



## Computing 2023/24

### Curriculum Intent Statement

The national curriculum for computing aims to ensure that all pupils:

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

### ELGs related to Subject and Topics

#### Communication and Language

-Articulate their thoughts and ideas in well-formed sentences.

-Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen.

-**ELG:** Listening, Attention and Understanding> Listen attentively and respond to what they hear with relevant questions, comments and actions when being read to and during whole class discussions and small group interactions.

-**ELG:** Listening, Attention and Understanding> Make comments about what they have heard and ask questions to clarify their understanding.

-**ELG:** Speaking> Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary.

#### Personal, Social and Emotional Development

-**ELG:** Self-Regulation> Give focused attention to what the teacher says, responding appropriately even when engaged in activity, and show an ability to follow instructions involving several ideas or actions.

-**ELG:** Managing Self> Be confident to try new activities and show independence, resilience and perseverance in the face of challenge.

-**ELG:** Building Relationships> Work and play cooperatively and take turns with others.

#### Mathematics

-**ELG:** Numerical Patterns> Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity.

#### Literacy

-Spell words by identifying the sounds and then writing the sounds with letter/s.

-Write short sentences with known letter-sound correspondences using a capital and full stop.

#### Physical Development

-Develop their small motor skills so that they can use a range of tools competently, safely and confidently.

-Confidently and safely use a range of large and small apparatus indoors and outside, alone and in a group.

		Topic	Year 1	Topic	Year 2	
Autumn	HT1	Computing systems and Networks	<p><i>What children will learn:</i></p> <p>To know that "log in and log out" means to begin and end a connection with a computer.</p> <p>To know that a computer and mouse can be used to click, drag, fill and select and also add backgrounds, text, layers, shapes and clip art.</p> <p>To know that passwords are important for security.</p> <p>To know that when we create something on a computer it can be more easily saved and shared than a paper version.</p> <p>To know some of the simple graphic design features of a piece of online software.</p>	<p><i>What children will be able to do</i></p> <p>Use computers more purposefully</p> <p>Log in and navigate around a computer</p> <p>Drag, drop, click and control a cursor using a mouse</p> <p>Use software tools to create art on the computer</p>	<p>Computing systems and Networks 1</p> <p><i>What children will learn:</i></p> <p>To know the difference between a desktop and laptop computer.</p> <p>To know that people control technology.</p> <p>To know that buttons are a form of input that give a computer an instruction about what to do (output).</p> <p>To know that computers often work together.</p>	<p><i>What children will be able to do</i></p> <p>Name some computer peripherals and their function.</p> <p>Recognise that buttons cause effects.</p> <p>Explain that technology follows instructions.</p> <p>Recognise different forms of technology.</p> <p>Design an invention which includes inputs and outputs.</p> <p>Explain the role of computers in the world around them.</p>
	HT2	Programming 1	<p><i>What children will learn:</i></p> <p>To understand that an algorithm is when instructions are put in an exact order.</p> <p>To know that input devices get information into a computer and that output devices get information out of a computer.</p> <p>To understand that decomposition means breaking a problem into manageable chunks and that it is important in computing.</p> <p>To know that we call errors in an algorithm 'bugs' and fixing these 'debugging'.</p>	<p><i>What children will be able to do</i></p> <p>Explain what an algorithm is.</p> <p>Write clear algorithms.</p> <p>Follow an algorithm.</p> <p>Explain what inputs and outputs are.</p> <p>Create an achievable program.</p> <p>Decompose a design into steps.</p> <p>Identify bugs in an algorithm and how to fix them.</p>	<p>Programming 1</p> <p><i>What children will learn:</i></p> <p>To understand what machine learning is and how that enables computers to make predictions.</p> <p>To know that loops in programming are where you set a certain instruction (or instructions) to be repeated multiple times.</p> <p>To know that abstraction is the removing of unnecessary detail to help solve a problem.</p>	<p><i>What children will be able to do</i></p> <p>Decompose a game to predict the algorithms.</p> <p>Give a definition for 'decomposition'.</p> <p>Write clear and precise algorithms.</p> <p>Create algorithms to solve problems.</p> <p>Use loops in their algorithms to make their code more efficient.</p> <p>Explain what abstraction is.</p>
Spring	HT3	Skills Showcase	<p><i>What children will learn:</i></p> <p>To know that when we create something on a computer it can be more easily saved and shared than a paper version.</p> <p>To know some of the simple graphic design features of a piece of online software.</p> <p>To know that a spreadsheet is an electronic 'table' for sorting data.</p>	<p><i>What children will be able to do</i></p> <p>Use a computer to make a list</p> <p>Explain the benefits of making a list on the computer</p> <p>Use a basic range of tools on graphics editing software to design a rocket</p> <p>Sequence instructions</p> <p>Follow instructions to build their model rocket</p> <p>Input data about their rockets into a table or spreadsheet</p>	<p>Computing systems and Networks 2</p> <p><i>What children will learn:</i></p> <p>To know that touch typing is the fastest way to type.</p> <p>To know that I can make text a different style, size and colour.</p> <p>To know that "copy and paste" is a quick way of duplicating text.</p>	<p><i>What children will be able to do</i></p> <p>Explain which are the home row keys and how to find them for typing.</p> <p>Use the spacebar and backspace correctly.</p> <p>Type and make simple alterations to text using buttons on a word processor.</p> <p>Search for, import and alter appropriate images for a text document.</p> <p>Modify text in a document.</p> <p>Use copy and paste to copy text from one document to another.</p> <p>Explain what information is safe to be shared online.</p>

