West Ashton Computing 2 year rolling programme – Cycle B

2023 - 2024

Class	Term	Unit	Knowledge & Skills Overview	Vocabulary
Comets	1	Programming Bee Bots Using Bee-Bots to navigate an area and constructing simple algorithms, through the story of The Three Little Pigs	Computational Thinking Learning how to explore and tinker with hardware to find out how it works. Constructing a series of instructions into a simple algorithm. Applying computing concepts to real world situation in an unplugged activity.	algorithm Bee-Bot computing code computer program explain explore instructions predict tinker video
	2	Digital imagery Taking and manipulating digital photographs, including adding images found via a search engine	Digital Literacy and Online Safety Using technology purposefully to create, organise, store, manipulate and retrieve digital content. Knowing what to do if they have concerns about content or contact online. Computers and Hardware Using cameras or tablets to take photos. Computational Thinking Using logical reasoning to predict the behaviour of simple programs.	crop delete download drag and drop editing software image import resize save as search engine sequence smart device storage space visual effects
	3	Introduction to data Learning about what data is and how it can be represented and using these skills to show the findings of a mini beast hunt	Digital Literacy and Online Safety Using technology purposefully to create, organise, store, manipulate and retrieve digital content. Selecting software appropriately. Computers and Hardware Recognising uses of technology beyond school.	categorise chart computer data information label pictogram record sort table text
	4	Programming: Scratch Jr Using 'Scratch Jr', pupils programme a familiar	Computational Thinking Creating and debugging simple programs. Using logical reasoning to predict the behaviour of simple programs.	animation bug code

		story and an animation, make their own musical instruments and follow an algorithm to record a joke	Understanding what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. Digital Literacy and Online Safety Using technology purposefully to create, organise, store, manipulate and retrieve digital content.	debug icon imitate instructions sequence
	5	Stop motion Pupils create simple animations, storyboarding their ideas then decomposing it into small parts of action to be captured.	Digital Literacy and Online Safety Using technology purposefully to create, organise, store, manipulate and retrieve digital content. Computers and Hardware Understanding how to use tablets or computers to take photos.	animator storyboard contraption upload decompose design download film review filming import image plan sketch software stop-motion
	6	International Space Station Building on their understanding of how computers sense the world around us, pupils learn how data is collected and used to keep astronauts safe on the I.S.S	Digital Literacy and Online Safety Using technology to create and label images and to put data into a spreadsheet. Computational Thinking Consider inputs and outputs to understand how sensors work.	approximate astronaut data digital content experiment interactive map laboratory monitor (verb) satellite sensor space survival thermometer

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Discoverers	1	Networks and the internet To understand how computers communicate, children learn about networks and the internet, and how they are used to share information.	Computers and Hardware Identifying network components and understand how they are used to connect to the internet and how data is transferred. Digital Literacy and Online Safety Understanding computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration.	device file internet network network map network switch router server submarine cables the cloud wi-fi/wired/wireless wireless access point
	2	Top trumps databases Developing their understanding of data and databases, children play with and create their own Top Trumps cards, learning how to interpret information by ordering and filtering	Digital Literacy and Online Safety Using technology purposefully to create, organise, store, manipulate and retrieve data.	categorise data database fields filter graphs and charts information record sort spreadsheet
	3	Journey inside a computer Children learn about the different parts of a computer through role-play and develop their understanding of how they follow instructions	Computers and Hardware Understanding what different components of a computer do. Computational Thinking Understanding that programs execute by following precise and unambiguous instructions.	algorithm computer computer program data desktop instructions ROM tablet device trackpad
	4	Collaborative learning Learning to work collaboratively in a responsible way using tools including Google Docs and Sheets	Digital Literacy and Online Safety Selecting using and combining a variety of software to design and create a range of programs, systems and content that accomplish given goals. Understanding opportunities offered by the World Wide Web for communication and collaboration.	collaborate spreadsheet comment transition e-Document edit email icon insert (file) link

				presentation software presentation reply reviewing comments share
	5	Investigating weather Children investigate the role of computers in forecasting and recording weather as well as how technology is used to present forecasts	Digital Literacy and Online Safety Understanding why some sources are more trustworthy than others. Computational Thinking Understanding the role of inputs and outputs in computerised devices.	algorithm automated machine calculate climate device forecast log data predict record sensor source spreadsheet temperature weather
	6	HTML Pupils explore the language behind well-known websites, while developing their understanding of how to change the core characteristics of a website using HTML and CSS	Digital Literacy and Online Safety Recognising that information on the internet might not be true or correct. Using technology safely, by recognising acceptable/ unacceptable behaviour. Knowing what to do when they have concerns about content or contact online. Computational Thinking Understanding that websites can be altered by exploring the code beneath the site. Designing, writing and debugging programs that accomplish specific goals. Solving problems by decomposing them into smaller parts.	code content copyright CSS hacker hex code internet browser permission script URL web page

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Voyagers	1	Programming: Sonic Pi Composing music using code through Sonic Pi or Scratch pupils can compose simple tunes culminating in a 'battle of the bands' using loops of music	Digital Literacy and Online Safety Selecting using and combining a variety of software to design and create a range of programs, systems and content that accomplish given goals. Computational Thinking Using programming language to create music, including use of loops	basic commands bug/debug code (computer and verb) error live loop loop pitch program language rhythm soundtrack tempo timbre tinker
	2	Creating Media: Stop motion Collaboratively creating a stop-motion animation by sharing and then decomposing their ideas . Pupils will develop their ability to edit and improve their creations.	Digital Literacy and Online Safety Using technology purposefully to create, organise, store, manipulate and retrieve digital content. Computers and Hardware Understanding how to use tablets or computers to take photos. Computational Thinking Consider sequence and selection of frames when editing work.accurate information.	animation animator background decompose design digital device duplicate editing frame illusion onion skinning stop-motion storyboard upload
	3	Computing Systems and Networks: Search engines To enable children to quickly and accurately find information and become independent learners, they need to develop their searching skills and learn how to identify trustworthy sources	Digital Literacy and Online Safety Recognising that information on the internet might not be true or correct. Know how to use keywords to quickly find	algorithm company logo data leak data privacy inaccurate information index keywords network online page rank TASK web crawler website WWW

	4	Big Data 1 Children learn how data is collected and stored by exploring barcodes, QR codes and RFID chips, and investigate how collecting big data can be used to help people in a variety of different scenarios	Digital Literacy and Online Safety Understanding how learning can be applied to a real world context. Selecting, using and combining a variety of software to design and create a range of programs, systems and content to collect, analyse, evaluate and present data. Computers and Hardware Understanding that computer networks provide multiple services Understanding how barcodes and QR codes work.	barcode signal Boolean systems or data brand analyst commuter transmission contactless data data privacy encrypt infrared waves NFC QR code radio waves RFID
	5	Big Data 2 Children learn the difference between mobile data and WiFi and how data is transferred and use their understanding of big data to design their own smart school	Digital Literacy and Online Safety Selecting, using and combining a variety of software to design and create a range of programs, systems and content to collect, analyse, evaluate and present data.	big data bluetooth corrupt data digital revolution GPS infrared waves IoT QR code SIM computer simulation smart school/city
	6	Intro to Python Building on their knowledge of coding from previous years, children are introduced to the text-based programming language Python, which is the language behind many apps and programs, such as Dropbox	Computational Thinking Understanding that websites can be altered by exploring the code beneath the site. Designing, writing and debugging programs that accomplish specific goals Solving problems by decomposing them into smaller parts.	algorithm code (computer) computer command decompose import loop nested loop random numbers remix script libraries variable