Kidsgrove Primary School

Computing

Logic	Computational logic is the process of working step-by-step to understand a problem and develop a solution. It describes the decision-making process used in programming and writing algorithms.
Abstraction	Abstraction is an important part of computer programming. In computing, abstraction is the technique used to arrange computer systems and hide the complexity of programs to make it more accessible to the everyday user.
Machines	A computing machine is a device used to perform calculations and process data.
Algorithms	An algorithm is a process or set of rules followed in calculations or other problem-solving operations, especially by a computer.
Program	A computing program is a collection of instructions that performs a specific task when executed by a computer.
Data	Data is any sequence of one or more symbols given meaning by specific acts of interpretation. Computer data is information processed or stored by a computer.

Kidsgrove Primary School - COMPUTING progression through EYFS
Understanding the World: Computing Overview

Playing & Exploring - Engagement	Active Learning - Motivation	Creating & Thinking Critically - Thinking
• Finding out & exploring • Playing with what they know • Being willing to 'have a go'	• Being involved & concentrating • Keep on trying • Enjoying achieving what they set out to do	• Having their own ideas (creative thinking) • Making links (building theories) • Working with ideas (critical thinking)

ELG
NO ELGs are represented for this area.

Focus	Electronic Communication Understanding Technologies	Text and Multimedia	Research and E-Safety	Digital images and audio	Algorithms Handing information	Vocabulary- To be used daily.
Nursery Skills	• Shows an interest in technological toys with knobs or pulleys, real objects such as cameras, and touchscreen devices such as interactive screen, table top computer and tablets	• Knows how to operate simple equipment, e.g. turn on CD player, uses a remote control, can navigate touch-capable technology with support	• Know how to handle equipment safely • Begin to know that they shouldn't use devices without supervision	• Knows that information can be retrieved from digital devices and the internet	• Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images	Choices, equipment, buttons, movement, screen, keyboard, count, organise,
Nursery Knowledge	**Autumn** My Family and Me	**Autumn 2** A Special Place to Be	**Spring 1** Let's Go Exploring	**Spring 2** What a wonderful world	**Summer 1** Big and Small	**Summer 2** Superhero Adventures
	•Explore different toys in role play such as telephones, cameras, keyboards.	•Can operate a simple CD player by pressing start and stop to play music.	•Understands that we can search for information on 'google' by typing in a word to find out more.	•Can use a simple I board touch programme to draw a picture by changing tools and colours using the on-screen options.	•Can operate simple games on the iPad and know to open and end a programme.	Can follow instructions when operating a device

Kidsgrove Primary School - COMPUTING progression through EYFS
Understanding the World: Computing Overview

Playing & Exploring - Engagement	Active Learning - Motivation	Creating & Thinking Critically - Thinking
• Finding out & exploring • Playing with what they know • Being willing to 'have a go'	• Being involved & concentrating • Keep on trying • Enjoying achieving what they set out to do	• Having their own ideas (creative thinking) • Making links (building theories) • Working with ideas (critical thinking)

ELG
NO ELGs are represented for this area.

Focus	Electronic Communication Understanding Technologies	Text and Multimedia	Research and E-Safety	Digital images and audio	Algorithms Handing information	Vocabulary- To be used daily.
Reception Skills	• Completes a simple program on electronic devices	• Begin to list different IT in their home	• Begin to give reasons why we need to stay safe online • Can use the internet with adult supervision to find and retrieve information of interest to them	• Can create content such as a video recording, stories, and/or draw a picture on screen	• Develops digital literacy skills by being able to access, understand and interact with a range of technologies	Internet, website, mouse, images, paint, technology, share, collect, set, sound, communicate, videos, photos, programme

Reception Knowledge	Autumn 1 My Environment and Me	Autumn 2 Special Times and Places	Spring 1 Exploring and Changing	Spring 2 Growing and Changing	Summer Our World	
	•Can turn on an iPad or a Kindle to open a programme and follow instructions. •Can explain how to stay safe when using the internet.	•Can follow the teacher's instructions when using an online interactive programme such as paint or draw.	•To collect information about the measurement of plants and see which was the best environment for growing in.	•Can write a variety of CVC words using a keyboard.	•Can use the iPad or Kindle to take their own images •Can send a group class email to a different class and wait for a response.	•Can use 'Google' to find out more information about animals and use the images to support their own representations. .

