can sequence a route for my object to follow by clicking different arrows. I know if I press 'run' my code will start and move my object according to my algorithm.
Key vocabulary (topic specific)	computer technology responsibly safe keyboard screen mouse power button laptop touch pad	cursor swipe click drag drop spacebar backspace enter return key delete	undo clear save font text page layout template word bank open file	object label group search image properties least value shape data	algorithm step instruction mistake error floor robot command turn mistake clear	sequence order code execute/run program forward turn debug predict block
Week 1	LO: To identify examples of technology in the classroom and how it helps us	LO: To switch on, log in and access online resources and work (DL)	LO: To add and remove text on a computer	LO: To label, describe and group objects in different ways	LO: To create rules for using technology responsibly	LO: To show that an algorithm is series of commands can be joined to achieve a given purpose
Week 2	LO: To identify a computer and its main parts	LO: To use the mouse/trackpad to move the cursor and interact with my computer (DL)	LO: To explain my choices when using tools and changing text	LO: To group and count objects with the same properties	LO: To explore and predict what robot commands will do	LO: To use logical reasoning to predict what the next step will do

Week 3	LO: To create rules for using technology responsibly	LO: To use the keyboard to interact with the computer and type	LO: To use a digital camera to take a picture	LO: To compare groups and answer questions about groups of objects	LO: To combine four direction commands to make sequences and predict their outcome	LO: To code a sequence of instructions using online software
Week 4	N/A	LO: To use online tools effectively to paint a picture	LO: To change digital images using filters	LO: To interpret a pictogram to compare groups and answer questions	LO: To read and write simple algorithms	LO: To run and test the code to fix errors
Week 5	N/A	LO: To use a computer to write	LO: To purposefully create an online document that combines pictures and text	LO: To collect, create and interpret data using a pictogram.	LO: To plan, code, test and debug a simple program	LO: To plan, code, test and debug algorithms for a program
Week 6	N/A	N/A	N/A	N/A	N/A	N/A

Pakeman Primary School
Computing curriculum - Year 1/2
Year B

Year B	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	**This is Me!**	**Animals**	**Explorers**	**The Circus**	**Inventions**	**Holidays**
Computing unit of work	**Unit 1: a) The different uses of computers b) My Busy things**	**Unit 2: Multimedia and Digital writing**	**Unit 3: Digital Photography**	**Unit 4: Data - Pictograms**	**Unit 5: JIT turtle – Robot algorithms**	**Unit 6: Scratch Jr – Sequencing Animations**
Key skills (overarching)	**Digital Literacy** • Recognise the importance of using technology safely and respectfully • Keep personal information private and understand safe digital practices **Information Technology** • Use basic software to create, store, and share digital content • Understand how technology is used beyond school (e.g., at home or in the community) **Computer Science** • Understand basic algorithms and programming concepts • Create simple programs and debug basic errors					
Key knowledge (overarching)	• Understand that information can be presented digitally (e.g., text, images, sounds) • Know that computers follow instructions (algorithms) to complete tasks • Recognise the importance of staying safe when using technology • Understand that digital devices communicate through networks (e.g., the internet) • Know that algorithms must be precise and can solve simple problems • Recognise the difference between input and output in digital devices					
Key skills (topic specific)	Can explain how to use information technology responsibly.	Can use the keys to type words and sentences	Can recognise different devices that can take a photograph	Can record data in a tally chart Can compare totals	Can give and follow instructions Can use words to give directions	Can use motion blocks to move a sprite