	HT4	Programming 2	<p><b>What children will learn:</b></p> <p>To understand the basic functions of a Bee-Bot.</p> <p>To know that you can use a camera/tablet to make simple videos.</p> <p>To know that algorithms move a bee-bot accurately to a chosen destination.</p>	<p><b>What children will be able to do</b></p> <p>Recognise cause and effect when pressing buttons on a Bee-Bot.</p> <p>Discuss and demonstrate how the Bee-Bot works.</p> <p>Record video ensuring everyone is in the shot.</p> <p>Give a a number of clear instructions in sequence.</p> <p>Program a Bee-Bot to reach a destination.</p> <p>Identify and correct mistakes in their programming.</p>	Programming 2	<p><b>What children will learn:</b></p> <p>To know that coding is writing in a special language so that the computer understands what to do.</p> <p>To understand that the character in ScratchJr is controlled by the programming blocks.</p> <p>To know that you can write a program to create a musical instrument or tell a joke.</p>	<p><b>What children will be able to do</b></p> <p>Explore a new application independently. Explain what the blocks on ScratchJr do and use them for a purpose.</p> <p>Recognise a loop in coding and why it is useful.</p> <p>Use a code to create an animation of an animal moving.</p> <p>Use code to follow <i>and</i> create an algorithm.</p> <p>Program code to run 'on tap'.</p> <p>Explain the role of the blocks in a program they have created.</p>
Summer	HT5	Creating Media	<p><b>What children will learn:</b></p> <p>To understand that holding the camera still and considering angles and light are important to take good pictures.</p> <p>To know that you can edit, crop and filter photographs.</p> <p>To know how to search safely for images online.</p>	<p><b>What children will be able to do</b></p> <p>Plan a pictorial story using photographic images in sequence.</p> <p>Explain how to take clear photos.</p> <p>Take photos using a device.</p> <p>Edit photos by cropping, filtering and resizing.</p> <p>Search for and import images from the internet.</p> <p>Explain what to do if something makes them uncomfortable online.</p> <p>Organise images on the page, orientating where necessary.</p>	Creating Media	<p><b>What children will learn:</b></p> <p>To understand that an animation is made up of a sequence of photographs.</p> <p>To know that small changes in my frames will create a smoother looking animation.</p> <p>To understand what software creates simple animations and some of its features e.g. onion skinning.</p>	<p><b>What children will be able to do</b></p> <p>Create a flip book animation.</p> <p>Decompose a story into smaller parts to plan a stop motion animation.</p> <p>Create stop motion animations with small changes between images.</p>
	HT6	Data Handling	<p><b>What children will learn:</b></p> <p>To know how that charts and pictograms can be created using a computer.</p> <p>To understand that a branching database is a way of classifying a group of objects.</p> <p>To know that computers understand different types of 'input'.</p>	<p><b>What children will be able to do</b></p> <p>Represent animal-themed data in different ways, using objects and technology.</p> <p>Log in and use mouse and keyboard skills to navigate the computer.</p> <p>Represent the same data as a pictogram and a table or chart.</p> <p>Collect data about minibeasts using a tally chart and represent their data digitally.</p> <p>Click and drag objects to sort data using a branching database.</p> <p>Consider the types of input that would be used to gather different forms of data when designing an invention.</p>	Data Handling	<p><b>What children will learn:</b></p> <p>To understand that you can enter simple data into a spreadsheet.</p> <p>To understand what steps you need to take to create an algorithm.</p> <p>To know what data to use to answer certain questions.</p> <p>To know that computers can be used to monitor supplies.</p>	<p><b>What children will be able to do</b></p> <p>Describe and explain how astronauts' survival needs are met aboard the ISS.</p> <p>Identify and digitally draw items which fulfil basic human needs when aboard the ISS.</p> <p>Read the correct temperature on a thermometer.</p> <p>Design a display showing everything that needs to be monitored by sensors on the ISS.</p> <p>Create an algorithm that addresses all plants' needs.</p> <p>Explain how space exploration can benefit life on Earth.</p> <p>Read data to identify whether a planet might be habitable.</p>

