Whole School Curriculum Aims

Use real life
learning experiences

Encourage a
love of learning

Enriching
memorable moments

Intent
By the time the children leave us they will:
• Have a healthy relationship with technology and know how to use it safely
• Have a good knowledge and skill base in a wide range of technology in a way that will enhance their learning opportunities
• Use technology responsibly and effectively that enhances their everyday lives
Implementation
• We will follow a broad and balanced curriculum that builds on previous learning and provides both support and challenge for learners
• Our scheme ensures a progression of skills and covers all aspects of the computing curriculum
• Children's work will be saved in the pupil share on the school's network for reference and assessment
• We will ensure that we embed computing in our whole school curriculum and that opportunities for enhancing learning by using technology are always taken
Impact
• Our children enjoy and value computing and know why they are doing things, not just how
• Children understand and appreciate the value of computing in the context of their personal wellbeing and the technological, creative and cultural industries and their many career opportunities
• We assess children's learning against the framework below and by looking at pupils' work overtime as they gain skills and knowledge, observing how they perform in lessons and talking to them about what they know

Showcase Units

	Online safety lessons to be taught throughout the year in addition to the units below.					
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Year 1	Improving mouse skills		Internet Safety Day	Algorithms unplugged	Bee Bot/ Virtual Bee-Bot	Introduction to data
Year 2	What is a computer?	Word Processing	Internet Safety Day	Algorithms and debugging		International space station
Year 3	Networks and the internet	Programming Scratch	Internet Safety Day	Journey inside a computer	Video trailers	
Year 4	Collaborative learning	Further coding with Scratch	Internet Safety Day	HTML	Computational thinking	
Year 5	Search engines		Internet Safety Day	Programming music	Mars Rover 1	Stop Motion Animation
Year 6	Bletchley Park	Intro to Python	Internet Safety Day	Big Data 1		History of computing

Progression of skills for Computing						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computer Science- Hardware						
Learning how to explore and tinker with hardware to develop familiarity and introduce relevant vocabulary. Recognising and identifying familiar letters and numbers on a keyboard. Developing basic mouse skills such as moving and clicking.	Learning how to operate a camera or tablet to take photos and videos. Learning how to explore and tinker with hardware to find out how it works. Recognising that some devices are input devices and others are output devices. Learning where keys are located on the keyboard.	Understanding what a computer is and that it's made up of different components. Recognising that buttons cause effects and that technology follows instructions. Learning how we know that technology is doing what we want it to do via its output. Using greater control when taking photos with cameras, tablets or computers. Developing confidence with the keyboard and the basics of touch typing.	Understanding what the different components of a computer do and how they work together. Drawing comparisons across different types of computers. Learning about the purpose of routers.	NA	Learning that external devices can be programmed by a separate computer. Recognising how the size of RAM affects the processing of data.	Learning about the history of computers and how they have evolved over time. Using the understanding of historic computers to design a computer of the future. Understanding and identifying barcodes, QR codes and RFID. Identifying devices and applications that can scan or read barcodes, QR codes and RFID.
Computer Science- Networks & Representation						
			Understanding the role of the key components of a network. Identifying the key components within a network, including whether they are wired or wireless. Understanding that websites and videos are files that are shared from one computer to another. Learning about the role of packets. Understanding how networks work and their purpose. Recognising links between networks and the internet. Learning how data is transferred.	Understanding that computer networks provide multiple services, such as the World Wide Web, and opportunities for communication and collaboration.	Understanding that computer networks provide multiple services, such as the World Wide Web, and opportunities for communication & collaboration	Learning the vocabulary associated with data: data and transmit. Recognising that computers transfer data in binary and understanding simple binary addition. Relating binary signals (Boolean) to the simple character-based language, ASCII. Learning that messages can be sent by binary code, reading binary up to eight characters and carrying out binary calculations.
Computer Science- Computational Thinking						
Using logical reasoning to understand simple instructions and predict the outcome.	Learning that decomposition means breaking a problem down into smaller parts. Using decomposition to solve unplugged challenges. Using logical reasoning to predict the behaviour of simple programs. Developing the skills associated with sequencing in unplugged activities. Following a basic set of instructions. Assembling instructions into a simple algorithm.	Articulating what decomposition is. Decomposing a game to predict the algorithms used to create it. Learning that there are different levels of abstraction. Explaining what an algorithm is. Following an algorithm. Creating a clear and precise algorithm. Learning that programs execute by following precise instructions. Incorporating loops within algorithms.	Using decomposition to explain the parts of a laptop computer. Using decomposition to explore the code behind an animation. Using repetition in programs. Using logical reasoning to explain how simple algorithms work. Explaining the purpose of an algorithm. Forming algorithms independently.	Using decomposition to solve a problem by finding out what code was used. Using decomposition to understand the purpose of a script of code. Identifying patterns through unplugged activities. Using past experiences to help solve new problems. Using abstraction to identify the important parts when completing both plugged and unplugged activities.	Predicting how software will work based on previous experience. Writing more complex algorithms for a purpose.	Decomposing a program into an algorithm. Using past experiences to help solve new problems. Writing increasingly complex algorithms for a purpose.
Computer Science- Programming						
Following instructions as part of practical activities and games. Learning to give simple instructions.	Programming a Floor robot to follow a planned route. Learning to debug instructions when things go wrong. Using programming language to explain how a floor robot works.	Using logical thinking to explore software, predicting, testing and explaining what it does. Using an algorithm to write a basic computer program.	Using logical thinking to explore more complex software; predicting, testing and explaining what it does. Incorporating loops to make code more efficient. Continuing existing code.	Creating algorithms for a specific purpose. Coding a simple game. Using abstraction and pattern recognition to modify code. Incorporating variables to make code more efficient.	Iterating and developing their programming as they work. Confidently using loops in their programming. Using a more systematic approach to debugging code, justifying what	Debugging quickly and effectively to make a program more efficient. Remixing existing code to explore a problem. Using and adapting nested loops. Programming using the language Python.