	Can use my log in to log into Busy things Can access my pinned activities Can save and retrieve my work from 'files'	Can select a writing template Can select a font colour and size Can save and retrieve work. I can click on a link to open a website. Can use the back arrow and scroll up and down to view information.	Explain the process of taking a photograph Can explain the difference between landscape and portrait Can talk about what is good/bad about a photograph and retake it to improve.	Can enter data onto a computer Can use picograms to answer simple questions about objects Can explain what the picogram shows	Can explain what an algorithm is. Can create an algorithm to make my object move Can debug my algorithm	Can predict and test what each block does Can begin a sequence using a green flag Can end a sequence with a red block Can select different backgrounds
Key knowledge (topic specific)	I know that I should not share my personal information online. I know my login is only for me and no one else has the same one. I know that when I login to mybusythings, I select 'My class pinned activities' to find the work I need to do.	I know that if I press on letters on the keyboard, they will appear on the screen. I know that the space bar creates a space between words. I know that if I press the backspace key, it will delete the typing. I know I can click on different sized 'a' icons and that will	I know that a camera, phone, ipad etc can take a photograph. Using an ipad, I know that the camera icon, opens a camera function. I know that when I point the ipad at an object, I can press the button and it will take a picture.	I know that a tally has five lines used to count objects. Four lines vertically and one line across. This equals five. I know that when I click on an object with my mouse, it adds to my pictogram. I know that if I click on the + it will increase the amount of objects.	I know that an algorithm is a set of detailed instructions which lead to an outcome. I know that if I give an instruction (go forward), my object will go in that direction. I know that if I select a sequence of instructions (an algorithm) with my mouse, my object will follow my instructions exactly.	I can click on arrow blocks with my mouse and my sprite will move in that direction (up, down, left and right). I know if I click a green flag block, it will start a sequence. I know I can use a red block to end a sequence. I know if I click on the backgrounds icon, I can use my

	If I click the blue disc icon it will save my work.	change the size of the text.		I know if I click on the – it will decrease the amount of objects.	I know a sprite is the name for the object that is being moved.	mouse to click the background I want.
Key vocabulary (topic specific)	information computer internet online safe pinned retrieve device messages log in	scroll back arrow bookmark browser shift button page layout template multimedia save	device camera capture image digital landscape portrait framing compose subject	more than less than organise tally chart data object votes total picogram	algorithm step sequence command debug mistake distance undo redo edit	tinkering project character blocks sprite commands motion programming background tools
Week 1	LO: To recognise the uses and features of information technology	LO: To identify information technology beyond school and in the home	LO: To recognise and use digital devices to take photographs	LO: To recognise that we count and compare objects using tally charts	LO: To describe a series of instructions as a sequence	LO: To explore how commands can be connected to create simple sequences
Week 2	LO: To identify information technology beyond school and in the home	LO: To use a bookmark or a link to access a web page and find information to answer questions	LO: To identify and make choices when taking a photograph	LO: To recognise that objects can be represented as pictures.	LO: To use logical reasoning to create and predict the outcome of a simple program (series of commands)	LO: To explain that a sequence of commands has an outcome
Week 3	LO: To access my Busy Things	LO: To save and retrieve what I create	LO: To describe what takes a good photograph	LO: To create a pictogram	LO: To design and create an algorithm for a program to solve a given task.	LO: To create an animation using a given design

Week 4	LO: To save and retrieve my work	LO: To purposefully select and use templates to format my work as an online document for a given task	LO: To recognise that photos can be changed (edited)	LO: To select objects by attribute and make comparisons	LO: To design and create an algorithm for a program to solve a given task.	LO: To design and create different parts of my animation
Week 5	LO: To respond to messages	LO: To review, refine and publish my work online	LO: To use my photography skills to create, improve and edit a collection of photographs/video	LO: To use the pictograms to help me make comparisons	LO: To evaluate and provide feedback on a program	LO: To design, create a program and test it to decide how it can be improved
Week 6	N/A	N/A	N/A	N/A	N/A	N/A

Pakeman Primary School
Computing curriculum - Year 3/4
Year A

Year A	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	**Stone Age to Iron Age**	**Journeys**	**Anglo Saxons**	**Mountains**	**Time-travellers**	**Rainforests**
Computing unit of work	**Unit 1: Connecting computers**	**Unt 2: Creating media – Audio editing - Audacity**	**Unit 3: Google docs**	**Unit 4: Data and information – Branching database – J2Data**	**Unit 5: Code.org – coding**	**Unit 6: Sequencing with Scratch animation**
Key skills (overarching)	**Digital Literacy** • Develop a deeper understanding of online safety, data security, and responsible online behaviour • Learn how to evaluate online content for trustworthiness and appropriateness **Information Technology** • Use digital tools to retrieve information, present content, and collaborate online • Understand how to responsibly use technology and its societal impact **Computer Science** • Design and write programs with logical structures, using repetition (loops) and selection (if statements) • Troubleshoot and debug programs to ensure correct operation					
Key knowledge (overarching)	• Understand how digital content is created, stored, and shared • Know that programs use sequences of instructions to complete tasks • Begin to understand how data is represented digitally (e.g., numbers, text, images) • Know that networks (e.g., the internet) consist of interconnected devices • Understand the role of search engines and how they retrieve information • Begin to understand basic concepts of hardware (e.g., input, processing, storage, and output)					
Key skills (topic specific)	Can identify input and output devices	Can use a device to record and playback sound	Can access google classroom using their log in	Can use a branching database to identify objects	Can drag and drop blocks of code	Can identify the sequence and that order is important