		Topic	Year 3	Topic	Year 4	
Autumn	HT1	Computing systems and Networks 1	<p><i>What children will learn:</i></p> <p>To know what a tablet is and how it is different from a laptop/desktop computer.</p> <p>To understand what a network is and how a school network might be organised.</p> <p>To know that a server is central to a network and responds to requests made.</p> <p>To know how the internet uses networks to share files.</p> <p>To know that a router connects us to the internet.</p> <p>To know what a packet is and why it is important for website data transfer.</p> <p>To know the roles that inputs and outputs play on computers.</p>	<p><i>What children will be able to do</i></p> <p>Recognise that a network is two or more devices connected.</p> <p>Explain how information moves around a network and the role of the server.</p> <p>Understand that networks connect to the internet via a router.</p> <p>Explain some of the journey a website goes through to reach your computer.</p> <p>Explain that websites are split into small pieces (packets) to be sent via the internet.</p>	<p>Computing systems and Networks</p> <p><i>What children will learn:</i></p> <p>To understand that software can be used collaboratively online to work as a team.</p> <p>To know what type of comments and suggestions on a collaborative document can be helpful.</p> <p>To know that you can use images, text, transitions and animation in presentation slides.</p>	<p><i>What children will be able to do</i></p> <p>Understand the need to be thoughtful when working on a collaborative document.</p> <p>Use comments to suggest changes to a document and understand how to resolve comments.</p> <p>Use a variety of different slide styles to convey information including images and transitions.</p> <p>Create a Google Form with a range of different questions types that will provide different types of answers, e.g. text, multiple choice or numerical values.</p> <p>Export data to a spreadsheet, highlighting data, using conditional formatting and calculating averages and sums of numbers.</p>
	HT2	Programming	<p><i>What children will learn:</i></p> <p>To know that Scratch is a programming language and some of its basic functions.</p> <p>To understand how to use loops to improve programming.</p> <p>To understand how decomposition is used in programming.</p> <p>To understand that you can remix and adapt existing code.</p>	<p><i>What children will be able to do</i></p> <p>Explain what some of the blocks do in Scratch.</p> <p>Explain what a loop is and include one in their program.</p> <p>Suggest possible additions to an existing program.</p> <p>Recognise where something on screen is controlled by code.</p> <p>Use a systematic approach to find bugs.</p> <p>Explain what an algorithm is and its purpose.</p>	<p>Programming 1</p> <p><i>What children will learn:</i></p> <p>To understand that a variable is a value that can change (depending on conditions) and know that you can create them in Scratch.</p> <p>To know what a conditional statement is in programming.</p> <p>To understand that variables can help you to create a quiz on Scratch.</p>	<p><i>What children will be able to do</i></p> <p>Understand how to create a simple script in Scratch – be able to change sprite and prevent the sprite from rotating.</p> <p>Use decomposition to identify key features and understand how to decipher actions that make the quiz game work.</p> <p>Understand what a variable is and how to use the ‘say’ and ‘ask’ blocks.</p> <p>Create a variable and be able to use a variable to record a score.</p> <p>Understand what a variable is and how it works within a program.</p>
Spring	HT3	Computing Systems and Networks 2	<p><i>What children will learn:</i></p> <p>To understand that email stands for ‘electronic mail.’</p> <p>To know that an attachment is an extra file added to an email.</p> <p>To understand that emails should contain appropriate and respectful content.</p>	<p><i>What children will be able to do</i></p> <p>Log in and out of email.</p> <p>Send a simple email with a subject plus ‘To’ and ‘From’ in the body of the text.</p> <p>Edit an email.</p> <p>Type in the email address correctly and send the email.</p> <p>Add an attachment to an email.</p>	<p>Creating Media</p> <p><i>What children will learn:</i></p> <p>To know some of the features of web design software.</p> <p>To know that a website is a collection of pages that are all connected.</p> <p>To know that websites usually have a homepage and subpages as well as clickable links to new pages, called hyperlinks.</p> <p>To know that websites should be informative and interactive.</p>	<p><i>What children will be able to do</i></p> <p>Use most of the tabs (e.g. insert, pages, themes) on Google Sites on their website.</p> <p>Create a clear plan for their web page and begin to create it.</p> <p>Create a professional looking web page with useful information and a clear style, which is easy for the user to read and find information from.</p>

