



Progression Document for KS2 Computing

Unit: Online Safety					
Big Question	National Curriculum Links	Core Knowledge	Disciplinary Knowledge	Key Vocabulary	Outcomes
How can we make safe and responsible choices online?	Use technology safely, respectfully and responsibly, recognise acceptable and unacceptable behaviour, identify ways to report concerns, understand opportunities for communication and collaboration, use search technologies effectively and evaluate digital content.	Online information is not always reliable, personal information can be used to identify us, strong passwords protect accounts, online communication can have risks, digital content can be edited or misleading, online actions contribute to a digital footprint.	Evaluate online information, recognise risks, make responsible choices, protect personal information, identify misleading content, communicate respectfully, report concerns, explain how to seek support.	privacy, password, digital footprint, reliable, misinformation, identity, communication, consent, report, security	Make informed and responsible choices online, protecting personal information, evaluating digital content and knowing how to respond to online risks.
Unit: Programming 2: BBC micro:bit					
Big Question	National Curriculum Links	Core Knowledge	Disciplinary Knowledge	Key Vocabulary	Outcomes
How can we program a micro:bit to respond to the world around us?	Design, write and debug programs, use sequence, selection and repetition, work with variables and input/output, use logical reasoning to explain algorithms, select and use software and digital devices to accomplish given goals.	A micro:bit is a programmable physical device, programs control inputs and outputs, variables store changing information, conditional statements make decisions, sensors collect real-world data, code can control LED displays and respond to movement or temperature.	Plan and create programs, predict how code will behave, use inputs and variables, create conditional statements, use sensor data, test programs, identify errors, debug and evaluate code.	micro:bit, input, output, sensor, variable, condition, program, code, debug, LED	Design, create and debug an interactive micro:bit program that uses inputs, variables, conditions and sensor data.
Unit: Data Handling: Mars Rover 1					
Big Question	National Curriculum Links	Core Knowledge	Disciplinary Knowledge	Key Vocabulary	Outcomes
How do computers collect, store and communicate data?	Select, use and combine digital technologies, collect, analyse and present data and information, understand computer systems and networks, use logical reasoning, explore how data is represented and communicated digitally.	Mars Rovers collect and transmit data, computers use binary to represent information, binary uses 0s and 1s, eight bits make a byte, computers use inputs, processing and outputs, ASCII represents text using binary.	Identify types of data, interpret binary numbers, convert data into binary, identify inputs and outputs, perform simple binary calculations, explain how computers process and transmit information.	data, binary, bit, byte, ASCII, input, output, processing, RAM, transmit	Explain how a Mars Rover collects, processes, stores and transmits data, using an understanding of binary and computer systems.
Unit: Data Handling: Mars Rover 2					
Big Question	National Curriculum Links	Core Knowledge	Disciplinary Knowledge	Key Vocabulary	Outcomes
How can we use data to explore and understand Mars?	Select, use and combine digital technologies, collect, analyse, evaluate and present data and information, use search technologies effectively, understand computer systems and networks, use digital devices to accomplish given goals.	Mars Rovers collect data using sensors, data can be stored in databases, data can be organised into fields and records, data can be searched and filtered, computers help scientists analyse large amounts of information.	Collect and organise data, create and use databases, search and filter information, identify relevant data, compare results, interpret findings, present information clearly and evaluate data.	database, data, field, record, filter, sort, search, sensor, information, analyse	Create and use a database to organise, search, filter and analyse data collected during a simulated Mars Rover mission.

Unit: Computing Systems and Networks: Bletchley Park and the History of Computers					
Big Question	National Curriculum Links	Core Knowledge	Disciplinary Knowledge	Key Vocabulary	Outcomes
How have computers and code-breaking changed over time?	Understand computer networks and how they provide services, appreciate how results are selected and ranked, use logical reasoning to explain algorithms, select and combine digital technologies, collect and present information, understand opportunities for communication and collaboration.	Computers have developed significantly over time, Bletchley Park played an important role in code-breaking, Alan Turing contributed to early computing, ciphers encrypt information, computers use codes to communicate and process information, technological developments have changed how information is handled.	Research computing history, evaluate sources, recognise chronological developments, create and decipher codes, apply logical reasoning, compare technologies, present information digitally, explain the impact of technological developments.	cipher, code, encryption, decryption, computer, algorithm, Bletchley, technology, communication, invention	Explain key developments in the history of computing and apply logical thinking to create, use and decipher codes.
Unit: Computing Systems and Networks: Exploring AI					
Big Question	National Curriculum Links	Core Knowledge	Disciplinary Knowledge	Key Vocabulary	Outcomes
How does artificial intelligence work and how can it affect our lives?	Understand computer systems and networks, use search technologies effectively, evaluate digital content, use logical reasoning, select and combine digital technologies, understand opportunities offered by technology and use technology safely and responsibly.	Artificial intelligence enables computers to perform tasks that usually require human intelligence, AI systems learn from data, machine learning identifies patterns, AI is used in everyday technology, AI-generated information may be inaccurate or biased, AI has benefits and limitations.	Identify examples of AI, explore how AI systems use data, recognise patterns, evaluate AI-generated content, consider reliability and bias, compare human and computer decision-making, discuss the benefits and risks of AI.	artificial intelligence, algorithm, data, machine learning, bias, chatbot, prompt, reliable, pattern, prediction	Explain how AI uses data and algorithms, evaluate its reliability and consider the benefits and risks of using AI.