South View Community Primary School

Our Computing Curriculum

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1. The basic principles of our curriculum

Learning is a change to long term memory.

Our aims are to ensure that our children experience a wide breadth of study and have, by the end of each Key Stage, long -term memory of an ambitious body of procedural and semantic knowledge.

2. Our curriculum intent

Curriculum Drivers shape our curriculum breadth. They are derived from an exploration of the backgrounds of our children, our beliefs about high quality education and our values. They are used to ensure we give our children appropriate and ambitious curriculum opportunities. Our curriculum drivers, enabling us to ensure OUR children get what THEY need from us are that:

- Our children will develop vocabulary so that they are able to speak and understand spoken language, access more complex texts and write with eloquence.
- Our children will leave South View as successful readers. They will 'learn to read' and consequently 'read to learn'.
- Our children will explore their own cultures, surroundings and emotions and those of others, to gain a wider understanding of the world and their place within it.

3. Computing intent

Our Computing Curriculum is designed to –

Instil a sense of enjoyment, confidence and inquisitiveness.

- Learn about the capabilities, and the range of, technology available to use. Wonder about what future technology will offer.
- Understand the opportunities being digitally literate offers.
- Create, manage, organise and collaborate both within the school curriculum and the wider world.
- Develop confidence and curiosity when encountering new technology and software.
- Provide the vital skills needed in the ever-evolving landscape of technology.

Ensure our children use technology positively, responsibly and safely.

- Explicitly teach the importance of E-safety in every year group.
- Intervene with bespoke lessons for individuals, groups and cohorts as needed.
- Keep parents informed about emerging technologies, websites and Apps – both the opportunities and the risks.
- Understand that everyone using technology, and social media, has choices about what they present, share and view.
- Understand the concept of bias when using technology and how this can influence what is being viewed on-line.
- Teach the skills and strategies needed to be responsible online citizens both now and in the future.

Develop the next generation of creators, coders, users, designers and software engineers.

- Ensure all children have regular access to digital devices.
- Provide our children with digital competence and a range of transferable skills.
- Children who are ready to continue their computing journey into secondary education, and through to future workplaces.

4. Meeting the needs of all children in Computing

SEND in Computing:

Cognition and Learning

Subject Challenges for SEND

- Accessing the programmes for the curriculum – understanding how to use them.
- Processing or cognitive difficulties including literacy needs

Provision for SEND

- Differentiation in action during lessons
- Scaffolding or small group support with teacher/TA
- Stem sentences / key vocabulary
- Screen readers

Communication and Interaction

Subject Challenges for SEND

- Understanding order to complete the task
- Key vocabulary understanding and ability to process language

Provision for SEND

- Visual representation of instructions/task
- Opportunities to work with or ask a friend or the teacher.

- Stem sentences / key vocabulary displayed clearly with dual coding and in knowledge organisers
- Working collaboratively across different devices
- Google Translate for all websites
- Screen readers

Physical and sensory

Subject Challenges for SEND

- Bright lights on the computer
- Noisy websites/applications
- Font and font size
- Keyboard skills

Provision for SEND

- Adjustable brightness
- Headphones available
- Individual logins (where needed) with personalised font/font size
- Voice to text add-ons

Social Emotional and Mental Health

Subject Challenges for SEND

- Finding things tough – particularly when error messages occur or something doesn't work
- Internet safety

Provision for SEND

- If unsure, always click cancel
- Clear instructions to support difficult processes
- Using programs that can help with mental health needs – e.g. Ollee, Kooth

Characteristics of Greater Depth Computing:

- Children who approach problem solving situations with persistence, resilience and confidence.
- Children who take part in extra-curricular activities inside or outside of school to further strengthen their computing skills. E.g. Touch type, create PowerPoint presentations for the class.
- Children who have a firm grasp of Microsoft products (Word, PowerPoint, Excel etc.) and can use or combine these for a variety of purposes.
- Children who show a comprehensive understanding of coding and can work with various forms of input and output confidently.
- Children who are able to confidently evaluate the validity of a website and can state the source of the information found on the internet.
- Children who know how to navigate the internet safely and effectively and know what a problem looks like and how to report it immediately.
- Children who fully understand, explore and apply skills and ideas in different ways, in different situations and in different subjects.
- Children who can apply their knowledge from other subjects to help them solve technological problems.
- Children who are able to constantly review, analyse and evaluate their work and will make improvements without being asked.