			Write an email using positive language, with an awareness of how it will make the recipient feel. Recognise unkind behaviour online and know how to report it. Offer advice to victims of cyberbullying. Recognise when an email may be fake and explain how they know.			Create a clear plan by referring back to their checklist. Create four web pages with a range of features on their website.	
	HT4	<b>Computing Systems and Networks 3</b>	<i>What children will learn:</i> To know what some of the different components inside a computer are e.g. CPU, RAM, hard drive, and how they work together.	<i>What children will be able to do</i> Recognise inputs and outputs and that the computer sends and receives information. Explain that the parts of a laptop work together and the purpose of each part. Explain what an algorithm is. Suggest what memory is for inside a computer. Make comparisons between different types of computer.	<b>Skills Showcase</b>	<i>What children will learn:</i> To understand and identify examples of HTML tags. To understand what changing the HTML and CSS does to alter the appearance of an object on the web. To understand that copyright means that those images are protected and to understand that we should do a “creative commons” image search if we wish to use images from the internet. To know what “fake news” is and ways to spot websites that carry this type of misinformation. To know what the “inspect” elements tool is and ways of using it to explore and alter text and images.	<i>What children will be able to do</i> Add text between the heading and paragraph tags. Easily activate the goggles to investigate a web page. Explain how they altered the HTML to create their own posters. Change the colours and sizes of their object elements. Explain how they created their story. Adapt the basic elements of a story within a web page using the ‘Inspect Elements’ tool. Change an image within a web page and create their own news story, replacing the text and images of a webpage.
<b>Summer</b>	HT5	<b>Creating Media</b>	<i>What children will learn:</i> To know that different types of camera shots can make my photos or videos look more effective. To know that I can edit photos and videos using film editing software. To understand that I can add transitions and text to my video.	<i>What children will be able to do</i> Describe the purpose of a trailer. Create a storyboard for a book trailer. Consider camera angles when taking photos or videos. Import videos and photos into film editing software. Record sounds and add these to a video. Add text to a video. Incorporate transitions between images. Evaluate their own and others’ trailers.	<b>Programming 2</b>	<i>What children will learn:</i> To know that combining computational thinking skills (sequence, abstraction, decomposition etc) can help you to solve a problem. To understand that pattern recognition means identifying patterns to help them work out how the code works. To understand that algorithms can be used for a number of purposes e.g. animation, games design etc.	<i>What children will be able to do</i> Understand that problems can be solved more easily using computational thinking. Understand what the different code blocks do and create a simple game. Understand the terms ‘pattern recognition’ and ‘abstraction’ and how they help to solve a problem. Create a Scratch program which draws a square and at least one other shape. Understand how computational thinking can help to solve problems and apply computational thinking to problems they face.
	HT6	<b>Data Handling</b>	<i>What children will learn:</i> To know that a database is a collection of data stored in a logical, structured and orderly manner.	<i>What children will be able to do</i> Explain what is meant by ‘field,’ ‘record,’ and ‘data.’	<b>Data Handling</b>	<i>What children will learn:</i> To know that computers can use different forms of input to sense the world around them so that they can	<i>What children will be able to do</i>