	Can follow a process Can model a simple process Can explain the role of a switch, server and wireless access point.	Can suggest how to improve their recording Can save a recording as a file Can edit sections of an audio recording	Can navigate the google classroom and to assignments Can respond to feedback and 'turn in' my work.	Can explain how a branching database works Can create a group of objects within an existing group Can explain why it is helpful for a database to be well structured.	Can translate movements into sequence algorithms Can run a program to test it Can solve coding puzzles using repetition	Can use an algorithm to code Can test the code and fix Can spot and use patterns in code
Key knowledge (topic specific)	I know that you need to input information into a device, the device then processes the information and that will come out as an output. I know a computer network is made up of a number of devices. I know a server can store things on a network, like videos and documents.	I know that a microphone records sound and is an input device. I know that headphones or speakers will play the sound. These are output devices. I know that I need to select 'save as' from the 'file' menu to save my work. I know I can select my waveform and press 'play' to hear my audio.	I can click the 'waffle' in the top right corner of google chrome to access google classroom. I know that when I enter my personal login details, it takes me to my personal google classroom. I know if I click on 'My assignments' I will be taken to the work my teacher has set for me. If I click 'turn in' my work will be sent to my teacher to check and mark.	I know I need to use closed questions for a branching database (Yes/no answers) I know that when I answer a question, I follow the answer branch to get to the next question. I know that similar things go in the same group for example all green shapes.	I know that when I right click with the mouse on a block of code, it will allow me to move it to another part of the screen. I know that each movement is represented by a block of code, for example forward makes the sprite move one place forward. I know the code blocks need to be attached in a column for them to work.	I know that the code blocks will work in the order I put them. I know that when I press 'run' the code will do what I have programmed it to do. I know if my sprite does not do what I wanted, then I need to fix my code.

Key vocabulary (topic specific)	digital device input output process operating system components switch server wireless files	audio microphone speaker headphones input device output device sound podcast trim align	word processor editor underline italics font highlight align tools insert paste menu	data branching database attribute sorting grouping object value similarities differences branch	commands blocks run/execute debug loops repeat patterns sequence persistence collaboration	algorithm sequence command parsons run test debug repetition pattern improve efficient
Week 1	LO: To explain how digital devices function	LO: To identify that sound can be digitally recorded	LO: To recognise and use Titles, text and layout effectively to convey information on Google Docs	LO: To create yes/no questions and use a branching database	LO: To explore a new programming environment and identify that each sprite is controlled by the commands chosen	LO: To plan and draw a program to draw a shape on screen
Week 2	LO: To explore and identify what parts make up a digital device	LO: To use a digital device to record sound	LO: To create and edit a fact file using titles, text and images	LO: To construct an offline (unplugged) simple branching database	LO: To recognise that a program has a start and a sequence of commands can have an order	LO: To use and modify a program to draw shapes
Week 3	LO: To explore how digital devices can be connected	LO: Creating and storing digital recordings as a file.	LO: To create and explain how different layouts or styles suit different audiences and purposes	LO: To construct an online (plugged) simple branching database using J2Branch	LO: To identify patterns and use loops to solve coding challenges	LO: To use count-controlled loops (repetition) to simplify my program
Week 4	LO: To recognise the physical components of a network	LO: To edit digital recordings to change audio	LO: To apply my multimedia and digital writing skills to create a document using G Suite (Cloud Publishing)	LO: To construct a branching database using J2Branch	LO: To use loops to simplify the code and to help me debug my code	LO: To design and create programs to draw shapes using count controlled loops (repetition)