5. Computing long term plan

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	Set up continuous provision in your classroom: Computing through continuous provision.	Computing systems and networks, Using a computer Learning about the main parts of a computer and how to use the keyboard and mouse. Learning how to log in and out.	Programming 1 All about instructions The children learn to receive and give instructions and understand the importance of precise instructions.	Computing systems and networks Exploring hardware Tinkering and exploring with different computer hardware and learning to operate a camera.	Programming 2 Programming Bee-Bots Children learn about directions, experiment with programming a Bee-bot/Blue-bot and tinker with hardware.	Data handling Introduction to data Children sort and categorise data and are introduced to branching databases and pictograms.
Year 1	Computing systems and networks Improving mouse skills Learning how to log in and navigate around a computer; developing mouse skills; learning how to drag, drop, click and control a cursor to create works of art.	Online Safety Lesson 1 To know what the internet is and how to use it safely.	Programming 1 Algorithms unplugged. Algorithms, decomposition and debugging are made relatable to familiar contexts, following directions, and learning why instructions need to be specific.	Online Safety Lesson 2 To understand different feelings when using the internet.	Programming 2 Bee-Bots Introducing programming through the use of a Bee-Bot and exploring its functions. ramming 2	Online Safety Lesson 3 To understand how to treat others, both online and in-person.	Data handling Introduction to data Learning what data is and the different ways it can be represented. Learning why data is useful and the ways it can be gathered and recorded. can be gathered and recorded.	Online Safety Lesson 4. To understand the importance of being careful about what we post and share online.
Year 2	Computing systems and networks What is a computer? Exploring what a computer is by identifying how inputs and outputs work and how computers are used in the wider world to design their own computerised invention	Programming 1 Algorithms and debugging Developing an understanding of; what algorithms are, how to program them and how they can be developed to be more efficient, introduction of loops.	Online Safety Lesson 1 I know what happens to information posted online	Computing systems and networks Word processing Learning about word processing and developing touch typing skills. Introducing keyboard shortcuts and simple editing tools.	Online Safety Lesson 2 To know how to keep things safe and private online	Online Safety Lesson 3 To explain what should be done before sharing information online	Programming 2 Scratch Jr Exploring what 'blocks' do' by carrying out an informative cycle of predict > test > review. Programming a familiar story and make a musical instrument.	Online Safety Lesson 4 To explain why I have the right to say no and deny permission.	Creating media Stop Motion Learning how to create simple animations from storyboarding creative ideas.	Online Safety Lesson 5 To learn strategies that will help me decide if something I see online is true or not