			<p>To know that computer databases can be useful for sorting and filtering data.</p> <p>To know that different visual representations of data can be made on a computer.</p>	<p>Compare paper and computerised databases.</p> <p>Put values into a spreadsheet.</p> <p>Sort, filter and interpret data in a spreadsheet.</p> <p>Create a graph on Google Sheets.</p> <p>Explain the purpose of visual representations of data.</p>		<p>record and respond to data. This is called 'sensor data'.</p> <p>To know that a weather machine is an automated machine that responds to sensor data.</p> <p>To understand that weather forecasters use specific language, expression and pre-prepared scripts to help create weather forecast films.</p>	<p>Search the web efficiently to find temperatures of different cities and record this accurately.</p> <p>Design a weather station that gathers and records sensor data, explaining how it works and the units of measurement it would use.</p> <p>Design an automated machine that uses selection to respond to sensor data.</p> <p>Search for and record weather forecast information in a spreadsheet and explain how this data is collected.</p> <p>Create a video which includes weather forecast information.</p>
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		Topic	Year 5	Topic	Year 6	
<b>Autumn</b>	HT1	<b>Computing systems and Networks</b>	<p><b>What children will learn:</b></p> <p>To know how search engines work. To understand that anyone can create a website and therefore we should take steps to check the validity of websites. To know that web crawlers are computer programs that crawl through the internet. To understand what copyright is. To know the difference between ROM and RAM.</p>	<p><b>What children will be able to do</b></p> <p>Explain what a search engine is, suggesting several search engines to use and explain how to use them to find websites and information. Suggest that things online aren't always true and recognise what to check for. Explain why keywords are important and what TASK stands for, using these strategies to search effectively. Recognise the terms 'copyright' and 'fair use' and combine text and images in a poster. Make parallels between book searching and internet searching, explaining the role of web crawlers and recognising that results are rated to decide rank.</p>	<p><b>Computing systems and Networks</b></p> <p><b>What children will learn:</b></p> <p>To understand the importance of having a secure password and what "brute force hacking" is. To know that the first computers were created at Bletchley Park to help the war effort in World War 2. To know about some of the historical figures that contributed to technological advances in computing. To understand what techniques are required to create a presentation using appropriate software.</p>	<p><b>What children will be able to do</b></p> <p>Explain that codes can be used for a number of different reasons and decode messages. Explain how to ensure a password is secure and how this works. Create a simple website with information about Bletchley Park including the need to build electronic thinking machines to solve cipher codes. Explain the importance of historical figures and their contribution towards computer science. Present information about their historical figure in an interesting and engaging manner.</p>
	HT2	<b>Programming 1</b>	<p><b>What children will learn:</b></p> <p>To know that a soundtrack is music for a film/video and that one way of composing these is on programming software. To understand that using loops can make the process of writing music simpler and more effective. To know how to adapt their code while performing their music.</p>	<p><b>What children will be able to do</b></p> <p>Iterate ideas, testing and changing throughout the lesson. Explain what the basic commands do. Explain how their program links to the theme. Include a loop in their work. Correct their own simple mistakes. Explain their scene in the story. Link musical concepts to their scene. Include a repeat and explain its function to enhance music. Code a piece of music that combines a variety of structures. Use loops in their programming. Recognise that programming music is a way to apply their skills</p>	<p><b>Programming</b></p> <p><b>What children will learn:</b></p> <p>To know that there are text-based programming languages such as Logo and Python. To know that nested loops are loops inside of loops. To understand the use of random numbers and remix Python code.</p>	<p><b>What children will be able to do</b></p> <p>Iterate ideas, testing and changing throughout the lesson and explain what their program does. Use nested loops in their designs, explaining why they need two repeats. Alter the house drawing using Python commands; use comments to show a level of understanding around what their code does. Use loops in Python and explain what the parts of a loop do. Recognise that computers can choose random numbers; decompose the program into an algorithm and modify a program to personalise it.</p>
<b>Spring</b>	HT3	<b>Data Handling</b>	<p><b>What children will learn:</b></p> <p>To know that Mars Rover is a motor vehicle that collects data</p>	<p><b>What children will be able to do</b></p>	<p><b>Data Handling 1</b></p> <p><b>What children will learn:</b></p> <p>To know that data contained within barcodes and QR codes can be used by computers.</p>	<p><b>What children will be able to do</b></p>

