Year 9 – Key Terms

Half Term 1 - Programming

Key Term	Definition
Variable	a symbolic name that is used to refer to a value stored in memory
Assignment	
Data Type	a classification that specifies the type of value a variable can hold and the operations that can be performed on that value
Sequence	a series of instructions or statements that are executed one after the other
Selection	a series of instructions where the program can choose between different paths of execution based on certain conditions
Iteration	a series of instructions that repeatedly execute until a certain condition is met or for a specified number of times
Integer	a data type that represents whole numbers, which can be positive, negative, or zero
Float	a data type that represents floating-point numbers, which are numbers that can have a decimal point
String	a data type that represents a sequence of alphanumerical values, including letters, numbers, symbols, and whitespace
Boolean	a data type that only represents one of two values: True or False
Comment	a piece of text in the code that is not executed by the Python interpreter, but for humans to understand the purpose or functionality of specific sections of code
List	a data type that represents an ordered collection of items
Syntax Error	
Logic Error	
Casting	

Half Term 2 - Computational Thinking

Key Term	Definition
Logic	the systematic reasoning used to solve problems and make decisions
Logic Gares	fundamental building blocks of digital circuits that perform basic logical functions, including AND, OR and NOT gates
Algorithm	a step-by-step procedure or a set of rules designed to perform a specific task or solve a particular problem
Abstraction	the process of simplifying complex systems by focusing on the essential features while ignoring the irrelevant details
Decomposition	the process of breaking down a complex problem or system into smaller, more manageable parts

Flow Chart	a visual representation of a process or algorithm. It uses standardized symbols and arrows to illustrate the sequence of steps involved in a particular task or decision-making process

Half Term 3 – Famous Figures

Key Term	Acronym	Definition
Alan Turing		a British mathematician and logician, renowned for his foundational contributions to computer science, particularly for developing the concept of the Turing machine and his pivotal role in breaking the Enigma code during World War II
Enigma		a cipher machine used by the German military during World War II to encrypt and decrypt secret messages
Bombe		a cryptanalytic machine developed by Alan Turing and their team during World War II to help decipher the encrypted messages produced by the Enigma machine
Encryption		the process of converting readable information or data into a code to prevent unauthorised access
Decryption		the process of converting encrypted information or data back into its original, readable form
Key		a piece of information (e.g., a string of characters or numbers) used in cryptography to encrypt or decrypt data
Plaintext		original, unencrypted message or data that is readable and understandable
Ciphertext		encrypted message or data that is unreadable without the proper decryption key
Tim Berners-Lee		a British computer scientist best known for inventing the World Wide Web, which revolutionized how information is shared and accessed on the internet
World Wide Web	WWW	a global system on top of the Internet to serve several billion users worldwide
Internet		a global computer network providing a variety of information and communication facilities
Hypertext Markup Language	HTML	a standard markup language for creating web pages and web applications
George Boole		an English mathematician and logician renowned for his work in algebraic logic, particularly for developing Boolean algebra, which laid the foundation for modern computer science and digital circuit design
Boolean Logic		a form of algebra in which all values are reduced to either True or False
Charles Babbage		an English mathematician and inventor famous for conceptualizing and designing the first mechanical

		computer, known as the Analytical Engine, which is considered a precursor to modern computers

Half Term 4 - Computer Systems

Key Term	Acronym	Definition
Motherboard / Mainboard		the main board found in computers, which holds and allows communication between many of the crucial components of a computer
Central Processing Unit	CPU	the electronic circuitry within a computer that carries out the instructions of a computer program by performing the basic operations specified by the instructions
Random Access Memory	RAM	a form of computer memory that can be read and changed in any order, typically used to store working data and programs
Read Only Memory	ROM	a type of non-volatile memory used in computers and other electronic devices. Data stored in ROM cannot be electronically modified after the manufacture of the memory device
Volatile		describes memory that requires power to maintain the stored information; it loses its contents when power is removed
Hard Disk Drive	HDD	an electromechanical data storage device that stores and retrieves digital data using magnetic storage, slower, less expensive, more capacity more prone to damage but lasts longer than SSD
Solid State Drive	SSD	a solid-state storage device that uses integrated circuit assemblies as memory to store data persistently, faster, more expensive, less capacity, less prone to damage but lasts shorter than HDD
Peripheral		a device that is connected to a computer but is not part of the core computer architecture (e.g., input devices, output devices, external storage devices)
Input Device		a piece of hardware that allows users to send data, information, or control signals to a computer system
Output Device		any peripheral that receives data from a computer, usually for display, projection, or physical reproduction
Sensor		a device that detects and responds to some type of input from the physical environment
Embedded System		a computer system with a dedicated function within a larger mechanical or electrical system, often with real-time computing constraints

Half Term 5 - Micro:bit

Key Term	Definition
Micro:bit	a small, programmable computer designed for educational purposes, helping children and beginners learn coding and electronics

Half Term 6 - Artificial Intelligence

Key Term	Definition
Artificial Intelligence	the capability of computational systems to perform tasks typically associated with human intelligence.
Machine Learning	a subset of AI that enables systems to learn from data without being explicitly programmed
Neural Network	a computing system inspired by the biological neural networks that constitute animal brains, used for pattern recognition and machine learning
Training Data	the dataset used to train a machine learning model
Testing Data	the dataset used to evaluate the performance of a machine learning model after it has been trained
Bias	a systematic error in a machine learning model's output that can lead to unfair or inaccurate predictions
Generative AI	a type of artificial intelligence that can create new content, such as images, text, audio, and video
Black-box AI	an AI system whose internal workings are not transparent or easily understandable to humans
Computer Vision	a field of AI that enables computers to "see" and interpret visual information from the world
Natural Language Processing	
Turing Test	a test of a machine's ability to exhibit intelligent behaviour equivalent to, or indistinguishable from, that of a human
The Chinese Room	a thought experiment that argues against the idea that a computer can truly understand language or have consciousness
Supervised Learning	a type of machine learning where the model is trained on labelled data, meaning the input data is paired with the correct output
Unsupervised Learning	a type of machine learning where the model is trained on unlabelled data and attempts to find patterns or structures within the data on its own