E-Safety	Computer Skills	Programming	Word Processing skills	Data Collection

Children to be exposed to key vocabulary daily in provision. High quality resources will be provided for daily accessibility.
Role-play areas will be a key area where a range of technologies will be used in play- telephones, microwaves, cookers, keyboards, tills. These should be modelled.

Children to be exposed to key vocabulary daily in provision. High quality resources will be provided for daily accessibility.
Role-play will be a key area where a range of technologies will be used in play - telephones, microwaves, cookers, keyboards. These should be modelled.
Interactive screen and table top computer as part of continuous provision

KS1: Cycle A	
NC states that in KS1, Pupils should be taught to: • understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions • create and debug simple programs • use logical reasoning to predict the behaviour of simple programs • use technology purposefully to create, organise, store, manipulate and retrieve digital content • recognise common uses of information technology beyond school • use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies	Digital Literacy • Know how to log in safely and use school devices responsibly. • Understand why we use **passwords** and why they must be kept private. • Recognise common uses of technology at school, at home, and in the wider world. • Understand that the Internet allows us to access information and communicate with others. • Use search engines safely to find appropriate information with adult support. • Know that personal information should be kept private and that we must act responsibly online. • Identify trusted adults and know where to seek help if worried about online content or contact. • Understand what an **avatar** is and how it can be used to represent ourselves safely online. • Use technology respectfully, taking turns, following rules, and treating others kindly when online or using shared devices.
Computer Science • Understand that an **algorithm** is a set of instructions to achieve a goal. • Create and follow simple algorithms, including for real-life tasks and digital activities. • Program simple digital devices (e.g., Bee-Bots or on-screen characters) using clear step-by-step instructions. • Understand that programs run by **executing commands in sequence**. • Use basic programming concepts such as **sequence**, **direction**, and **movement**. • Predict the behaviour of simple programs by using logical reasoning. • Debug simple programs by identifying and fixing mistakes in a sequence of instructions. • Use programmable tools or apps to complete tasks linked to stories, journeys, or challenges. • Begin to understand that different programs can achieve different outcomes depending on the instructions used.	Information Technology • Use technology purposefully to **create**, **store**, and **edit** digital content. • Use simple tools to create digital writing, drawings, photos, audio, or video. • Use a range of digital applications to complete tasks (e.g., typing text, adding images, recording sound). • Understand that digital content can be saved, opened, and improved over time. • Use simple data-handling tools (e.g., pictograms or simple spreadsheets) to enter and organise information. • Sort items using digital tools and recognise that computers can help organise information. • Present information using simple layouts, templates, or features appropriate to the content. • Understand that digital content created for one purpose can be reused in different wa

KS1 Cycle A			
	Skills	Knowledge	End Points
Unit 1 – Online Safety (Year 1)	Understand what personal information is and why it must be kept private. • Recognise safe and unsafe online behaviours. • Identify trusted adults who can help. • Begin to understand what to do if something online feels wrong.	• The internet can be used safely with rules. • Personal information includes name, school, address, photos. • People online are not always who they say they are.	• Follow simple online safety rules. • Identify trusted adults. • Know what personal information is and when not to share it
Unit 2 – Algorithms Unplugged – Programming (Year 1)	• Follow simple sets of instructions. • Create algorithms using everyday movements. • Debug simple mistakes in sequences. • Use directional language (forwards, backwards, turn).	• An algorithm is a set of instructions. • Debugging means fixing mistakes. • Computers follow precise instructions	• Create and debug simple algorithms. • Follow and give instructions using clear steps.
Unit 3 – Rocket To The Moon – Skills Showcase (Year 1)	• Use basic digital tools (drag, drop, click). • Create simple digital content (images, labels). • Organise information for a purpose.	• Computers allow information to be created, saved and shared. • Digital images can represent real objects.	• Produce simple digital work using basic tools. • Explain choices when creating digital content.

Unit 4 – What Is A Computer? (Year 2) -	• Identify parts of a computer: mouse, keyboard, screen. • Sort digital devices into input and output functions. • Use simple programs independently.	• Computers take inputs, process them and produce outputs. • Digital devices include tablets, phones, laptops.	• Identify common computer components. • Explain the difference between input and output.
Unit 5 – Algorithms & Debugging – Programming (Year 2)	• Create programs with simple sequences. • Identify and fix errors in digital code. • Use block-based interfaces to control characters or objects.	• Programs must follow logical sequences. • Debugging improves and corrects programs	• Create accurate sequences using block code. • Debug errors successfully.
Unit 6 – Introduction To Data – Data Handling (Year 1)	• Sort objects into simple categories. • Create pictograms or tally charts with support. • Interpret simple data ("which has more?").	• Data can be represented visually. • Charts help us understand information.	• Create a simple pictogram. • Answer simple questions about data.