	Autumn 1		Autumn 2		Spring 1		Spring 2		Summer 1		Summer 2	
Year 3	Computing systems and networks Networks and the internet Learning what a network is, how devices communicate, how information is shared and identifying components.		Programming Scratch Exploring the programme Scratch, following the predict > test > review cycle. Learning about 'loops' and programming an animation, story and game.		Computing systems and networks Emailing Sending emails with attachments and learning how to be a responsible digital citizen. Understanding what cyberbullying is.	Online Safety Lesson 1 To understand how the internet can be used to share beliefs, opinions and facts.	Computing systems and networks Journey inside a computer Assuming the role of computer parts and creating paper.	Online Safety Lesson 2 To understand the effects that some internet use can have on our feelings and emotional wellbeing.	Creating media Video trailers Developing digital video skills to create trailers, with special effects and transitions.	Online Safety Lesson 3 To understand the ways personal information can be shared on the internet.	Data handling Comparison cards databases Learning what a database is and their key components, such as records, fields and data. Further developing the ability to sort and filter data.	Online Safety Lesson 4 To understand the rules for social media platforms.
Year 4	Computing systems and networks Collaborative learning Learning how to work collaboratively and exploring a range of collaborative tools.	Online Safety lesson 1 To describe how to search for information within a wide group of technologies and make a judgement about the probable accuracy.	Programming 1 Further coding with Scratch Exploring Scratch further by revisiting its key features and introducing the concept and execution of using 'variables' in code scripts.	Online Safety Lesson 2 To describe some of the methods used to encourage people to buy things online.	Creating media Website design Developing research, word processing and collaborative working skills whilst learning how web pages and sites are created. Learning to embed media and links.	Online Safety Lesson 3 To explain why lots of people sharing the same opinions or beliefs online do not make those opinions or beliefs true.	Skills showcase HTML Learning about the mark-up language behind a webpage; becoming familiar with HTML tags, changing HTML and CSS code to alter images and 'remix' a live website.	Online Safety Lesson 4 To explain that technology can be designed to act like or impersonate living things.	Programming 2 Computation-al thinking Solving problems effectively using the four areas of abstraction, algorithm design, decomposition and pattern recognition.	Online Safety Lesson 5 To explain how technology can be a distraction and identify when I might need to limit the amount of time spent using technology.	Data handling Investigating weather. Researching and storing data using spreadsheets; designing a weather station that gathers and records data; learning how weather forecasts are made	Online Safety Lesson 6 To understand how to be safe and respectful online.

	Autumn 1		Autumn 2		Spring 1		Spring 2		Summer 1		Summer 2	
Year 5	Computing systems and networks Search engines Learning: to search using keywords and phrases, to identify inaccurate information, how PageRank works and how to credit their sources.		Programming 1 Programming music Building-on programming and music skills to create different sounds, beats and melodies which are put to the test with a Battle of the Bands performance!	Online Safety Lesson 1 To understand how apps can access our personal information and how to alter the permissions	Data handling Mars Rover 1 Learning about the Mars Rover, exploring how and why it transfers data including instructions, and how messages can be sent using binary code	Online Safety Lesson 2. To be aware of the positive and negative aspects of online communication.	Programming 2 Micro: bit Creating algorithms and programs that are used in the real world. Using the 'predict, test and evaluate' cycle to create and debug programs with specific aims.	Online Safety Lesson 3. To understand how online information can be used to form judgements	Creating media Stop motion animation Creating animations, storyboard ideas and decomposing a story into small parts before putting together to create the illusion of a moving image.	Online Safety Lesson 4. To discover ways to overcome bullying.	Skills showcase Mars Rover 2 Exploring how the Mars rover: moves, follows instructions, collects and sends data; understanding how computers work, what data is and how it is transferred.	Online Safety Lesson 5. To understand how technology can affect health and wellbeing.
Year 6	Data handling Big data 1 Identifying how barcodes and QR codes work. Learning how infrared waves are used for the transmission of data while recognising the uses of RFID.	Online Safety Lesson 1 To describe issues online that give us negative feelings and know ways to get help.	Data handling Big data 2 Further developing understanding of how networks and the Internet are able to share information. Learning how big data can be used to design smart buildings	Online Safety Lesson 2 To think about the impact and consequences of sharing online.	Programming Intro to Python Using the programming language 'Python' to create designs and art. Learning how to create loops and nested loops to make their code more efficient.	Online Safety Lesson 3 To know how to create a positive online reputation.	Computing systems and networks Bletchley Park Discovering the history of Bletchley and learning about code breaking and password hacking. Demonstrating digital literacy skills by creating presentations.	Online Safety Lesson 4 To be able to describe how to capture bullying content as evidence.	Creating media History of computers Writing, recording and editing radio plays set during WWII, learning about how computers have evolved from being larger than a room to fitting into the palm of our hand.	Online Safety Lesson 5 To manage personal passwords effectively.	Skills showcase Inventing a product Designing a product, pupils: evaluate, adapt and debug code to make it suitable for their needs and designing products in CAD and creating a website and video.	Online Safety Lesson 6 To be aware of strategies to help be protected online.

