

Subject: Computing

Aims and Purposes

The Computing curriculum should offer opportunities for our children to:

- Develop their understanding of the fundamental principles and concepts of computer science.
- Develop their skills in using hardware and software to manipulate information in their process of problem solving, recording and expressive work;
- Develop a high quality computing education which equips them to understand and change the world through logical thinking and creativity.
- Develop their understanding of how digital systems work and to become digitally literate individuals.
- Explore their attitudes towards ICT, its value for themselves, others and society, and their awareness of its advantages and limitations

Computer science

Our children should:

- Acquire and develop the skills associated with computer science in order to:
 - Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.
 - Use sequence, selection and repetition in programs; work with variables and various forms of input and output.
 - Use logical reasoning to explain how some algorithms work and detect and correct errors in algorithms and programs.
 - Understand computer networks including the internet; how they can provide multiple services such as the world wide web

I.T.

Our children should:

- Acquire and develop skills associated with Information technology in order to:
 - Use search technologies effectively.
 - Select, use and combine a variety of software on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.
 - acquire and refine the techniques eg saving, copying, checking the accuracy of input and output needed to use ICT;
 - practise mathematical skills eg ordering numbers including negative numbers, measuring and calculating to an appropriate number of decimal places, drawing and interpreting graphs and bar charts in real contexts;
 - learn why numerical and mathematical skills are useful and helpful to understanding;
 - develop the skills of collecting first hand data, analysing and evaluating it, making inferences or predictions and testing them, drawing and presenting conclusions, and use all these in their work with ICT.

Digital literacy

Our children should

- Acquire and develop their skills in digital literacy in order to:
 - Understand the opportunities networks offer for communication and collaboration.
 - Be discerning in evaluating and presenting data and information.
 - Be able to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Features of Progression

To ensure children make progress in computing, teaching should promote opportunities for children, as they move through the Key Stage, to progress:

- from using single forms of information to combining different types of information, matching the form of presentation to the audience and what is being communicated;
- from personal use of ICT to using ICT to meet the needs of, and communicate with, others;
- from using ICT to replicate and enrich what could be done without ICT e.g. playing a word game or drawing a picture to using ICT for purposes that could not have been envisaged without it such as exploring 'what if' situations and modelling new ones;
- from using everyday language to describe work with ICT to increasingly precise use of technical vocabulary and ways of recording;
- from personal use of ICT in a few areas to understanding a wider range of uses of ICT and the consequences of its use for themselves, their work and others;
- from using ICT to address a single task eg writing a story to addressing more complex issues, and balancing conflicting needs and criteria.
- from organising information as separate items eg single graphic image to organising information in sequences and more complicated, interactive, structures eg a multimedia presentation or a database;
- from initial exploration of ideas and patterns to more systematic use of ICT for analysis and design. Building on Children's Earlier Experiences