Experimenting with programming a Bee-bot/Blue- bot and learning how to give simple commands. Learning to debug instructions, with the help of an adult, when things go wrong.	Learning to debug an algorithm in an unplugged scenario.		Making reasonable suggestions for how to debug their own and others' code.	Remixing existing code.	is wrong and how it can be corrected. Writing code to create a desired effect. Using a range of programming commands. Using repetition within a program. Amending code within a live scenario.	Changing a program to personalise it. Evaluating code to understand its purpose. Predicting code and adapting it to a chosen purpose.
Information Technology- Using software						
Using a simple online paint tool to create digital art.	Using a basic range of tools within graphic editing software. Taking and editing photographs. Developing control of the mouse through dragging, clicking and resizing of images to create different effects. Developing understanding of different software tools.	Developing word processing skills, including altering text, copying and pasting and using keyboard shortcuts. Using word processing software to type and reformat text. Creating and labelling images.	Taking photographs and recording video to tell a story. Using software to edit and enhance their video adding music, sounds and text on screen with transitions.	Building a web page and creating content for it. Use online software for documents, presentations, forms and spreadsheets. Using software to work collaboratively with others.	Using logical thinking to explore software more independently, making predictions based on their previous experience. Using software programme Sonic Pi/Scratch to create music. Identify ways to improve & edit programs, videos, images etc.	Using logical thinking to explore software independently, iterating ideas and testing continuously. Using search and word processing skills to create a presentation. Creating and editing sound recordings for a specific purpose.
Information Technology- Using Internet Searches						
	Recognising devices that are connected to the internet.			Understanding that information found by searching the internet is not all grounded in fact.	Developing searching skills to help find relevant information on the internet. Learning how to use search engines effectively to find information, focussing on keyword searches and evaluating search returns.	Understanding how search engines work.
Information Technology- Using Data						
Representing data through sorting and categorising objects in unplugged scenarios. Representing data through physical pictograms. Exploring branch databases through physical games.	Understanding that technology can be used to represent data in different ways: pictograms, tables, pie charts, bar charts, block graphs etc. Using representations to answer questions about data. Using software to explore and create pictograms and branching databases.	Collecting and inputting data into a spreadsheet. Interpreting data from a spreadsheet.			Understanding how data is collected in remote or dangerous places. Understanding how data might be used to tell us about a location.	Understanding how barcodes, QR codes and RFID work. Gathering and analysing data in real time. Creating formulas and sorting data within spreadsheets.
Information Technology- Wider use of technology						
		Learning how computers are used in the wider world.		Understanding that software can be used collaboratively online to work as a team.	Learn about different forms of communication that have developed with the use of technology.	Learning how 'big data' can be used to solve a problem or improve efficiency.
Digital Literacy						