Cycle A - Key Vocabulary		
Digital literacy	Information technology	Computer science
Internet, online / offline, personal information, safe / unsafe, trusted adult, kindness, feelings, screen time, sharing	digital content,text, image, keyboard, mouse / trackpad, save, open,edit	Algorithm, instruction, sequence, program, predict., debug, robot / device, command

KS1: Cycle B

NC states that in KS1, Pupils should be taught to:

- understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs
- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- recognise common uses of information technology beyond school
- use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies

Digital Literacy

- Understand that not everything online is true and begin to identify **reliable** sources with adult support.
- Learn how to stay safe when communicating online, including what is appropriate to share.
- Recognise different kinds of online communication (e.g., messaging, video calls, class platforms).
- Use rules for staying safe online, including keeping personal information private and asking an adult if unsure.
- Understand what to do if they see something upsetting or unexpected online and know who to tell.
- Show respectful behaviour when using technology, including being kind and polite in online spaces.
- Know that the Internet stores large amounts of information and that people create this content.
- Begin to understand that some websites require accounts and that accounts must be used responsibly.

Computer Science

- Understand that **algorithms can be represented in different ways**, including as pictures, symbols, and simple flow diagrams.
- Create simple programs using block-based software or apps (e.g., ScratchJr), including adding **sequence**, **actions**, and **events**.
- Use logical reasoning to explain why a program works or what might happen when instructions are changed.
- Experiment with changing sprites, sounds, backgrounds or effects to modify how a program runs.
- Debug programs by identifying unexpected behaviour and correcting errors in instructions.
- Use simple repetition or repeated actions where appropriate (e.g., a character moving several steps).

Information Technology

- Use technology to create content for a specific purpose, such as posters, e-books, animations, or simple presentations.
- Select digital tools that are suitable for a given task and explain their use (e.g., choosing paint tools, typing tools, or filming tools).
- Combine different types of digital media (text, images, sound) in a single piece of work.
- Develop keyboard and mouse/touch skills, including typing simple sentences and editing them.
- Capture and edit digital images or videos using basic tools such as crop, resize, rotate or add simple effects.
- Collect and record data using simple tally apps, pictogram tools, or surveys.
- Recognise that devices store information and understand how to save, open, and organise files.

• Understand that digital devices follow instructions **exactly**, and that small changes can alter a program's outcome. • Begin to use correct vocabulary such as **algorithm**, **command**, **event**, **sequence**, and **debug** when describing programs	• Understand that digital content can be improved and refined through reviewing and editing.

KS1 Cycle B			
	Skills	**Knowledge**	**End Points**
Unit 1 – online safety (year 2)	• Understand how to stay safe online for longer periods. • Recognise risks such as pop-ups or unknown messages. • Know how to report concerns.	Information online can be true or false. • Some websites are not appropriate.	• Explain what to do if something online worries them.
Unit 2 – bee-bots – programming (year 1)	• Create sequences to move a robot. • Use directional language and simple programming buttons. • Debug routes and correct errors.	• Robots follow instructions exactly. • Sequences must be accurate to reach targets.	Program a Bee-Bot to reach a destination
Unit 3 – digital imagery – creating media (year 1)	• Take photos using a device. • Edit simple digital images (crop, rotate, add labels).	• Digital images can be changed. • Photos can tell a story.	Create and edit a digital image.
Unit 4 – scratch jr – programming (year 2) -	• Use Scratch Jr blocks to create simple animations. • Combine movement, sound and appearance blocks. • Debug simple programs.	• Block coding controls characters. • Sequences affect character behaviour.	• Create a simple animation in Scratch Jr.
Unit 5 – stop motion – creating media (year 2)	• Capture photos in sequence for animation. • Use simple editing tools to play back animations.	• Stop motion uses many still images to create movement.	• Create a basic stop motion clip.
Unit 6 – international space station – data handling (year 2)	• Enter data into simple tables. • Create charts using software. • Interpret data in context.	• Data helps solve real problems. • Charts show information clearly.	• Create a chart and answer questions using data.

