YEAR 8 CURRICULUM PLAN FOR TECHNOLOGY (COMPUTER SCIENCE S & SYSTEMS CONTROL)

TOPIC	KEY LEARNING	ASSESSMENT
Hello physical world	○ Describe what the micro:bit is ○ List the micro:bit's input and output devices ○ Use a development environment to write, execute, and debug a Python program for the micro:bit	Discussion task
Bare bones	○ Write programs that use the micro:bit's built-in input and output devices	Discussion task
Connections	○ Write programs that use GPIO pins to generate output and receive input ○ Write programs that communicate with other devices by sending and receiving messages wirelessly	Pupils will be asked to put their ideas on paper as homework, as they will find themselves taking their first creative design steps in the next lesson
Dream it up IET resources?	○ Design a physical computing artefact purposefully, keeping in mind the problem at hand, the needs of the audience involved, and the available resources ○ Decompose the functionality of a physical computing system into simpler features	Starting with this lesson, pupils will build their own physical computing project, thus bringing together what they have learnt into a meaningful creation.
Round and round	○ Implement a physical computing project, while following, revising, and refining the project plan	Assessment Quiz on firefly
Wrap it up	○ Theme-Britain and the Wider World-we will explore the concepts of Imperialism, Migration and Trade. Skill-significance ○ Implement a physical computing project, while following, revising, and refining the project plan	Pupil's projects will be evaluated using a rubric, and they will also take a quiz to assess the knowledge and skills they have individually acquired over the course of the unit

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	UCom Homework 1
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	UCom Homework 2
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)	UCom Worksheet 4 Binary Addition
Media Features of a Word processor	○ Understanding the importance of Word processing	

Spreadsheets	○ Using cells and basic formula	Homework 6
Types of forces	○ Know what Tension Torsion compression and sheer forces are ○ Know the difference between strut and tie.	Review Strut tie symbols Compression Torsion sheer Strut Tie
Bridge challenge practical	○ Select appropriate materials ○ Use appropriate structures ○ Construct a bridge ○ Be able to cost	
Bridge challenge practical	○ Apply appropriate test	
Designing VTOL	○ Be able to select and use appropriate tools safely ○ Use triangulation and other structures	Quiz
Complete construction Competition	○ Select appropriate tools. ○ Use tools with skill, accuracy and safely	Review VTOL Malleability Hardness

		Toughness Elasticity Strength