Learning to log in and log out.	Logging in and out and saving work on their own account.	Learning how to create a strong password. Understanding how to stay safe when talking to people online & what to do if they see or hear something online that makes them feel upset or uncomfortable Identifying whether information is safe or unsafe to be shared online. Learning to be respectful of others when sharing online & ask for their permission before sharing content. Learning strategies for checking if something they read online is true.		Recognising that information on the internet might not be true or correct and that some sources are more trustworthy than others. Learning to make judgements about the accuracy of online searches. Identifying forms of advertising online. Recognising what appropriate behaviour is when collaborating with others online. Reflecting on the positives and negatives of time spent online. Identifying respectful and disrespectful online behaviour.	Identifying possible dangers online and learning how to stay safe. Evaluating the pros and cons of online communication. Recognising that information on the internet might not be true or correct and learning ways of checking validity. Learning what to do if they experience bullying online. Learning to use an online community safely	Understanding the importance of secure passwords and how to create them. Using search engines safely and effectively.

Progression of knowledge in Computing						
EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computing Systems and networks						
To be able to understand what a computer keyboard is and recognising some letters and numbers. To know that a mouse can be used to click, drag and create simple drawings. To know that to use a computer you need to log in to it and then log out at the end of your session.	To know that "log in and log out" means to begin and end a connection with a computer. 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. To know that passwords are important for security. To know that when we create something on a computer it can be more easily saved and shared than a paper version. To know some of the simple graphic design features of a piece of online software.	To know the difference between a desktop and laptop computer. To know that people control technology. To know that buttons are a form of input that give a computer an instruction about what to do (output). To know that computers often work together.	To know what a tablet is and how it is different from a laptop/desktop computer. To understand what a network is and how a school network might be organised. To know that a server is central to a network and responds to requests made. To know how the internet uses networks to share files. To know that a router connects us to the internet. To know what a packet is and why it is important for website data transfer. To know the roles that inputs and outputs play on computers. To know what some of the different components inside a computer are e.g. CPU, RAM, hard drive, and how they work together.	To understand that software can be used collaboratively online to work as a team. To know what type of comments and suggestions on collaborative document can be helpful. To know that you can use images, text, transitions and animation in presentation slides.	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.	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 crack the Enigma code 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.
Programming						
To know that being able to follow and give simple instructions is important in computing. To understand that it is important for instructions to be in the right order. To understand why a set of instructions may have gone wrong. To know that you can program a Bee-Bot with some simple commands. To understand that debugging means how to fix some simple programming errors. To understand that an algorithm is a set of clear and precise instructions.	To understand that an algorithm is when instructions are put in an exact order. To know that input devices get information into a computer and that output devices get information out of a computer. To understand that decomposition means breaking a problem into manageable chunks and that it is important in computing. To know that we call errors in an algorithm 'bugs' and fixing these 'debugging'. To understand the basic functions of a Bee-Bot. To know that you can use a camera/tablet to make simple videos. To know that algorithms move a bee-bot accurately to a chosen destination.	To understand what machine learning is and how that enables computers to make predictions. To know that loops in programming are where you set a certain instruction (or instructions) to be repeated multiple times. To know that abstraction is the removing of unnecessary detail to help solve a problem.	To know that Scratch is a programming language and some of its basic functions. To understand how to use loops to improve programming. To understand how decomposition is used in programming. To understand that you can remix and adapt existing code.	To understand that a variable is a value that can change (depending on conditions) and know that you can create them in Scratch. To know what a conditional statement is in programming. To understand that variables can help you to create a quiz on Scratch. 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.	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.	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.
Creating media						
			To know that different types of camera shots can make my photos or videos look more effective.	To know some of the features of web design software. To know that a website is a collection of pages that are all connected.		To know that radio plays are plays where the audience can only hear the action so sound effects are important. To know that sound clips can be recorded using sound recording