		<p>from space by taking photos and examining samples of rock.</p> <p>To know what numbers using binary code look like and be able to identify how messages can be sent in this format.</p> <p>To understand that RAM is Random Access Memory and acts as the computer's working memory.</p> <p>To know what simple operations can be used to calculate bit patterns.</p>	<p>Identify some of the types of data that the Mars Rover could collect (for example, photos).</p> <p>Explain how the Mars Rover transmits the data back to Earth and the challenges involved in this.</p> <p>Read any number in binary, up to eight bits.</p> <p>Identify input, processing and output on the Mars Rovers.</p> <p>Read binary numbers and grasp the concept of binary addition.</p> <p>Relate binary signals (Boolean) to a simple character-based language, ASCII.</p>		<p>To know that infrared waves are a way of transmitting data.</p> <p>To know that Radio Frequency Identification (RFID) is a more private way of transmitting data.</p> <p>To know that data is often encrypted so that even if it is stolen it is not useful to the thief.</p>	<p>Understand why barcodes and QR codes were created.</p> <p>Create (and scan) their own QR code using a QR code generator website.</p> <p>Explain how infrared can be used to transmit a Boolean type signal.</p> <p>Explain how RFID works, recall a use of RFID chips, and type formulas into spreadsheets.</p> <p>Take real-time data and enter it effectively into a spreadsheet.</p> <p>Presenting the data collected as an answer to a question.</p> <p>Recognising the value of analysing real-time data.</p> <p>Analyse and evaluate transport data and consider how this provides a useful service to commuters.</p>
HT4	<b>Programming 2</b>	<p>What children will learn:</p> <p>To know that a Micro:bit is a programmable device.</p> <p>To know that Micro:bit uses a block coding language similar to Scratch.</p> <p>To understand and recognise coding structures including variables.</p> <p>To know what techniques to use to create a program for a specific purpose</p>	<p>What children will be able to do</p> <p>Clip blocks together and predict what will happen. Make connections with previous programming interfaces they've used, e.g. Scratch.</p> <p>Create their own images to make the animation and recognise the difference between 'on start' and 'forever'.</p> <p>Recognise blocks they've used previously, identifying inputs and</p>	<b>Creating Media</b>	<p>What children will learn:</p> <p>To know that radio plays are plays where the audience can only hear the action so sound effects are important.</p> <p>To know that sound clips can be recorded using sound recording software.</p> <p>To know that sound clips can be edited and trimmed.</p>	<p>What children will be able to do</p> <p>Explain how to record sounds and add in sound effects over the top.</p> <p>Produce a simple radio play with some special effects and simple edits which demonstrate an understanding of how to use the software.</p> <p>Create a document that includes correct date information and facts about the computers and how they made a difference.</p>



