**Greig City Academy Key Stage 3 Curriculum**

**Computing**

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|  | **Autumn Term** | **Spring Term** | **Summer Term** |
| **Year 7** | Using computers safely, effectively andresponsibly. Potential dangers Strategies for staying safe. Hardware and Software, Role of components. How componentscommunicate 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. |