Computing

*“The computer was born to solve problems that did not exist before.” Bill Gates*

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

*Aims*

* can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation.
* can analyse problems in computational terms and have repeated practical experience of writing computer programs to solve such problems.
* can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems.
* are responsible, competent, confident and creative users of information and communication technology.

*Long Term Plan*

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| **Year Group** | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
| **Reception** | Rather than a scheme with set lessons, the early years resources are designed to integrate into the day-today routine and set-up of an early years setting with opportunities for using Mini Mash or Purple Mash as part of the Early Years curriculum to support children in working towards early learning goals. | | | | | |
| **Year 1** | Online safety & exploring Purple Mash  Grouping & sorting | Pictograms.  Lego Builders | Maze Explorers | Animated story books. | Coding | Spreadsheets  Technology outside school. |
| **Year 2** | Coding | Online safety  Spreadsheets | Questioning | Effective searching  Creating pictures | Making music | Presenting ideas |
| **Year 3** | Coding | Online safety  Spreadsheets | Touch typing | Email | Branching databases  Simulations | Graphing  Presenting |
| **Year 4** | Coding | Online safety | Spreadsheets | Logo | Animation  Effective searching | Making music |
| **Year 5** | Coding | Online safety  Spreadsheets | Databases | Game creator | Modelling  Concept maps | External devices |
| **Year 6** | Coding | Online safety  Blogging | Text adventures  Networks | Quizzing | Understanding binary  Spreadsheets | Spreadsheets |