			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.	To know that websites usually have a homepage and subpages as well as clickable links to new pages, called hyperlinks. To know that websites should be informative and interactive.		software. To know that sound clips can be edited and trimmed.
Data handling						
To know that sorting objects into various categories can help you locate information. To know that using yes/no questions to find an answer is a branching database. To know that a pictogram is a way of showing information.	To know how that charts and pictograms can be created using a computer. To understand that a branching database is a way of classifying a group of objects. To know that computers understand different types of 'input'.	To understand that you can enter simple data into a spreadsheet. To understand what steps you need to take to create an algorithm. To know what data to use to answer certain questions. To know that computers can be used to monitor supplies.	To know that a database is a collection of data stored in a logical, structured and orderly manner. To know that computer databases can be useful for sorting and filtering data. To know that different visual representations of data can be made on a computer.		To know that Mars Rover is a motor vehicle that collects data from space by taking photos and examining samples of rock. To know what numbers using binary code look like and be able to identify how messages can be sent in this format. To understand that RAM is Random Access Memory and acts as the computer's working memory. To know what simple operations can be used to calculate bit patterns.	To know that data contained within barcodes and QR codes can be used by computers. To know that infrared waves are a way of transmitting data. To know that Radio Frequency Identification (RFID) is a more private way of transmitting data. To know that data is often encrypted so that even if it is stolen it is not useful to the thief.

Improving Mouse skills	Algorithms unplugged	Programming Bee Bots	Introduction to data
-The ability to explain how to log in to computers and use the mouse and keyboard. -Creating a piece of artwork which demonstrates clear control of the mouse using dragging and clicking to create different effects. -Pupils are able to explain how to log in and log out of the local computer network. -Creating a piece of artwork which demonstrates clear control of the mouse using dragging and clicking to create different effects. -The ability to explain how to log in and log out of the local computer network. -Logging in and using a variety of different tools to draw a scene from a story.	-Logging and out of computers unaided, creating a self-portrait that includes the key features of a face and using at least two different paint tools. -Writing clear algorithms, considering the different steps required and explaining what an algorithm is -Using clear instructions in their algorithm and following an algorithm carefully -Creating a clear, achievable program for their virtual assistant and explaining what inputs and outputs are -Showing clear decomposition of their designs into the steps that are needed to make it -Identifying bugs and fixing algorithms	-Explaining what happened when they pressed given buttons. -Explaining why they think the buttons they pressed were the right ones – showing a recognition of cause and effect -Discussing what each button did and demonstrating how it worked. -Recording the video with everyone in shot -Recognising which buttons are necessary in the sequence of instructions. -Predicting correct instructions to reach a pre-planned destination -Identifying a destination and getting Bee-Bot there (in as many steps as necessary) -Programming the Bee-Bot to reach the goal as specified in the story. -Identifying and correcting mistakes when they go wrong	-Representing data in different ways and using this to answer questions Logging in and using mouse and keyboard skills to navigate the computer; showing how the same data can be shown in a pictogram as well as tables and charts -Identifying different minibeasts. Recording the number of different minibeasts seen. Representing this data digitally. Accurately recording the number of different minibeasts they see -Clicking and dragging objects to create a branching database; typing in questions to sort the data -Designing a computerised invention to gather data; explaining how it works -Discussing what the internet is and what you can do online -Recognising that internet use may affect mood or emotions and linking this to specific online activity -Recognising how the internet can upset others -Identify which information is appropriate to share and post online and which is not

Children who are working towards the standard will not achieve every objective above.   Children working at the expected standard will achieve most of the objectives above.   Children working above the expected standard will achieve all of the objectives above, working independently and with confidence.