6. Computing knowledge progression

Computer Science					
Hardware					
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Learning how to explore and tinker with hardware to find out how it works. Understanding that computers and devices around us use inputs and outputs, identifying some of these. Learning where keys are located on the keyboard. Learning how to operate a camera .	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 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 what a server does .	Learning about the purpose of routers .	Learning that external devices can be programmed by a separate computer. Learning the difference between ROM and RAM. Recognising how the size of RAM affects the processing of data. Understanding the fetch, decode, execute cycle .	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. Acknowledging that corruption can happen within data during transfer (for example when downloading, installing, copying and updating files)
Networks and data representation					
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Understanding what the internet is.		Learning what a network is and its purpose. Identifying the key components within a network, including whether they are wired or wireless. Recognising links between networks and the internet.	Consolidating understanding of the key components of a network. Understanding that websites & videos are files that are shared from one computer to another. Learning about the role of packets.	Learning the vocabulary associated with data: data and transmit. Learning how the data for digital images can be compressed. Recognising that computers transfer data in binary and	Understanding that computer networks provide multiple services.

		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 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 8 characters and carrying out binary calculations. Understanding how bit patterns represent images as pixels	
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
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. Learning that an algorithm is a set of step by step Instructions used to carry out a task, in a specific order. Follow 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. Using decomposition to decompose a story into smaller parts. Learning what abstraction is. Learning that there are different levels of abstraction. Explaining what an algorithm is. Following an algorithm. Creating a clear and precise algorithm. Learning that computers use algorithms to make predictions.	Using decomposition to explain the parts of a laptop computer. Using decomposition to explore the code behind an animation. Using repetition in programs. Understanding that computers follow instructions. Using an algorithm to explain the roles of different parts of a computer. Using logical reasoning to explain how simple algorithms work. Explaining the purpose of an algorithm. Forming algorithms independently.	Solving unplugged problems by decomposing them into smaller parts. Using decomposition to understand the purpose of a script of code. Using decomposition to help solve problems. 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. Creating algorithms for a specific purpose.	Decomposing animations into a series of images. Decomposing a program without support. Decomposing a story to be able to plan a program to tell a story. 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.

	Learning that programs execute by following precise instructions. Incorporating loops within algorithms.				

Programming					
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Programming a Bee bot/Virtual Bee-bot to follow a planned route. Learning to debug instructions when things go wrong. Developing a how-to video to explain how the Bee-bot works. Learning to debug an algorithm in an unplugged scenario.	Using logical thinking to explore software, predicting, testing and explaining what it does. Using an algorithm to write a basic computer program. Learning what loops are. Incorporating loops to make code more efficient.	Using logical thinking to explore more complex software; predicting, testing and explaining what it does. Incorporating loops to make code more efficient. Remixing existing code. Using a more systematic approach to debugging code, justifying what is wrong and how it can be corrected.	Understanding that websites can be altered by exploring the code beneath the site. Coding a simple game. Using abstraction and pattern recognition to modify code. Incorporating variables to make code more efficient. Remixing existing code. Using a more systematic approach to debugging code, justifying what is wrong and how it can be corrected.	Programming an animation. Iterating and developing their programming as they work. Beginning to use nested loops (loops within loops). Debugging their own code. Writing code to create a desired effect. Using a range of programming commands. Using repetition within a program. Amending code within a live scenario.	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. Changing a program to personalise it. Evaluating code to understand its purpose. Predicting code and adapting it to a chosen purpose. Altering a website's code to create changes.

Information Technology

Using Software

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Using a basic range of tools within graphic editing software. Taking and editing photographs. Understanding how to create digital art using an online paint tool.	Developing word processing skills, including altering text, copying and pasting and using keyboard shortcuts.	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. Designing and creating a webpage for a given purpose. Use software for documents, presentations, forms and spreadsheets.	Using logical thinking to explore software more independently, making predictions based on their previous experience. Using a software programme (Sonic Pi or Scratch) to create music.	Using logical thinking to explore software independently, iterating ideas and testing continuously. Using search and word processing skills to create a presentation.