KS1 Cycle B - Key Vocabulary		
Digital literacy	Information technology	Computer science
assword, private, website ,search, online behaviour, permission, report, reliable	Data, organise, sort, file, folder, record, media, audio / photo / video,	Algorithm, block / instruction, program, pattern, event, test,fix, logical reasoning Information Technology – Core Vocabulary

LKS2: Cycle A

NC states that in KS2, Pupils should be taught to: • design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • use sequence, selection, and repetition in programs, work with variables and various forms of input and output • use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • understand 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 • use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	Digital Literacy • Understand online safety expectations for Y3, including keeping passwords private and recognising safe/unsafe messages. • Use email responsibly, understanding how to behave politely and safely online. • Recognise how networks such as the Internet help people share information.
Computer Science • Use Scratch to create sequences and animations, building simple games or interactive scenes. • Begin to use selection and repetition blocks within Scratch programs. • Debug Scratch projects by identifying errors and making improvements. • Understand how digital devices send and receive information (computing systems and networks).	Information Technology • Use Scratch to create sequences and animations, building simple games or interactive scenes. • Begin to use selection and repetition blocks within Scratch programs. • Debug Scratch projects by identifying errors and making improvements. • Understand how digital devices send and receive information (computing systems and networks).

LKS2: Cycle B end points

LKS2 Cycle A			
	Skills	**Knowledge**	**End Points**
Unit 1 – Online Safety (Year 3)	• Recognise online risks such as cyberbullying and fake information. • Understand what a digital footprint is. • Create strong passwords and keep them secure. • Identify safe ways to communicate online.	• Online behaviour leaves a permanent digital trace. • Not all online information is reliable. • Personal information must be protected	• Explain what a digital footprint is. • Identify unsafe online behaviours and know how to respond.
Unit 2 – Emailing – Computing Systems & Networks (Year 3)	• Use email safely and respectfully. • Compose, send and reply to emails. • Recognise the importance of subject lines and clear messages. • Understand CC and attachments.	• Email is a form of digital communication. • Networks allow devices to communicate. • Online messages must be respectful and appropriate.	• Send a safe, structured email following digital etiquette.
Unit 3 – Scratch – Programming (Year 3)	• Create sequences using Scratch blocks. • Program sprites to move, speak and interact. • Debug errors in scripts. • Use repeat loops for efficiency.	• Code follows logical steps. • Loops shorten repeated actions. • Debugging improves accuracy.	• Create a functioning Scratch project using loops and sequences
Unit 4 – Video Trailers – Creating Media (Year 3)	• Plan storyboards for trailers. • Capture and edit video clips (trim, add transitions, add sound). • Use digital tools to create mood and atmosphere.	• Media choices influence audience reaction. • Videos combine visuals, sound and sequencing.	• Create a short edited trailer with purposeful effects.
Unit 5 – Website Design – Creating Media (Year 4)	• Explore website structure: homepage, navigation. • Create pages using headings, images and links. • Edit layouts for clarity and usability. • Evaluate the effectiveness of web pages.	• Websites communicate information to users. • Navigation links allow movement between pages.	• Create a simple website with clear structure and working links.
Unit 6 – Further Coding With Scratch – Programming (Year 4)	• Use selection blocks (if/then) to control outcomes. • Combine sequences, loops and selection. • Test and debug complex scripts. • Plan more advanced Scratch projects.	• Selection lets programs make decisions. • Variables store information within programs.	• Create an interactive Scratch program using selection and variables.

LKS2 Cycle A - Key Vocabulary		
Digital literacy	Information technology	Computer science
online safety, digital footprint, cyberbullying, communication, secure password, identity, permission	email, attachment, webpage, hyperlink, multimedia, timeline, edit, export	algorithm, sequence, sprite, event, loop/repetition, selection, debug, input/output

NC states that in KS2, Pupils should be taught to: • design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • use sequence, selection, and repetition in programs, work with variables and various forms of input and output • use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • understand 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 • use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	Digital Literacy • Understand Y4 online safety expectations, including recognising online risks and knowing how to report concerns. • Work collaboratively online, recognising how shared digital spaces require responsible behaviour. • Understand how computers connect and the importance of networks in everyday life.
Computer Science • Explore computer components and understand how a computer processes information. • Use sequences and commands in Scratch to create events and animations (Y4 programming expectations). • Debug programs by identifying where code does not run as expected.	Information Technology • Use data-handling tools to create simple databases and sort, filter or search information. • Collect and present weather data using digital tools. • Use simple HTML editing skills to create or adapt webpages. •