Week 5	N/A	LO: To show that different types of audio can be combined and played together:	LO: Create your document - continued	LO: To construct a branching database	LO: To code, test and debug a project from a task description	LO: To compare different ways of coding
Week 6	N/A	N/A	N/A	N/A	N/A	N/A

Pakeman Primary School
Computing curriculum - Year 3/4
Year B

Year B	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	**Ancient Egypt**	**Energy and power**	**Romans**	**Active Planet**	**Chocolate**	**Europe**
Computing unit of work	**Unit 1: Computing systems and networks – The internet**	**Unit 2: J2 Animate**	**Unit 3: Google slides**	**Unit 4: Data logging – using data loggers**	**Unit 5: Multiple scenes and dialogue**	**Unit 6: Repetition Scratch shapes**
Key skills (overarching)	**Digital Literacy** • Develop a deeper understanding of online safety, data security, and responsible online behaviour • Learn how to evaluate online content for trustworthiness and appropriateness **Information Technology** • Use digital tools to retrieve information, present content, and collaborate online • Understand how to responsibly use technology and its societal impact **Computer Science** • Design and write programs with logical structures, using repetition (loops) and selection (if statements) • Troubleshoot and debug programs to ensure correct operation					
Key knowledge (overarching)	• Understand how digital content is created, stored, and shared • Know that programs use sequences of instructions to complete tasks • Begin to understand how data is represented digitally (e.g., numbers, text, images) • Know that networks (e.g., the internet) consist of interconnected devices • Understand the role of search engines and how they retrieve information • Begin to understand basic concepts of hardware (e.g., input, processing, storage, and output)					
Key skills (topic specific)	Can describe the internet as a network of networks.	Can use the mouse to move objects slightly.	Can change the background theme on Google slides.	Can use a data set to answer questions.	Can use given blocks to code a program.	Can write an algorithm to draw a square. Can spot and use patterns in code.

	Know how information is shared across the internet. Know how the internet allows us to view the world wide web.	Can discuss examples of stop animation in the real world. Know that animation is a sequence of drawings or photographs.	Can create new slides and change the layout. Can upload an image from the computer to add to the slides. Can create a transition between slides.	Can explain that sensors are input devices. Can identify a suitable place to collect data. Can import a data set. Can use a data logger to collect data.	Can use an algorithm to code. Can plan an algorithm for dialogue.	Can write an algorithm to draw a square using loops. Can use loops to draw shapes.
Key knowledge (topic specific)	I know the internet is a global network of computers. I know a server is a computer that manages the network and stores files. A device that passes information between two computer networks	I know that animation is a sequence of drawings or photographs. I know that I need to make slight changes to each frame to make my animal move. I know that Wallace and Gromit is an example of a stop frame animation.	I know that if I click 'Backgrounds' I can select a colour or picture for the background of my slides. I know that the 'Insert' menu gives me options to add to my slides, for example text, shapes, pictures. I know that if I save a picture as a file on my computer, I can use the 'upload' function to put it on my slides.	I know that you can use a data set to answer questions. I know that sensors are input devices. I know that I need to plug in the microbit to my computer for it to receive the data.	I know that an Algorithm is a clear set of step-by-step instructions which a computer can use to solve a problem. I know that code is a set of instructions written in a specific language to tell a computer what to do.	I know that the order of my instructions is important. I know that I can repeat code to make a pattern. I know that a repeated code is called a loop.

