

Long term planning grid

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 9	<p>Problem Solving: 1-2. Abstraction 3-4. Decomposition 1. Analysis of Design 6. Understanding the User 1. User Interface 2. Testing 3. User Needs 4. Paper Prototype</p> <p>Why will it be learnt? Main outcome: Introduce students to the key concepts of solving problems and building solutions. Skills Developed: Problem solving Logic Analysis How will learning be assessed? Paper Prototype along with questions and description of project, marked with rubric.</p>	<p>JavaScript & P5.js Programming: 1. Shapes and Colours 2. Variables 3. Animation 4. Selection 5. Loops 6. Functions 7. Arrays 8. HTML 9. CSS 10. Showcase</p> <p>Why will it be learnt? Main Outcome: Introduce students to key programming concepts in an engaging, visual way. Skills Developed: Programming Algorithmic Thinking Logic How will learning be assessed? Students will complete small projects which they will save and showcase in the final</p>	<p>Data Representation: 1. Bits and Binary 2. Denary to Binary and back 3. Hexadecimal and Binary 4. Recap and Review 5. Character Sets 6. Images and Metadata 7. Sound 8. Assessment</p> <p>Why will it be learnt? Main Outcome: Introduce students to the logic behind storing data and the idea that all data in a computer is made of binary and manipulating this. Skills Developed Mathematical Reasoning Logical Deduction How will learning be assessed? End of unit test using exam style questions</p>	<p>Python Programming: 1. Command Line Interface, Input and Output 2. Variables and Maths 3. Selection and Menus 4. For loops and Lists 5. While Loops 6. CSVs and File Handling 7. Quiz Project I 8. Quiz Project II</p> <p>Why will it be learnt? Main Outcome: Reinforce key programming techniques while introducing ways users can interact with software and how to develop for that. Skills Developed: Programming Algorithmic Thinking How will learning be assessed?</p>	<p>Cyber Security: 1. What is hacking? 2. How to stop hackers 3. Encryption 4. Cyber crimes and the law 5. SQL and SQL injections 6. Types of Malware 7-8. Project – Create a presentation about a fake “attack” and explain how it could have been stopped.</p> <p>Why will it be learnt? Main Outcome: Help students understand important aspects of Cyber Security beyond their own security and begin thinking how professionals and organisations have to keep their data protected. Also</p>	<p>Building a Computer 1. Parts of a computer 2. CPU – What makes a good one? 3. RAM – Why do we need it? 4. Storage – What storage should we have and why? 5. Extras – Motherboard, Graphics Card, Headset, etc 6. Virtual walkthrough of building a computer 7-8. “Building” their own computer and justifying it.</p> <p>Why will it be learnt? Main Outcome: Prepare students for course content in Year 10 while exploring what makes a good gaming PC and how they would make their own one. Skills Developed: Analysis and Comparisons</p>

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		<p>lesson. These will be marked and feedback given.</p>		<p>Students will complete the Quiz Project which involves using all the skills they've been taught. Students may be helped, but this will be reflected in marks. Marked with Rubric.</p>	<p>students love the idea of hackers. Skills Developed Ethics Problem Solving Presenting Information How will learning be assessed? Students will create a PowerPoint presentation about a fake attack with their own choice of target. They will need to explain how the attack happened, and how it could have been prevented.</p>	<p>Justification How will learning be assessed? PowerPoint presentation with key questions that students need to answer to get a high mark. Students will explain how they would build their computer.</p>
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