What is a computer?	Algorithm & debugging	Word processing	International space station
-Confidently naming the peripherals: screen, keyboard and mouse and understanding the function of each of the parts. They should also be able to spot peripherals on different types of computers -Recognising that buttons cause effects and that technology follows instructions -Recognising different forms of technology beyond laptops and tablets; suggesting what the technology does (after observing it); explaining why think something is technology -Including inputs and/or outputs as part of their invention and suggesting how an invention works. -Recognising computers in the world around them and explaining the role of each computer	-Writing a creative algorithm planned for the dinosaur game and explaining what decomposition means -Writing clear and precise algorithms that can be understood by another person -Creating algorithms to solve problems and beginning to use loops to make their code more efficient -Clearly explaining what abstraction is and creating a plan which can be identified as a particular location through clear landmarks or a key -Planning a dance that has a clear structure that can be traced through the group's algorithm plan and uses different types of loops	-Understanding which are the home row keys and how to find them for typing as well as understanding and using spacebar and backspace correctly -Typing and making simple alterations to text using buttons on a word processor. -Creating a document, which contains appropriate images and modification of text, using keyboard shortcuts -Understanding how to use copy and paste to copy text from one document to another; using different text styles and editing tools and crediting source materials -Creating a poster with clear information about how to remain safe online; showing the importance of not sharing personal information and what to do if something online makes them feel uncomfortable	-Navigating the digital map and describing and explaining at least one way in which astronauts' survival needs are met aboard the ISS -Identifying and digitally drawing at least six items which fulfil basic human needs when aboard the ISS and explaining the importance of exercise, healthy eating and cleanliness -Reading the correct temperature on a thermometer and designing a display showing everything that needs to be monitored by sensors on the ISS -Creating an algorithm which addresses all plants' needs and explaining how space exploration can benefit life on Earth -Explaining that water is important to life on Earth and identifying relevant information in a spreadsheet

Online Safety
Children can explain what is meant by online information and what information is safe to be shared online   Can explain why we need passwords and the need for a strong password. They know what information is private and how we can begin to make things private online   Understanding that they need to ask permission before sharing content online. Explaining how it might make others feel if they have not asked permission or have shared information about someone when asked not to.   Understanding that they have a right to say no or deny their permission and know who they can ask for help
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Networks and the internet	Programming Scratch	Journey inside a computer	Video trailers
-Recognising that a network is two or more devices connected and showing this information in a poster which combines text and images -Recognising that files are saved on a server and that they travel through wireless and wired connections rather than travelling directly -Understanding that networks connect to the internet via a router and explaining parts of the journey a website goes through to reach your computer -Explaining that routers connect us to the internet and suggesting what they have to do so a website reaches a computer -Explaining that websites are split into small pieces to be sent via the internet and that packets are encoded with information to get to the right place	-Explaining what a loop is and its role within a program. Including a loop within their program and explain what it's doing -Explaining what happened to the program when they added certain blocks. Suggesting how the colour differences could help them predict block actions -Selecting blocks to create a desired effect. Suggesting possible additions to an existing program -Explaining which blocks/features have been used. Recognising where something on screen is controlled by code. Using a systematic approach to finding bugs -Explaining what an algorithm is and understanding the purpose of an algorithm. Using a class algorithm when creating a program	-Suggesting what input and output are and recognising that the computer sends and receives instructions -Explaining that parts work together to make the laptop work and suggesting the role of some of the parts -Naming the different parts of a computer and explaining what an algorithm is Suggesting what computer memory is and using a QR code -Recognising that some computer parts relate to functions and making some comparisons between laptops and tablets	Creating a storyboard to plan a book trailer and describing the purpose of a book trailer -Using digital devices to record video or take photos, framing shots carefully to create the desired effects -Importing videos and photos into film editing software, recording sounds and adding these to their videos -Adding text to the trailer, as well as incorporating different transitions between shots or images -Identifying and articulating what makes a successful book trailer and suggesting ideas on how to share book recommendations with others

