Year 9 Curriculum Plan
Computing

	Autumn 1 Python Programming	Autumn 2 Theme Park project (visual identity and graphic design)	Spring 1 Computer systems	Spring 2 AI and ethics	Summer 1 Databases and SQL	Summer 2 Creating media - Video editing
PRIOR LEARNING	Students have learnt selection, sequence, and iteration through block-based programming with the Microbit unit in Year 7 and will upskill their knowledge within this unit.	Within Year 8 students have learnt how to source, use and repurpose digital artefacts using various software packages. This module builds on this knowledge.	Students have been taught hardware and software within year 7 and can draw upon this knowledge to develop their understanding further for the different components of a computer system.	Students have studied multiple units that feed into the ethical and legal issues in computing from e-safety, user experiences and cyber security as well has having a wider understanding of this controversial topic from their own use and news stories.	Pupils have previously learnt how to use data types and basic database management techniques through exploring the use of various software. This module will build and develop this knowledge.	Pupils have previously learned how to repurpose digital artifacts in the Theme Park project. This module will build on these skills and knowledge.
KNOWING WHAT...	Students will transfer their knowledge of sequencing, selection, iteration and variables from the Year 7 Microbit unit to Python text-based programming. Students will learn how to write short Python programs to solve problems and learn how to debug their code.	Students will use their understanding of the term visual identity to make design decisions for a mini project based on a new theme park. They will demonstrate graphic editing skills within bespoke software to create and refine their designs.	Students will build on their learning from Year 7 by learning the elements of computer hardware and software and how each element works and interacts with each other.	Students will learn what AI is and its role in our lives, how it works using an online machine learning tool, how and why it was created and will explore the legal issues and debate the ethical issues surrounding AI.	Students will explore what databases are and how they are structured. They will learn the difference between a flat file and relational database and how to construct, edit and use a database for a specific purpose. They will also learn the purpose of SQL and how to use it within a relational database.	Students will explore what a video and the associated file types looking at filming techniques and the use of hardware and software to capture plan their video, capture footage and apply video editing techniques to enhance their work.
KNOWING HOW...	Students will be able to write print statements, selection statements, while and for loops and use variables to store data within programs. They will learn a process to identify syntax and logic errors and debug them so that their code runs.	Students will be able to explain the term visual identity, describe the features of an effective logo, explain how we can identify the target audience and demonstrate graphic design skills such as workflow, layers, filters, retouching, blurring, sharpening and smudging.	Students will be able to explain the purpose and types of primary memory and secondary storage, explain the purpose of a CPU, the parts and their functions and the factors affecting performance of a CPU. Students will also be able to explain embedded systems, convergence and new technologies as well as the importance of health and safety in a computer room.	Students will be able to describe the origin and uses of AI in our lives and will be able to explain how AI uses machine learning to work. They will be able to debate the positives and negatives of AI and be able to describe the impact of laws on AI.	Students will be able to label the parts of a database, create, update and modify a database and use SQL to insert, interrogate, update and delete data in a relational database.	Students will be able to explain the purpose of video as a media format and evaluate the effectiveness of different production and editing techniques. They will be able to plan a video by creating a storyboard to describe each scene then complete their video by editing and reordering clips using techniques such as fade, cut, trim, special effects and CGI and exporting the finished file in the correct format.

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ASSESSMENT	Students will be assessed formatively through Python program challenges each lesson and at the end of the unit through an on-screen Office Forms assessment covering print statements, commenting, variable names, data types, lists, IF statements, while and for loops.	Students will be assessed formatively through the various tasks they complete each lesson including their logo design, brochure and at the end of the unit through the creation of their final piece: the interactive presentation.	Students will be assessed formatively through the various challenges they complete each lesson and will be assessed at the end of the unit through an on-screen Office Forms test with questions on internal and external hardware components, parts of the CPU, RAM v ROM, secondary storage types, embedded systems, new technologies, convergence and health and safety when using computers.	Students will be assessed formatively throughout the unit by adding their findings on AI to a learning journal. They will then be assessed at the end of the unit through an on-screen Office Forms test with questions on what is AI, the history of AI, the use of AI, benefits and limitations of AI, ethical dilemmas posed by AI and the laws surrounding AI.	Students will be assessed formatively through the various database challenges within the lessons and will complete an end of unit assessment consisting of; -An on-screen Office forms test with questions on database use, database structure, interrogating a database, query design and SQL commands. -A practical assessment involving students creating a database for a scenario where they have to select appropriate fieldnames, datatypes, primary key, enter, edit and delete records, create a form, create simple and parameter queries and use SQL commands.	Students will be assessed formatively through the various video creation and editing activities done within lessons and will take an end of unit assessment consisting of; -An on-screen Microsoft Forms test asking questions on the purpose of video, types of video, the purpose of various video editing techniques, file formats, video devices and features of an effective video. -A practical assessment where students create a video for a specific scenario.

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