LKS2 Cycle B			
	Skills	**Knowledge**	**End Points**
Unit 1 – Online Safety (Year 4)	• Understand plagiarism and copyright. • Identify secure websites (HTTPS, padlock). • Manage privacy settings. • Recognise persuasive design in apps and games.	• Online content belongs to creators. • Security features protect users	Explain how to stay safe and respectful online.
Unit 2 – Comparison Cards & Databases – Data Handling (Year 3)	• Sort and organise information. • Create simple branching databases. • Ask yes/no questions to classify items.	• Databases store and sort information. • Branching databases classify objects based on questions.	• Create a branching database with clear yes/no questions.
Unit 3 – Journey Inside A Computer – Computing Systems & Networks (Year 3)	• Describe how computers store and process information. • Identify inputs, processes and outputs. • Explain how networks connect computers.	• Computers follow programs stored in memory. • Networks allow sharing of data.	• Explain how information moves through a computer system.

Unit 4 – Collaborative Learning – Computing Systems & Networks (Year 4)	• Work collaboratively using online shared documents. • Comment constructively and edit shared content. • Use digital communication respectfully.	• Cloud platforms allow real-time collaboration. • Online teamwork requires respectful communication.	• Produce shared digital work using cloud tools.
Unit 5 – Investigating Weather – Data Handling (Year 4)	• Data helps answer real-world questions. • Digital tools improve accuracy.	• Data helps answer real-world questions. • Digital tools improve accuracy.	• Produce charts and interpret weather data
Unit 6 – Html – Skills Showcase (Year 4)	• Edit HTML tags to control layout, text and images. • Create simple webpages using code. • Understand structure: <html>, <body>, <head>. • Modify colours, fonts and hyperlinks.	• HTML is a markup language. • Tags instruct the browser how to display content.	• Produce a functioning webpage using HTML tags.

LKS2 Cycle A - Key Vocabulary		
Digital literacy	Information technology	Computer science
reliability, safe searching, respectful communication, online collaboration, digital responsibility, age restrictions	database, record, field, table, sensor, data logger, HTML, tag	network, server, CPU, memory, input, output, sequence, variable

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Upper Key Stage 2 – Cycle A	
NC states that in KS2, Pupils should be taught to: • design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • use sequence, selection, and repetition in programs, work with variables and various forms of input and output • use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • understand 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 • use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	**Digital Literacy** • Understand online safety expectations for Y5, including safe communication and managing online identities. • Recognise how digital systems store, transfer and protect information. •
Computer science • Use Micro:bit to create programs involving inputs, outputs, loops and simple variables. • Understand encryption and code-breaking through the Bletchley Park unit. • Use logical reasoning to test and explain how more complex programs work.	Information Technology • Use data-handling tools to analyse and present information (Mars Rover 1 & 2). • Create digital media linked to computing history, including images, layouts and written information. •

UKS2 Cycle A			
	Skills	**Knowledge**	**End Points**
Unit 1 – Online Safety (Year 5)	• Analyse online risks, including phishing, scams and misinformation. • Create strong, memorable passwords and manage them securely. • Understand the impact of online behaviour on others. • Explain the consequences of sharing inappropriate content.	• Online content may be biased, misleading or harmful. • Privacy settings help protect users. • Online behaviour can have real-world consequences.	• Explain digital risks and how to manage them effectively.
Unit 2 – Micro:Bit – Programming (Year 5)	• Use block-based programming to control LEDs, inputs and outputs. • Create programs using loops, selection and variables. • Debug increasingly complex programs. • Upload code to a Micro:bit device.	• Microcontrollers follow program instructions. • Variables store changing data. • Inputs and outputs allow devices to interact with users.	• Create a functioning Micro:bit program that uses input/output.
Unit 3 – Mars Rover 1 – Data Handling (Year 5)	• Use spreadsheets to collect, organise and analyse data. • Enter formulas to automate calculations. • Present findings using charts and graphs. • Interpret data to make predictions.	• Spreadsheets allow efficient data handling. • Formulas automate repeated processes.	• Use spreadsheets to collect and analyse data accurately.