Online Safety
Able to recall some of the 7 tips for dealing with upsetting online content Understanding that digital devices share personal information amongst each other Understanding some of the key features of social media platforms and the age restrictions that are required for popular social media platforms
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Collaborative learning	Further Coding with Scratch	HTML	Computational thinking
-Understanding the need to be thoughtful when working on a collaborative document -Using comments to suggest changes to a document and understanding how to resolve comments on a document -Using a variety of different slide styles to convey information including images and transitions -Creating a Google Form with a range of question types that will provide different types of answer, e.g.: text, multiple choice or numerical values -Exporting data to a spreadsheet, highlighting data using conditional formatting and calculating averages and sums of numbers	-Understanding how to create a simple code script and being able to change a sprite's appearance and develop an understanding of rotations and directions of a sprite -Identifying some of the code blocks used within the Scratch game that make it function -Knowing what a variable is and using the 'say' and 'ask' blocks -Knowing how to use a variable to record a score -Understanding of what a variable is and how it works within a program	-Adding text between the heading and paragraph tags. Finding some of the tags found in the treasure hunt. -Identifying and remixing HTML code to alter the text size and content of a web page -Changing the colours of their object elements. Changing the sizes of some of the elements. -Explaining how they created their story. -Adapting the basic elements of a story within a web page using the 'Inspect Elements' tool. -Finding images that are permitted for reuse and changing at least one image and text in a web page to create a new story.	-An understanding that problems can be solved more easily using computational thinking -Understanding what the different code blocks do and creating a simple game using the code looked at in the start of the lesson plus a few further features -Understanding the terms 'pattern recognition' and 'abstraction' and how they help to solve a problem as well as making some changes to the existing code by recognising the patterns that cause the current actions to happen. -Understanding how to abstract key information -Creating a Scratch program which draws a square and at least one other shape. -Using pattern recognition to modify the script to draw different shapes -Understanding how computational thinking can help to solve problems and applying computational thinking to problems they face

Online Safety
Being able to describe how to search over multiple platforms and are aware of the accuracy of the results presented
Describing some of the methods used to persuade people to buy online
Being able to explain the difference between fact, opinion and belief and recognise these online
Can explain what a bot is and give examples of different bots
Being able to explain some positive and negative distractions of using technology and small strategies on how to reduce the amount of time spent on technology
Children can describe strategies for being safe online and give examples of how to be respectful. They know how to respect the thoughts and beliefs of others
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Search engines	Programming music Scratch	Mars Rover 1	Stop motion animation (Stop Motion Studio)
-Explaining what a search engine is, suggesting several search engines to use and explaining how to use them to find websites and information -Suggesting that things online aren't always true and recognising what to check for. Understanding that anyone can create a website -Explaining why keywords are important and what the acronym TASK stands for, using these strategies to search effectively -Recognising the terms 'copyright' and 'fair use' and combining text and images in a poster -Making parallels between book searching and internet searching, explaining the role of web crawlers and recognising that results are rated to decide rank	-Iterating ideas, testing and changing throughout the lesson. Explaining what the basic commands do -Explaining how their program linked to the theme. Including a loop in their work. Correcting their own simple mistakes -Explaining their scene in the story. Being able to link the musical concepts to their scene. -Recognising that they can program their music in that way. -Including a repeat and explaining its function to enhance music -The ability to code a piece of music that combined a variety of structures. -Using loops in their programming. -Recognising that programming music is a way to apply their skills	-Identifying some of the types of data which the Mars Rover could collect (e.g., photos). -Explaining how the Mars Rover transmits the data back to Earth (radio waves) and the challenge involved in this (the great distance). Researching a comparative fact about the distance to Mars. -Reading any number in binary, up to eight bits. Identifying binary as the most basic way computers communicate. Understanding each one or zero is referred to as a bit -Identifying input, processing and output on the Mars Rovers. Explaining how the size of RAM affects the processing of data. -Reading binary numbers and grasping the concept of binary addition. -Reading binary numbers to four bits. -Relating binary signals (Boolean) to a simple character based language, ASCII	-Creating a toy with simple images with a single movement -Creating a short stop motion with small changes between images -Thinking of a simple story idea for their animation then decomposing it into smaller parts to create a storyboard with simple characters -Making small changes to the models to ensure a smooth animation and deleting unnecessary files -Have a clear animation with added effects such as extending parts and the use of a title. They will also be able to provide helpful feedback to other groups about their animations
Online Safety			
Understanding that passwords need to be strong and that apps do require some form of passwords Recognising two of the types of online communication and knowing who to go to if they need help with any communication matters online Searching for simple information about a person such as their birthday or key life moments Knowing what bullying is and that it can occur both online and in the real world Recognising when health and wellbeing are being affected in either a positive or negative way through online use. Offering a couple of advice tips to combat the negative effects of online use			
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Year 6 End Points

