



YEAR	TOPICS	TERMLY INDEPENDENT WORK
7	<ol style="list-style-type: none"> <li>1. Autumn Term               <ol style="list-style-type: none"> <li>1.1. Basic Digital Skills</li> <li>1.2. Components of a Computer System</li> <li>1.3. Data Representation Techniques</li> </ol> </li> <li>2. Spring Term               <ol style="list-style-type: none"> <li>2.1. Logic Gates</li> <li>2.2. Numerical Modelling</li> </ol> </li> <li>3. Summer Term               <ol style="list-style-type: none"> <li>3.1. Computational Thinking</li> <li>3.2. Introduction to Python</li> </ol> </li> </ol>	<ol style="list-style-type: none"> <li>1. Autumn Term               <ol style="list-style-type: none"> <li>1.1. Research into the history of Computer Science</li> <li>1.2. Designing a computer system challenge</li> <li>1.3. Investigation into the impact of encryption</li> </ol> </li> <li>2. Spring Term               <ol style="list-style-type: none"> <li>1.1. Investigate Redstone Logic in Minecraft</li> <li>2.1. Modelling exercise: Party planner</li> <li>2.2. Python: Chilli Challenges (Turtle)</li> </ol> </li> <li>3. Summer Term               <ol style="list-style-type: none"> <li>3.1. Python: Chilli Challenges (Quizzes)</li> </ol> </li> </ol>
8	<ol style="list-style-type: none"> <li>1. Autumn Term               <ol style="list-style-type: none"> <li>1.1. Flowcharts and Control</li> <li>1.2. Physical computing with MicroBits</li> </ol> </li> <li>2. Spring Term               <ol style="list-style-type: none"> <li>2.1. Further introduction to Python</li> <li>2.2. Searching and Sorting Techniques</li> </ol> </li> <li>3. Summer Term               <ol style="list-style-type: none"> <li>3.1. Data Structures in Python</li> </ol> </li> </ol>	<ol style="list-style-type: none"> <li>1. Autumn Term               <ol style="list-style-type: none"> <li>1.1. Flowol models</li> <li>1.2. Investigation into embedded systems</li> </ol> </li> <li>2. Spring Term               <ol style="list-style-type: none"> <li>2.1. Python: Chilli Challenges</li> <li>2.2. Minecraft Data Representation</li> </ol> </li> <li>3. Summer Term               <ol style="list-style-type: none"> <li>3.1. HCI design</li> </ol> </li> </ol>



<p>9</p>	<ol style="list-style-type: none"> <li>1. Autumn Term               <ol style="list-style-type: none"> <li>1.1. Networking – Topologies and Protocols</li> <li>1.2. Databases: Theory and SQL</li> </ol> </li> <li>2. Spring Term               <ol style="list-style-type: none"> <li>2.1. Modular programming in Python</li> </ol> </li> <li>3. Summer Term               <ol style="list-style-type: none"> <li>3.1. Physical Computing</li> <li>3.2. Minecraft Edu</li> </ol> </li> </ol>	<ol style="list-style-type: none"> <li>1. Autumn Term               <ol style="list-style-type: none"> <li>1.1. Develop revision guide on networking</li> <li>1.2. SQL investigation</li> </ol> </li> <li>2. Spring Term               <ol style="list-style-type: none"> <li>2.1. PgGame and Tkinter challenges</li> </ol> </li> <li>3. Summer Term               <ol style="list-style-type: none"> <li>3.1. Robotics investigations</li> <li>3.2. Open Ended programming project</li> </ol> </li> </ol>
<p>10</p>	<ol style="list-style-type: none"> <li>1. Boolean Logic</li> <li>2. Data Representation</li> <li>3. Designing, creating and refining algorithms</li> <li>4. Machine Architecture</li> <li>5. Network Topologies</li> <li>6. Practical Programming</li> </ol>	<ol style="list-style-type: none"> <li>1) A wide range of extension programming tasks are available throughout the year, requiring students to develop their analytical, design and development skills within Python</li> <li>2) Develop revision materials in collaborative work area</li> <li>3) Investigation into Assembly Language</li> <li>4) Investigation of alternative languages</li> </ol>
<p>11</p>	<ol style="list-style-type: none"> <li>1. Wired and Wireless networks</li> <li>2. Topologies, protocols and layers</li> <li>3. Defensive Design</li> <li>4. Practical programming projects</li> <li>5. System software</li> <li>6. Language Translation</li> <li>7. Ethical, legal, cultural and environmental impact</li> </ol>	<ol style="list-style-type: none"> <li>1) Develop revision materials in collaborative work area</li> <li>2) Research directly relating to the programming project</li> </ol>

**PLEASE NOTE:**

- This overview sets out a general summary of the basic curriculum taught. It is not an exhaustive list of what may be taught and subject teachers may follow the above in a different order. Further details may be obtained from the Head of Department, if required.
- The Independent Work indicated represents core, headline tasks per term; weekly/fortnightly independent/home work is set in all subject areas, and details are noted in Pupil Planners.