Key vocabulary (topic specific)	internet network router network security server WAP (wireless access point) website browser web page routing	stop motion animation frame background image animate onion skin speed improve test	slide layout background word art bold insert format copyright resize paste	data table layout input device sensor data logger logging interval data point analyse	algorithm code sequence multiple concurrent Parsons sprites stage design effect	algorithm sequence command distance direction explain prediction modify pattern repetition
Week 1	LO: To describe how networks physically connect to other networks:	LO: To identify, modify and explain how to create stop motion animation	LO: To use themes, Slide Layout and Word Art within Google Slides	LO: To explain that data gathered over time can be used to answer questions	LO: To use my programming skills to predict, run, investigate and modify a parsons problem	LO: To plan and draw a program to draw a shape on screen
Week 2	LO: To recognise how networked devices make up the internet.	LO: To discuss and explain what makes a good stop motion animation	LO: To insert, edit and format images within Google Slides.	LO: To use a digital device to collect data automatically	LO: To plan, make, run and debug a program on Scratch	LO: To use and modify a program to draw shapes
Week 3	LO: To outline how websites can be shared via the World Wide Web	LO: To plan and create a stop motion animation	LO: To change composition, animate images and create slide transitions within Google Slides	LO: To explain that a data logger collects 'data points' from sensors over time	LO: To evaluate and improve my program by adding sound and Stage	LO: To use count-controlled loops (repetition) to simplify my program
Week 4	LO: To describe how content can be added	LO: To review and improve an animation	LO: To explore ways of presenting Google slides	LO: To use data collected over a long	LO: To decompose and plan a story	LO: To design and create programs to draw shapes using

	and accessed on the World Wide Web:			duration to find information	dialogue between two characters on Scratch	count-controlled loops (repetition)
Week 5	N/A	N/A	N/A	LO: To identify the data needed to answer questions	LO: To Make/create and discuss ways of improving an algorithm on Scratch	LO: To compare different ways of coding
Week 6	N/A	N/A	N/A	LO: To use collected data to answer questions	N/A	N/A

Pakeman Primary School
Computing curriculum - Year 5/6
Year A

Year A	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	**Ancient Greece**	**Weather and climate**	**Vikings**	**Antarctica**	**Windrush**	**Citizens of the World**
Computing unit of work	**Unit 1: Computing systems and networks**	**Unit 2: iMovie – camera angles, frames and editing**	**Unit 3: Vector drawing – google drawings**	**Unit 4: Data and information – J2Databas**	**Unit 5: Selection in quizzes**	**Unit 6: Scratch – variables in games**
Key skills (overarching)	**Digital Literacy** • Understand the long-term impact of digital footprints and online reputation • Recognise the importance of online privacy and security and know how to report concerns **Information Technology** • Create, analyse, and present data using a variety of software tools • Collaborate digitally using cloud-based tools, sharing and editing content effectively **Computer Science** • Design, implement, and refine complex programs, using algorithms, variables, loops, and conditionals • Apply logical reasoning to solve problems and debug programs					
Key knowledge (overarching)	• Understand how more complex algorithms (e.g., loops and conditionals) can solve problems • Know that data can be organised and analysed using digital tools (e.g., spreadsheets) • Understand the basics of computer networks, including servers and clients • Know how computer systems (hardware and software) work together to execute tasks • Understand the concept of binary and its role in representing data in computers • Recognise the ethical and environmental impacts of computing and technology use					
Key skills (topic specific)	Can complete a web search to find specific information	Can identify and name digital devices that record sound and video.	Can explain that vector drawings are made using shapes	Can explain how information can be recorded.	Can explain examples of everyday selection	Can identify variables in everyday situations

	Can refine a search to be more accurate Can explain why we need tools to find things online Can explain that search results are ordered.	Can locate and identify the working features of a digital device that can record video Can plan a video project using a story board Can list some of the features of an effective video	Can identify the main drawing tools and know what they do Know how to resize, rotate or move objects Know that they can layer objects to change the drawing	Can explain what a 'field' and a 'record' is in a database Can group information to answer questions	Can begin to code different types of selection Can explain what a variable is Can use an algorithm to code Can use two types of selection blocks	Can read sections of code and predict what it will do Can test my predictions by running a code Can make changes to a code to achieve specific results
Key knowledge (topic specific)	I know that a search engine is a program that finds webpages on the web. I know that if I input a key word or words, a search engine will use those to find what I have asked for. I know that a search will be more effective if I type in more information to search with.	I know that a camera function on a phone, iPad and computer can all record sound and video. I know that a recording in a silent room will produce the best sound on a video. I know that the 'zoom' function will make the frame smaller on a video.	I know that the 'shapes' menu will allow me to draw a shape I have chosen. I know that I can use the mouse to move or change the size of my shapes. I know that each shape creates a new layer to my drawing. I know they can be put 'on top' of each other.	I know information is called data and this can be any information that is collected. I know that a database has 'records' for each group of information. I know a 'field' in a database is a square in a record, which holds one piece of information.	I know I use the 'ask' block of code to input a question for my quiz. I know the 'answer' block will store answers in the code. I know a variable in code is a piece of information that can change depending on the situation. For example, with this unit, the answer to a question would be a variable.	I know a variable in 'real life' is something that can change. For example, the weather, the price of a bag of crisps, even your mood. I know that 'debug' means to fix anything which isn't working in my code. I know that I can change the blocks of code to get a different outcome.
Key vocabulary (topic specific)	search search engine index crawler	video audio camera panning	vector tools object toolbar	database information data record	selection condition action loop	variable PRIMM prediction test

