# Computer Science & Digital Media Year 9

| | Autumn 1 & 2 | Spring 1 | Spring 2 | Summer 1 & 2 |
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| Topics | Digital graphics | Programming | Cyber Security | Video Editing |
| Learning components | Bitmap images:<br>Understand pixels, resolution and colour depth.<br><br>Vector graphics:<br>Understand how they are different bitmap and what they're used for.<br><br>Standard and Advanced tools in Photoshop.<br>A wide range of selection and retouching tools.<br><br>Create a digital graphic<br>Create a game cover using Photoshop.<br><br>Exporting a digital graphic.<br>Exporting a game cover into a file format suitable for digital graphics. | Strings<br>Printing using strings.<br>Using variables to store strings.<br><br>Integers<br>Using variables to store integers.<br><br>Input<br>The use of an input function to store and output values.<br><br>Selection (Part 1)<br>Basic use of selection using the IF-ELSE command.<br><br>Selection (Part 2)<br>Building on the previous lesson to write statements using the IF-ELIF-ELSE command.<br><br>Counter-controlled iteration<br>Using FOR loops to write code that repeats a certain number of times.<br><br>Condition-controlled iteration<br>Using WHILE loops to write code that repeats until a certain condition is met. | Lesson 1<br>Email scams<br><br>Lesson 2<br>Hacking<br><br>Lesson 3<br>Protecting personal data<br><br>Lesson 4<br>Copyright<br><br>Lesson 5<br>Health and safety | Lesson 1<br>Introduction to digital video<br><br>Lesson 2<br>Planning, scripting and storyboarding<br><br>Lesson 3<br>Shooting scenes<br><br>Lesson 4<br>Final shoot<br><br>Lesson 5<br>Editing a movie<br><br>Lesson 6<br>Final cut |

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| Linked learning | • The units allow students to distinguish between Computer Science and Digital Media as it shares as many as similarities as it does in differences.<br>• The units in Year 8 build on prior knowledge in middle school and are transferable into Year 9 and beyond if they choose one of the subjects as an option. |
| SMSC links | • Close links with Product Design/Engineering through programming and handling hardware (PC components)<br>• Basic ICT skills applicable across all subjects.<br>• Maths – Using computing-related mathematics to solve problems. |
| Literacy | • Subject specific terminology (e.g. rendering, debugging)<br>• Vocabulary – when answering questions in their digital portfolio. |
| Numeracy | • Counting, Adding, Logical thinking.<br>• Using algorithms to solve complex problems. |

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| Enrichment | • Computing Club that runs after school each week.<br>• Educational trips (e.g. Girls in IT (Swansea), Bletchley, Cadbury World) |
| Impact | • Students are required to develop a range of techniques using a wide range of software packages and apply them effectively when developing their own digital artefacts or to solve complex problems.<br>• Using real-life problems that will help students become more logical in their thinking and have the confidence to break down complex problems into smaller and more manageable tasks that make it easier to solve, a skill that is transferable and can be applied to all subjects and beyond education. |

| Ways to support student learning in this subject |
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| • Encourage the use of technology at home, provide an opportunity for students to use our facilities that they may not be provided with at home.<br>• Homework completed on time and to the expected standard.<br>• Help students understand the 'bigger picture' – technology is becoming more prominent in our everyday lives and because they can use a smartphone they assume they know everything they ever need to about the subject.<br>• Change their mind-set – there is evidence that they're not receiving the best experience at middle school and it's switching students off before they even walk through the door. |