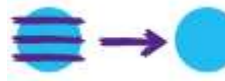# Computer Science Knowledge Organiser – Year 3

| Y3 | Prior Knowledge | Programming – Sequence / Repetition | Computational Thinking |
|---|---|---|---|
| Key knowledge and skills | **In Year 2 you learnt:**<br>• How to create programs with precise instructions using digital devices.<br>• How to debug programs with increasing complexity.<br>• How to use logical reasoning to predict the outcome of simple programs. | • I know how to design a program.<br>• I know how to create a program using a design.<br>• I know how to create a sequence of code<br>• I know how to use repetition in programs<br>• I know how to evaluate my program.<br><br>**Computer Networks – Local Area Network (LAN)**<br>• I understand that the computers in a school are connected together in a network.<br>• I understand why computers are networked. | • I know how to create algorithms for my programming projects.<br>• I know how to decompose projects (such as an animation) into steps to create an algorithm<br>• I understand abstraction is focusing on important information.<br>• I know how to identify patterns in an algorithm. |

| Computational Thinking | | Key Vocabulary | | Apps/Programs |
|---|---|---|---|---|
| Sequence<br> | Sequence based algorithms follow a specific set of instructions e.g. to draw a hexagon in scratch if not in sequence the algorithm would not be successful. | **Sequence** | Arranging instructions for algorithms and programs in a particular order. | |
| | | **Abstraction** | Removing unnecessary detail. Identifying what is important and leaving out detail we do not need. | |
| | | **Repetition** | Part of a program where one or more commands are run multiple times in a loop. | |
| Repetition<br> | Repetition is when events in programs recur. Being able to spot repetition in code builds on children's abilities to spot repeatable patterns. | **Forever/infinite loop** | A command that repeatedly runs a defined section of code indefinitely. | Scratch |
| | | **Count-controlled loop** | A command that repeatedly runs a defined section of code a predefined number of times. | |
| | | **Network** | A group of interconnected computing devices. | |
| Abstraction<br> | Abstraction is about simplifying things – identifying what's important without worrying too much about detail. | **Server** | A networked computer that manages, stores, and provides data such as files to other computers. | |
| | | **LAN (Local Area Network)** | A network that connects computers and devices within a building or small group of buildings. | |