Developing control of the mouse through dragging, clicking and resizing of images to create different effects. Developing understanding of different software tools	Using word processing software to type and reformat text. Using software to create story animations. Creating and labelling images.		Work collaboratively with others.	Using video editing software or animation software to animate. Identify ways to improve and edit programs, videos, images etc. Independently learning how to use 3D design software package TinkerCAD.	Planning, recording and editing a radio play. Creating and editing sound recordings for a specific purpose. Creating and editing videos, adding multiple elements: music, voiceover, sound, text and transitions to create a video advert. Using design software TinkerCAD to design a product. Creating a website with embedded links and multiple pages.
Using email and the internet					
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Searching and downloading images from the internet safely. Understanding that we are connected to others when using the internet.	Understanding that personal information should not be shared on the internet. Learning how to be respectful to others when sharing content online.	Learning to log in and out of an email account. Writing an email including a subject, 'to' and 'from'. Sending an email with an attachment. Replying to an email. Identifying useful terms and phrases for search engines.	Understanding why some results come before others when searching. Understanding that information on the internet is not all grounded in fact.	Developing searching skills to help find relevant information on the internet. Understanding how apps can access our personal information and how to alter the permissions.	Understanding how search engines work.
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Introduction to spreadsheets. Representing data in tables, charts and pictograms. Sorting data and creating branching databases. Identifying where digital content can have advantages over paper when storing and manipulating data.	Collecting and inputting data into a spreadsheet. Interpreting data.	Understanding the vocabulary associated with databases: field, record, data. Learning about the pros and cons of digital versus paper databases. Sorting and filtering databases to easily retrieve information.	Designing a weather station which gathers and records sensor data.	Understanding how data is collected.	Understanding how barcodes, QR codes and RFID work. Gathering and analysing data in real time. Creating formulas and sorting data within spreadsheets.

		Creating and interpreting charts and graphs to understand data.			
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Recognising common uses of information technology, including beyond school. Understanding some of the ways we can use the internet.	Learning how computers are used in the wider world.	Understanding the purpose of emails. Learning what a search engine is. Recognising how social media platforms are used to interact.	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 about the Internet of Things and how it has led to 'big data'. Learning how 'big data' can be used to solve a problem or improve efficiency.

Digital literacy					
Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Logging in and out and saving work on their own account. Understand the importance of a password. When using the internet to search for images, learning what to do if they come across something online that worries them or makes them feel uncomfortable. Recognising when someone has been unkind online. Learning some top tips for staying safe online. Understanding how we 'share' information on the internet.	Understanding that personal information should not be shared on the internet. Learning how to be respectful to others when sharing content online.	Learning to be a responsible digital citizen; understanding their responsibilities to treat others respectfully and recognising when digital behaviour is unkind. Learning about cyberbullying. Learning that not all emails are genuine, recognising when an email might be fake and what to do about it. Learning that not all information on the internet is factual. Understanding who personal information should/ should not be shared with.	Recognising what appropriate behaviour is when collaborating with others online. Recognising that information on the internet might not be true or correct and that some sources are more trustworthy than others. Learning about different forms of advertising on the internet.	Learning about how permissions work and how to change them. Identifying possible issues with online communication. Considering the effects of screen-time on physical and mental wellbeing. Learning about online bullying and where to seek advice.	Understanding the importance of secure passwords and how to create them, along with two-step Authentication. Using search engines safely and effectively. Recognising that updated software can help to prevent data corruption and hacking. Considering their digital footprint and online reputation and future implications they may have. Learning about how to collect evidence and report online bullying concerns.