Bletchley Park	Intro to Python	Big Data 1	History of computers
-Explaining that codes can be used for a number of different reasons and decoding messages. -Explaining how to ensure a password is secure and how this works. Understanding why a longer password is more secure than a short one. -Knowing what the first computer was built for. Presenting a simple website with information about Bletchley Park including the need to build electronic thinking machines to solve cipher codes. -Explaining the importance of historical figures and their contribution towards computer science -Presenting information about their historical figure in an interesting and engaging manner using a presentation software	-Iterating ideas, testing and changing throughout the lesson and explaining what their program does independently. -Using nested loops in their designs, explaining why they need two repeats. -Beginning to draw the house using Python commands; using comments to show a level of understanding around what their code does. -Using loops in Python and explaining what the parts of a loop do and suggesting an appropriate place to use a loop -Recognising that computers can choose random numbers; decomposing the program into an algorithm and modifying a program to personalise it.	-A firm understanding of why barcodes and QR codes were created and how the data contained within barcodes and QR codes can be used by computers. -An ability to create (and scan) their own QR code using a QR code generator website. -Explaining how infrared can be used to transmit a Boolean type signal. -The ability to: explain how RFID works, recall a use of RFID chips, type formulas into spreadsheets. -Typing formulas into cells using a spreadsheet -Taking real time data and entering it effectively into a spreadsheet. -Presenting the data collected as an answer to a question (Which ride is the best choice for a FastPass?). -Recognising the value of analysing real time data. -Sorting data within an Excel spreadsheet by inserting a table. Recalling how RFID can be used in data transfer.	-Explaining how to record sounds and add in sound effects over the top. -Producing a simple radio play with some special effects and simple edits which demonstrates an understanding of how to use the software and removing any mistakes. -Creating a document which includes correct date information and facts about the computers and how they made a difference to the modern world. -Demonstrating 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. -Understanding how computers work by recognising its components and why they are important. -Describing 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.

Online Safety

The ability to discuss a range of issues online that can leave pupils feeling sad, frightened, worried or uncomfortable and can describe numerous ways to get help.

Explaining how sharing online can have both negative and positive impacts. Being aware of how to seek consent from others before sharing material online. Describing how content can still be shared online even if it is set to private

Explaining what a 'digital reputation' is and what it can consist of

Understand the importance of capturing evidence of online bullying and can demonstrate some of these methods on the devices at school

Describing ways to manage passwords and strategies to add extra security such as two-factor authentication. Explaining what to do if passwords are shared, lost or stolen

Describing strategies to identify scams. Explaining ways to increase privacy settings and understanding why it's important to keep software updated

Children who are working towards the standard will not achieve every objective above.

Children working at the expected standard will achieve most of the objectives above.

Children working above the expected standard will achieve all of the objectives above, working independently and with confidence.