	bot ranking ordering links algorithm content	close up storyboard preview technique angle shot	resize rotate duplicate layers reflection pixelated	field order sort search criteria value	conditional start conditional switch text input text output variable operator	run investigate make and modify forever sequence command
Week 1	LO: To identify how to use a search engine	LO: To identify and use digital devices to record video effectively	LO: To recognise and use drawing tools within Google Drawings	LO: To use a form to record information and create a paper-based database	LO: To role play and write conditional selection	LO: To explain and use everyday variables in algorithms
Week 2	LO: To describe how search engines select results	LO: To use a storyboard to plan a video	LO: To create a vector drawing by combining shapes	LO: To compare paper and computer-based databases	LO: To explore selection code	LO: To modify and make programmes including variables on Scratch
Week 3	LO: To explain how search results are ranked	LO: To capture video using a digital device	LO: To use tools, layers, and objects to achieve a desired effect when creating Vector Drawings	LO: To outline how grouping and then sorting data within a database allows us to answer questions	LO: To plan and create a Maths Quiz program	LO: To design a game program on Scratch which includes variables
Week 4	LO: To recognise why the order of results is important, and to whom	LO: To identify that video can be improved through reshooting and editing	LO: To independently design, create and evaluate a vector drawing	LO: To explain that tools can be used to select specific data within a database	LO: To finish coding and improve a Maths Quiz program	LO: To make (code) my games on Scratch including variables
Week 5	LO: To recognise how we communicate using technology	LO: To present, evaluate and discuss what makes an effective video	N/A	LO: To explain that computer programs can be used to compare data visually	LO: To evaluate and give feedback about a Maths Quiz Program	LO: To investigate and evaluate my variables in Scratch game
Week 6	N/A	N/A	N/A	LO: To apply my knowledge of a database to ask and answer real-world questions	N/A	N/A

Pakeman Primary School
Computing curriculum - Year 5/6
Year B

Year B	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	**World War 2**	**Marvellous Maps**	**London**	**South America**	**The Sikh Empire**	**Food and farming**
Computing unit of work	**Unit 1: History of computing**	**Unit 2: Creating web pages – Google sites**	**Unit 3: Creating media – 3D modelling tinkercard**	**Unit 4: Data and information – flat-file databases**	**Unit 5: Scratch – variables in games**	**Unit 6: Sensing – Microbit – step counter**
Key skills (overarching)	**Digital Literacy** • Understand the long-term impact of digital footprints and online reputation • Recognise the importance of online privacy and security and know how to report concerns **Information Technology** • Create, analyse, and present data using a variety of software tools • Collaborate digitally using cloud-based tools, sharing and editing content effectively **Computer Science** • Design, implement, and refine complex programs, using algorithms, variables, loops, and conditionals • Apply logical reasoning to solve problems and debug programs					
Key knowledge (overarching)	• Understand how more complex algorithms (e.g., loops and conditionals) can solve problems • Know that data can be organised and analysed using digital tools (e.g., spreadsheets) • Understand the basics of computer networks, including servers and clients • Know how computer systems (hardware and software) work together to execute tasks • Understand the concept of binary and its role in representing data in computers • Recognise the ethical and environmental impacts of computing and technology use					