7. Vocabulary

Computing vocabulary

Year 1

Computing systems and networks: Improving mouse skills

account, clipart, computer, log on, log off, mouse, password, resize, screen (monitor), software, tool, username

Programming 1: Algorithms unplugged

algorithm, bug, computer, debug, decompose, device, input, instructions, output, solution

Skills showcase: Rocket to the moon

computer, computer program, create, data, digital content, e-document, folder, list, save, sequence, share, spreadsheet

Programming 2: Bee-Bots

algorithm, Bee-Bot, computing code, computer program, explain, explore, instructions, predict, tinker, video, virtual

Creating media: Digital imagery

camera, collage, crop, delete, download, drag and drop, editing software, image, image filter, import, online, photo, resize, save as, search engine, sequence, storage space, visual effects

Data handling: Introduction to data

branching database, categorise, chart, computer, data, information, label, pictogram, record, sort, table

Online safety

Camera, communicate, connect, console, devices, digital footprint, emotion, feelings, instructions, internet, internet safety, laptop, mood, online, personal information, phone, posting, predict, respect, sharing, smart device, smartphone, smart TV, smartwatch, strangers, tablet, trust, wired, wireless

Computing vocabulary

Year 2

Computing systems and networks 1: What is a computer?

battery, buttons, computer, desktop, device, electricity, input, invention, keyboard, laptop, screen (monitor), mouse, output, technology, wires

Programming 1: Algorithms and debugging

abstraction, algorithm, artificial intelligence, bug, correct, data, debug, decompose, error, key features, loop, predict, unnecessary

Computing systems and networks 2: Word processing

backspace, bold, copy, copyright, cut, delete, highlight, image, import, italics, keyboard, keyboard character, paste, redo, space bar, touch typing, underline, undo, word processing

Programming 2: Scratch Jr

algorithm, animation, bug, computer code, code (verb), debug, icon, imitate, instructions, loop, repeat, Scratch JR, sequence

Creating media: Stop motion

animation, animator, contraption, debugging, decompose, design, device, download, film review, filming, frame, import image, plan, onion skinning, sketch, software, stop motion, storyboard, upload

Data handling: International space station

approximate, astronaut, data, digital content, experiment, interactive map, International space station (I.S.S), interpret, laboratory, monitor (verb), satellite, sensor, space, survival, thermometer

Online safety

accept, comment, consent, content, emojis, offline, online, password, permission, personal information, private information, share, terms and conditions, trusted adult

Computing vocabulary

Year 3

Computing systems and networks 1: Networks and the internet

desktop, device, DSL (digital subscriber line), file, internet, laptop, network, network map, network switch, router, server, submarine cables, The Cloud, WiFi, wired, wireless, wireless access points

Programming: Scratch

animation, application, code, code block, debug, decompose, interface, loop, predict, program, remixing code, repetition code, review, Scratch, sprite, tinker

Computing systems and networks 2: Emailing

battery, buttons, computer, desktop, device, electricity, input, invention, keyboard, laptop, screen (monitor), mouse, output, technology, wires

Computing systems and networks 3: Journey inside a computer

algorithm, computer, computer program, CPU, (central processing unit) data, desktop, GPU (graphics processing unit), HDD (hard disk drive), QR code, RAM (random access memory), ROM (read only memory), tablet device, trackpad

Creating media: Video trailers

application, camera angle, clip, desktop, digital device, edit, film, film editing software, graphics, import (software), key events, laptop, music, photo, plan, recording (electronic), sound effects, storyboard, time code, trailer, video, voiceover

Data handling: Comparison cards databases

categorise, data, database, fields (data), filter (data), graphs and charts, information, record, sort, spreadsheet

Online safety

accurate, age restricted, autocomplete, beliefs, block, content, digital devices, fact, fake news, opinion, password, persuasive, privacy settings, reliable, report, requests, search engine, security questions, sharing, smart devices, social media platforms, social networking, wellbeing

Computing vocabulary

Year 4

Computing systems and networks: Collaborative learning

collaborate, comment, e-document, edit, email, icon, insert (file), link, presentation, presentation software, reply, reviewing comments, share, spreadsheet, transition

Programming 1: Further coding with Scratch

computer code, code block, conditional statement, decompose, direction, feature, icon, orientation, position, program (verb), Scratch project, Scratch, Scratch script, sprite, Scratch stage, tinker, variable

Creating media: Website design

collaboration, content, create, design, edit, embed, feature, header, hyperlinks, image, insert (file), online, plan, tab, web page, website, WWW (world wide web)

