Richmond School & Sixth Form College
Being the best we can be

# Year 9 Computer Science

The Year 9 GCSE Computer Science curriculum builds the programming skills and computing concepts which have been developed in Year 7 and 8. The block and basic text programming is extended into Python text based programming.

| Methods of deepening and securing knowledge: | |
|---|---|
| Retrieval practice | Starter activities are used whilst students login to computers, these are knowledge retrieval activities. Retrieval homework tasks are set. |
| Interleaving | Programming skills are revisited several times. Key concepts are repetitively covered using different language and are interleaved within the curriculum. |
| Concrete examples | Concrete examples are used as the Teacher demonstrates efficient coding practice. |
| Other | Dual coding is used as instructions for tasks include written steps and images showing what icons or tools look like. |

| | Autumn term 1 | Autumn term 2 | Spring term 1 | Spring term 2 | Summer term 1 | Summer term 2 |
|---|---|---|---|---|---|---|
| Topic(s) | **Binary and Hex number systems**<br>- Binary and Hex<br>- Binary addition<br>- Images and sound storage<br>- Data compression<br><br>**Small Basic Programming**<br>- variables<br>- logic statements<br>- selection | **Algorithms**<br>- Computational Thinking<br>- Searching Algorithms<br>- Sorting Algorithms<br>- Flow Charts and Pseudocode<br>**Python Programming**<br>- variables<br>- logic statements<br>- selection | **Python Programming**<br>- repetition<br>- turtle programming<br>**Logic and Languages**<br>- Logic Diagrams<br>- Defensive Design Errors and testing | **Python Programming**<br>- lists<br>- functions<br>**Logic and Languages**<br>- Translators, Compilers and Interpreters<br>- Assembly programming | **Python Programming**<br>- AppJar interface programming<br>- text file access<br>- databases<br>- SQL language | **Python Programming**<br>- SQLite<br>- Extended Programming project |
| Assessment | - Data representation assessment | - Algorithms assessment – includes data representation | | - Logic and Languages assessment - includes data rep + Algorithmsa | | Practice Non Examination Assessment |

| | | | | | | |
|---|---|---|---|---|---|---|
| CEIAG *(Careers that are linked to that topic)* | | | Software Developer<br>Software Tester | Embedded<br>Machine Developer | | |

| Homework: |
|---|
| Homework is a core part of learning and serves to support the learning in class. Regular homework is set to coincide with the majority of theory lessons. Homework is mainly set through the online tool Google Classroom however some paper based homework tasks are set.<br>Preparing for assessment is an essential part of each topic as each assessment allows teachers and students to see their progress. It is crucial that revision is completed so students can show off what they know. |