Key skills (topic specific)	Can explain the implications of different technological advances on society at the time. Can solve code-cracking problems using a cypher Can explain who Alan Turing was and what he achieved	Can talk about the different types of media used on websites Can recognise the key features of a website Know that websites are written in HTML Know that I need permission to use someone else's things	Can recognise that you can work in 3D on a computer Can add 3D shapes to a project Can use the tools to resize and lower/lift 3D objects	Can enter data into a spreadsheet Can explain what an item of data is Can choose an appropriate format for a cell Can explain that changing inputs, changes outputs	Can identify variables in everyday situations Can read sections of code and predict what it will do Can test my predictions by running a code Can make changes to a code to achieve specific results	Can apply their knowledge of programming to a new environment Can transfer my program to a controllable device Can use a variable to affect the flow of a program
Key knowledge (topic specific)	I know that technology influences every bit of our lives. For example, phones, computers, interactive white boards, TVs. I know that a cypher is a code used to protect important information. I know that Alan Turing was an influential figure in World War 2 and built the Enigma machine.	I know that a website contains a title, subheadings, a navigation bar to find information, pictures/diagrams and hyperlinks to take you to other parts of the website. I know that a hyperlink is a short-cut to another part of the website. I know that websites are written in HTML, which stands for Hypertext Markup Language.	I know that I use the drag and drop on my mouse to add 3D objects from my shape panel to my workspace. I know that if I add another 3D shape, it will stack on top of the one before. I know that if I right click on the edge of my shape 3D, I can resize it bigger or smaller.	I know that information is called data. For example, how many km does each pupil travel to get to school? I know that each cell holds one piece of data. I know that I can format a cell, which means when I add data it will do a mathematical formula. For example, add the column of data together.	I know that a real-life variable is something that can change. For example, breakfast each day, the clothes we wear, the programs on the tv. I know that 'run' makes the code run through the instructions you have programmed. I know that if the sprite doesn't do what we expect, I need to investigate	I know that the micro:bit needs to be connected to my laptop with a USB cable to receive the code. I know that the input on a micro:bit is the code I program into it. I know that the action the micro:bit performs is the output.

					and 'check' the code.	
Key vocabulary (topic specific)	technology computer electronic calculator encryption decipher cipher code-cracking pioneer contribution	browser media logo layout purpose ownership permission fair use copyright HTML (Hypertext Markup Language)	select perspective view handles lift lower recolour rotate duplicate combine	data collecting table structure spreadsheet cell reference format formula cell reference	variable PRIMM prediction test run investigate make and modify forever sequence command	Micro:bit input output process USB trace selection condition random navigation
Week 1	LO: To explore how our lives interlinked with technology?	LO: To review an existing website and consider its structure	LO: To use a computer to create and manipulate three-dimensional (3D) digital objects	LO: To Create a data set in a spreadsheet	LO: To define, explain and use everyday variables	LO: To create a program to run on a controllable device
Week 2	LO: To understand the drive behind the development of computing during the war	LO: To plan the features of a web page	LO: To identify that digital 3D objects can be modified	LO: To build a data set in a spreadsheet	LO: To predict, run, investigate and modify variables within a program	LO: To explain that selection can control the flow of a program
Week 3	LO: To understand how the Enigma Code was Cracked?	LO: To consider the ownership and use of images (copyright)	LO: To recognise that objects can be combined in a 3D model	LO: To explain that formulas can be used to produce calculated data	LO: To plan (design) and make (code) an algorithm including multiple variables	LO: To update a variable with a user input
Week 4	LO: To explore and research the contributions by under-represented groups in the history of computing	LO: To recognise the need to preview pages	LO: To create a 3D model for a given purpose	LO: To apply formulas to data, including duplicating	LO: To plan (design) and make (code) an algorithm including multiple variables	LO: To use a conditional statement to compare a variable to a value

Week 5	LO: To understand how computers have changed over time	LO: To outline the need for a navigation path	LO: To plan my own 3D model	LO: To create a spreadsheet to plan an event	LO: To make, review and evaluate my game which includes multiple variables	LO: To design a project that uses inputs and outputs on a controllable device
Week 6	N/A	LO: To recognise the implications of linking to content owned by other people	LO: To create my own digital 3D model	LO: To choose suitable ways to present data	N/A	LO: To develop a program to use inputs and outputs on a controllable device