Long term planning grid

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 10	**Data Storage:** 1. Units 2. Binary Conversion 3. Hexadecimal 4. Binary Calculations 5. Recap 6-7. Characters 8-9. Images 10-11. Sound 12. Recap 13. Compression 14. Recap 15. Assessment Why will it be learnt? **Main Outcome:** Reintroduce students to the logic behind storing data efficiently and extend their reasoning behind this. **Skills Developed** Mathematical Reasoning Logical Deduction **How will learning be assessed?** End of unit test using exam style questions.	**Boolean Logic:** 1. Boolean Logic 2-3. Logic Gates 1. Logic Symbols and Logic Tables 2. Recap 3. Assessment Why will it be learnt? **Main Outcome:** Introduce students to logical thinking that extends to programming. **Skills Developed** Logical Deduction **How will learning be assessed?** End of unit test using exam style questions. **Programming Basics** 1-2. Data Types 3. Operators 4. Input and Output 5. Variables 6. Selection 7. For Loops 8. While Loops 9. Recap	1-2. Architecture of the CPU 3-4. CPU Performance 1. Embedded Systems 2. Recap 3. Assessment **Main Outcome:** Recap and extend the CPU and how it controls data coming through the computer. **Skills Developed** Logical Reasoning Analysis and Comparisons **How will learning be assessed?** End of unit test using exam style questions. **Memory and Storage:** 1-2. Primary Memory 3. Secondary Memory 4. Types of Storage 5. Storage Descriptions 6. Recap 7. Assessment Boolean Logic Recap	**Computational Thinking and Algorithm Design:** 1-2. Computational Thinking 3-7. Algorithm Design and Analysis 8. Algorithm Assessment Why will it be learnt? **Main Outcome:** Show students how to analyse and create algorithms, including using flowcharts and pseudocode to plan and looking at how efficient algorithms are. **Skills Developed** Mathematical Reasoning Planning **How will learning be assessed?** End of unit test using exam style questions **Advanced Programming**	**Networks** 1. Types of Networks 2. Network Factors 3. Client-Server Networks 4. Peer-to-peer networks 5. Recap 6. Network Hardware 7. Star and Mesh Topologies 8. Recap 9-10. The Internet 11.Recap 12. Assessment Why will it be learnt? **Main Outcome:** Students will learn about how computers are connected to each other and send each other information, as well as how we can organise these networks depending on certain circumstances. **Skills Developed** Analysis	**Protocols** 1-2. Modes of connection 3. Encryption 4. IP and Mac addresses 5. Recap 6. Standards 7-8. Protocols + Layers 9. Recap 10. Assessment **Main Outcome:** Students will learn about the technical details of networks and how computers can communicate without losing data or getting confused. **Skills Developed:** Analysis Information recall **Practice Programming** 1-2 Practice Programming 3. Exam Prep Same as before.

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		Data Storage Recap **Main Outcome:** Recap and reinforce key programming techniques that students will need to use in any programming language. **Skills Developed** Logical Thinking Abstraction **How will learning be assessed?** Students will post link to their code to an online workbook that will be checked throughout the course.	**Main Outcome:** Reintroduce and extend students' knowledge of memory and storage. **Skills Developed** Comparisons Calculations (Number formatting) **How will learning be assessed?** End of unit test using exam style questions.	**(Programming Basics Recap first)** 1. String Manipulation 2. File handling 3. Records and SQL 4. 1D Arrays 5. 2D Arrays 6. Subroutines 7. Generating Random Numbers **Main Outcome:** Introduce new programming skills that will help students make more complex and useful programs, extending from their base skills. **Skills Developed** Logical Thinking Abstraction **How will learning be assessed?** Students will post link to their code to an online workbook that will be checked throughout the course.	Information recall Real World Problem Solving **How will learning be assessed?** End of unit test using exam style questions **Practice Programming** 1-3 Practice Programming Recap Data Storage Why will it be learnt? **Main Outcome:** Programming is a skill that requires constant revisiting and recapping to keep fresh. Basic programming projects that can be completed in one lesson will be used to help students keep up to date with their work. **Skills Developed** Programming Planning **How will learning be assessed?** Students will submit their programs and they will be tested and	

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					checked. This will be used to assess each student's programming skills.	