**Greig City Academy Key Stage 3 Curriculum**

**Computing**

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|  | **Autumn Term** | **Spring Term** | **Summer Term** |
| **Year 7** | Using computers safely, effectively and responsibly. Potential dangers Strategies for staying safe. Hardware and Software, Role of components. How components communicate through networks, System software vs Applications. The internet of things (IoT). | Understanding computational thinking: Introduction to algorithms, pattern recognition, decomposition and abstraction. Flow charts; block programming; introduction to variables and arrays. | Introduction to text-based programming; understanding an IDE; working with primitive datatypes, implementing simple programs. |
| **Year 8** | Introduction to databases (manual and electronic) and their uses in the real world; database objects (e.g. tables, forms, etc.); Searching and sorting; Boolean operators e.g. AND, OR, NOT. | Review and recap computational thinking; introduction to pseudo code; undertake a creative project using some programming techniques such as sequence, selection, repetition, etc. Introducing binary operations (e.g. converting denary to binary and binary addition); | Introduction to developing websites, knowing how to trust a website. Using a combination of multiple applications, selecting and repurposing of digital artefacts: Understanding a second language of HTML, CSS, JavaScript. |
| **Year 9** | Further computational thinking using all programming techniques: sequence, selection, repetition, procedures and functions; modules and classes, testing and debugging code. Project to develop a quiz. | Further binary operations (e.g. binary to hex and vice versa, representing text e.g. ASCII; representing colours (RGB); Understanding logic gates and their relationship to circuits. Key algorithms (searching & sorting). Further networks: security; standards and protocols. | Project development in which pupils apply computational thinking methods to design and develop a creative project, test and evaluate. |