YEAR 9 CURRICULUM PLAN FOR TECHNOLOGY (COMPUTER SCIENCE S & SYSTEMS CONTROL)

TOPIC	KEY LEARNING	ASSESSMENT
Introduction to Python Programming First steps	○ Describe what algorithms and programs are and how they differ ○ Recall that a program written in a programming language needs to be translated, in order to be executed by a machine ○ Write simple Python programs that display messages, assign values to variables, and receive keyboard input ○ Locate and correct common syntax errors	Optional activity Projects | Computer coding for kids and teens | Raspberry Pi
Crunching numbers	○ Describe the semantics of assignment statements ○ Use simple arithmetic expressions in assignment statements to calculate values ○ Receive input from the keyboard and convert it to a numerical value	L2 Intro to programming
At a crossroads	○ Use relational operators to form logical expressions ○ Use binary selection (if, else statements) to control the flow of program execution ○ Generate and use random integers	
More branches	○ Use multi-branch selection (if, elif, else statements) to control the flow of program execution ○ Describe how iteration (while statements) controls the flow of program execution	They are almost identical, except for the fact that the program on the left uses consecutive *if* statements, whereas the program on the right uses a single *if, elif* statement.
Round and round	○ Use iteration (while loops) to control the flow of program execution ○ Use variables as counters in iterative programs	

Putting it all together	○ Combine iteration and selection to control the flow of program execution ○ Use Boolean variables as flags	
Elements of a computer system	○ Distinguish between hardware and software ○ Identify input, output and storage devices ○ Name at least five pieces of software ○ Understand what happens at the “Process” stage ○ Suggest appropriate input and output devices for a given scenario ○	
The CPU	○ Draw a block diagram of the main components of a computer: input, processor, output and storage ○ Explain what RAM and ROM are used for ○ Distinguish between main memory and permanent storage devices ○ Name the three stages in the Fetch Execute Cycle ○ Define Hz, MHz and GHz and state how these relate to the speed of the processor ○	
Understanding Binary	○ State why all data is represented in binary in a computer ○ Define a Bit, Byte, Kb, Mb and Gb ○ Convert decimal (denary) integers to binary numbers ○ Convert binary numbers to decimal (denary) integers ○ Look up from a table the bit pattern for a given character ○ Show how characters can be represented in ASCII ○	
Binary addition	○ Identify a binary number as odd or even ○ Understand the effect of adding an extra zero to a binary number ○ Add two binary numbers (each no more than eight binary digits) ○	

Media Features of a Word processor	o Understand the importance of word processing	
Spreadsheets	o Using cells and basic formula	
Assessment	o Be able to apply their knowledge in answers to a range of questions o Be able to highlight areas of strength and any gaps in their understanding of computers	
Gears	o To know the 4 types of motion o Be able to recognise the three classes of lever	
Practical to construct a gear train	o Be able to construct a compound gear train	Read page 31 and answer Q 5 on cams
Linkages	o To know what a push/pull mechanism is. o To know what a bell crank mechanism is	
Practical to construct a mechanism using Tech Card	o Use tools and equipment safely with skill and accuracy	

Linkages	○ To know what a push/pull mechanism is. ○ To know what a bell crank mechanism is	
Practical to construct a mechanism using Tech Card	○ Use tools and equipment safely with skill and accuracy	
5 A systems approach to designing	○ To be able to understand systems are made up of input process output ○ To know some inputs processes and output	
6 EBI test	○ Assessment	