Unit 4 – Mars Rover 2 – Data Handling (Year 5)	• Develop complex spreadsheets with multiple formulas. • Use absolute and relative cell references. • Create multi-set graphs and charts. • Compare data across sets.	• Data analysis supports scientific enquiry. • Charts visualise trends and patterns.	• Produce multi-layered charts showing comparisons.
Unit 5 – Bletchley Park – Computing Systems & Networks (Year 6)	• Explore early computing devices and encryption systems. • Encode and decode messages using ciphers. • Explain the role of Bletchley Park in computer history. • Understand how networks share information securely.	• Encryption protects information. • Historical computing breakthroughs influence modern systems.	• Demonstrate understanding of encryption and computing history.
Unit 6 – History Of Computers – Creating Media (Year 6)	• Create multimedia presentations. • Combine text, sound, video and images effectively. • Evaluate sources of information for reliability. • Present information clearly for an audience.	• Computers have evolved significantly over time. • Different forms of media communicate information effectively.	• Create a multimedia presentation on computing history.

UKS2 Cycle A - Key Vocabulary		
Digital literacy	Information technology	Computer science
online identity, secure information, phishing, malware, copyright, digital resilience	data collection, data analysis, spreadsheet, presentation, timeline, micro:bit program, model/simulation	input/output, variable, loop, selection, microcontroller, sensor, algorithm, encryption/cipher

UKS2 Cycle B

NC states that in KS2, Pupils should be taught to:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- use sequence, selection, and repetition in programs, work with variables and various forms of input and output
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- understand 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
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

Digital Literacy

- Apply advanced online safety skills for Y6, including recognising acceptable/unacceptable online behaviour.
- Understand how to report concerns about online contact and content.
- Evaluate digital content and understand reliability and bias online.

Computer Science

- Use programming tools to create music-based algorithms and sequences.
- Use variables, loops, inputs and outputs in more complex Year 6 programming tasks.
- Understand how search engines work and how results are ranked.

Information Technology

- Create stop-motion animations, combining images, audio and simple effects.
- Use data-handling tools to explore and understand “Big Data”.

UKS2 Cycle B			
	Skills	Knowledge	End Points
Unit 1 – Online Safety (Year 6)	• Understand digital relationships, online identity and reputation. • Identify online grooming and how to respond. • Apply critical thinking to online content. • Manage digital wellbeing.	• Online behaviour affects real-world relationships. • Not all online content is trustworthy..	• Explain how to stay safe, respectful and responsible online.
Unit 2 – Programming Music – Programming (Year 5)	• Program sequences to create digital music. • Use loops and variables to control rhythm and pitch. • Debug code to fix timing or sound issues.	• Computers can generate sound digitally. • Programming music follows rules and structure.	• Create a digital music composition using coding blocks.
Unit 3 – Stop Motion Animation – Creating Media (Year 5)	• Capture high-quality frames for animation. • Edit animations using transitions, sound and playback features. • Add titles, captions and effects.	• Stop motion relies on frame-by-frame photography. • Media effects enhance storytelling.	• Produce a polished stop motion animation.
Unit 4 – Search Engines – Computing Systems & Networks (Year 5)	• Understand how search engines index and rank information. • Use effective keywords to find information. • Evaluate the reliability of search results. • Compare results across multiple search engines.	• Search engines use algorithms. • Not all websites are reliable or unbiased.	• Use search engines effectively and evaluate information quality.
Unit 5 – Big Data 1 – Data Handling (Year 6)	• Analyse large datasets using spreadsheets. • Identify patterns and anomalies. • Use sensors or simulations to gather data.	• Big data refers to very large sets of information. • Computers help humans understand complex patterns.	• Interpret large datasets and identify key trends.
Unit 6 – Big Data 2 – Data Handling (Year 6)	• Use machine-learning style tools to classify data. • Build simple rules-based systems to analyse patterns. • Make predictions based on data.	• Machines learn using patterns in data. • Rules-based systems follow conditional logic.	• Build a data model that classifies or predicts outcomes.

UKS2 Cycle B - Key Vocabulary		
Digital literacy	Information technology	Computer science
acceptable use, digital wellbeing, bias, validity, advanced search, reporting, digital rights	animation, frame, capture, music sequence, remix, database (advanced), big data	variable, input, function/block, repetition, trigger, algorithm, search ranking, data set