			(including decomposition).	<p>outputs used and make predictions about how variables work.</p> <p>Choose appropriate blocks to complete the program and attempt the challenges independently.</p> <p>Break a program down into smaller steps, suggesting appropriate blocks and match the algorithm to the program.</p>			<p>Demonstrate a clear understanding of their device and how it affected modern computers, including well-researched information with an understanding of the reliability of their sources.</p> <p>Describe all of the features that we'd expect a computer to have including RAM, ROM, hard drive and processor, but of a higher specification than currently available.</p>
Summer	HT5	<b>Creating Media</b>	<p><b>What children will learn:</b></p> <p>To understand that stop motion animation is an animation filmed one frame at a time using models, and with tiny changes between each photograph.</p> <p>To know that decomposition of an idea is important when creating stop motion animations.</p> <p>To know that editing is an important feature of making and improving a stop motion animation.</p>	<p><b>What children will be able to do</b></p> <p>Create a toy with simple images with a single movement.</p> <p>Create a short stop motion with small changes between images.</p> <p>Think of a simple story idea for their animation then decompose it into smaller parts to create a storyboard with simple characters.</p> <p>Make small changes to the models to ensure a smooth animation and delete unnecessary frames.</p> <p>Add effects such as extending parts and titles.</p> <p>Provide helpful feedback to other groups about their animations.</p>	<b>Data Handling 2</b>	<p><b>What children will learn:</b></p> <p>To know that data can become corrupted within a network but this is less likely to happen if it is sent in 'packets'.</p> <p>I know that devices or that are not updated are most vulnerable to hackers.</p> <p>To know the difference between mobile data and WiFi.</p>	<p><b>What children will be able to do</b></p> <p>Recognise that data can become corrupted within a network and that data sent in packets is more robust, as well as identify the need to update devices and software.</p> <p>Recognise differences between mobile data and WiFi and use a spreadsheet to compare and identify high-use data activities and low-use data activities.</p> <p>Make links between the Internet of Things and Big Data and give a basic example of how data analysis/analytics can lead to improvement in town planning.</p> <p>Explain ways that Big Data or IoT principles could be used to solve a problem or improve efficiency within the school and prepare a presentation about their idea, considering the privacy of some data.</p> <p>Present their ideas about how Big Data/IoT can improve the school and provide feedback to others on their presentations.</p>
	HT6	<b>Skills Showcase</b>	<p><b>What children will learn:</b></p> <p>To understand that bit patterns represent images as pixels.</p>	<p><b>What children will be able to do</b></p> <p>Create a pixel picture, explaining that a pixel is the smallest element of a digital</p>	<b>Skills Showcase</b>	<p><b>What children will learn:</b></p> <p>To know what designing an electronic product involves.</p>	<p><b>What children will be able to do</b></p> <p>Evaluate code, understanding what it does and adapt existing to code for a specific purpose.</p>

			<p>To understand that the data for digital images can be compressed.</p> <p>To know the difference between ROM and RAM.</p> <p>To understand various techniques that will improve the design of a 3D object (using CAD software).</p>	<p>image and that binary is used to code and transfer this data.</p> <p>Save a JPEG as a bitmap and recognise the difference in file size as well as explaining how pixels are used to transfer image data.</p> <p>Explain the 'fetch, decode, execute' cycle in relation to real-world situations.</p> <p>Create a profile with a safe and suitable username and password and begin to use 3D design tools.</p> <p>Independently take tutorial lessons, applying what they have learnt to their design and understand the importance of using an online community responsibly</p>		<p>To know which programming software/ language is best to achieve a purpose.</p> <p>To know the building blocks of computational thinking e.g. sequence, selection, repetition, variables and inputs and outputs.</p>	<p>Debug programs and make them more efficient using sequence, selection, repetition or variables.</p> <p>Design appropriate housing for their product using CAD software, including any input or output devices needed to make it work.</p> <p>Create an appealing website for their product, aimed at their target audience which explains what their product is and what it does, using persuasive language.</p> <p>Create an edited video of their project, articulating the key benefits.</p> <p>Describe and show how to search for information online and be aware of the accuracy of the results presented.</p>
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