

## Computer Science Department Curriculum Guide

### Year 10

#### Curriculum

Autumn	Spring	Summer
<ul style="list-style-type: none"> <li>• Systems Architecture <ul style="list-style-type: none"> <li>○ Units of Storage</li> <li>○ The CPU</li> <li>○ Performance Factors</li> <li>○ Von Neumann</li> <li>○ Memory</li> <li>○ Embedded Systems</li> <li>○ Secondary Storage</li> </ul> </li> <li>• Programming Fundamentals <ul style="list-style-type: none"> <li>○ Python programming challenges</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Data Representation <ul style="list-style-type: none"> <li>○ Binary</li> <li>○ Binary Addition</li> <li>○ Binary Shift</li> <li>○ Hexadecimal</li> <li>○ Characters</li> <li>○ Images</li> <li>○ Sound</li> <li>○ Compression</li> </ul> </li> <li>• Computational Thinking <ul style="list-style-type: none"> <li>○ Abstraction</li> <li>○ Decomposition</li> <li>○ Logic Gates</li> <li>○ Search/Sort Algorithms</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Networks <ul style="list-style-type: none"> <li>○ Types of Network</li> <li>○ Types of Connection</li> <li>○ Performance Factors</li> <li>○ Hardware</li> <li>○ Topologies</li> <li>○ Packet Switching</li> <li>○ Protocols</li> <li>○ Security</li> <li>○ The Cloud and DNS</li> </ul> </li> <li>• System Software <ul style="list-style-type: none"> <li>○ Utility Software</li> <li>○ The OS</li> <li>○ Languages</li> <li>○ Translators</li> <li>○ The IDE</li> </ul> </li> <li>• Programming Fundamentals <ul style="list-style-type: none"> <li>○ Python programming challenges</li> </ul> </li> </ul>

#### Assessment & Homework

Students will be assessed at the end of each topic. They will also sit their Year 10 mock papers.

Each assessment will be completed on paper during the lesson. End of topic assessments cover 75% current topic and 25% previous topics from the same paper.

Student's **final** grade at the end of the year will be based on their **average** grade across all assessments taken to that point.

Students will receive **one** piece of homework each week.

To complete any remaining work from the lesson task, to check their answers against the provided answer slides, to complete the work for any lessons they missed.

When an assessment is upcoming, the homework will be to revise.

#### Resources

Students will have a section in their OneNote called "Revising for Assessments".

There are two separate tabs for the theory elements and the practical programming elements.

#### Extra and Super Curricular Opportunities

Coding Ambassador – can apply to lead Coding Club for Years 7 and 8.