Skills showcase: HTML

code (verb), content, copyright, CSS (cascading style sheet), fake news, hacker, hex code, HTML (hypertext markup language), internet browser, permission, script, URL (uniform resource locator), web page

Programming 2: Computational thinking

abstraction, algorithm design, computer code, code block, computational thinking, computer, decompose, pattern recognition, problem, Scratch, Scratch script, sequence, variable

Data handling: Investigating weather

algorithm, atmosphere, automated machine, calculate, climate, design, device, forecast, input, log data, online, predict, record, sensor, source, spreadsheet, units of measurement, weather, weather satellite

Online safety

advertisement, alter, bot, fact, fake, gaming, implication, in-app purchases, influencer, judgement, live streaming, opinion, pop-ups, screen time, search engine, social media, snippet, sponsored

Computing vocabulary

Year 5

Computing systems and networks: Search engines

algorithm, company logo, data leak, data privacy, fake news, inaccurate information, index, keywords (internet), network, online, page rank, search engine, web crawler, website, WWW (world wide web)

Programming 1: Music

basic commands, block (Scratch), bug, computer code, code (verb), debug, error, live loop (Sonic Pi), loop, pitch, program language (Sonic Pi), rhythm, soundtrack, tempo, timbre, tinker

Data handling: Mars Rover 1

binary code, data, data transmission, discovery, distance, input, Mars Rover, moon, numerical data, output, planet, radio signal, research, scientist, sequence, signal, computer simulation, space (astronomy)

Programming 2: Micro:bit

.hex file, .zip file, bluetooth, code block, decompose, emulator, feature, loop, Micro:bit, pedometer, predict, program, systematic, tinker, USB universal serial bus), variable

Creating media: Stop motion

animation, animator, background, decompose, duplicate, editing, flipbook, frame, illusion, onion skinning, stop motion, storyboard, thaumatrope, upload, zoetrope

Skills showcase: Mars Rover 2

algorithm, binary image, bit, bit pattern, CAD (computer-aided design), compression file, CPU (central processing unit), data, digital image, encode, image, JPEG (joint photographic experts group), memory, operating system, pixels, RGB (red, green, blue)

Online safety

anonymity, application, bill payer, bullying, communication, emoji, gif, hack, interpreted, judgement, meme, mental health, misinterpreted, passwords, permissions, private information, reliable, reputation, trusted adult, victim, wellbeing

Computing vocabulary

Year 6

Computing systems and networks: Bletchley Park

acrostic code, brute force hacking, caesar cipher, chip and pin system, cipher, date shift cipher, encrypt, invention, Nth letter cipher, password, pigpen cipher, secure, technological advancement, trial and error

Programming: Introduction to Python

algorithm, computer code, computer command, decompose, import (software), indentation (programming), loop, nested loop, random numbers, remix, script libraries, variable

Data handling 1: Big data 1

barcode, boolean, brand, commuter, contactless, data, data privacy, encrypt, infrared waves, NFC (near field communication), QR (quick response) code, radio waves, RFID (radio frequency identification), signal systems or data analyst, transmission

Creating media: History of computers

background noise, byte, computer, CPU, device, gigabyte, kilobyte, megabyte, memory storage, mouse, operating system (OS), radio play, ROM, sound effects, terabyte, touch screen, trackpad

Data handling 2: Big data 2

big data, bluetooth, corrupt data, digital revolution, GPS (global positioning system), infrared waves, IoT (internet of things), QR code, RFID, SIM, smart city, smart school

Skills showcase: Inventing a product

adapt, advertisement, algorithm, bug, CAD, computer code, code (verb), design, edit, electronic components, image rights, image, information, input, invention, loop, output, photo, product, program, repetition (code), screenshot, selection (programming), sequence, structure, variable

Online safety

anonymity, anti-virus software, block, consent, digital footprint, digital personality, fake news, followers, gif, hack, inappropriate, malware, online bullying, online reputation, password, peer pressure, permission, phishing, privacy settings, report, scammers, screengrab, selfie, software updates, two-factor authentication, username, URL (Uniform Resource Locator)