

Subject: Computing

Golden Concept: Information Technology

Purpose:

The purpose of the Information Technology strand within this curriculum is to focus on the practical application of technology, encompassing skills such as using software applications, understanding digital tools, coding, data management, and more.

This strand often emphasizes 4 areas Digital Literacy, Programming and Coding, Information Systems, and Data Handling

This strand aims to equip students with practical skills and knowledge needed in the increasingly digital modern world, focusing on using technology as a tool for problem-solving, communication, and innovation providing a basis for more specialized study in computing at higher levels of education.

Assessment:

KS1 and KS2 are through teacher Assessment. Teachers assess students' progress based on their understanding and application of the computing curriculum. This includes observing students' practical work exercises, End-of-Key-Stage Assessments, and demonstrations of progression over time.

At KS3 teachers assess students' progress in computing by evaluating their understanding of concepts, application of computational thinking, and practical skills. Project-Based Assessments may be used that involve problem-solving, coding, or working with technology. Assessment could be based on the completion and quality of these projects.

The assessments in computing aim to evaluate not only students' technical skills but also their understanding of computational concepts, problem-solving abilities, and creativity in applying technology to solve problems.

Cross curriculum:

Computing offers various cross-curricular links that can be integrated into primary and secondary education. By integrating computing skills into various subjects, educators can enhance students' understanding of both computing concepts and their application in real-world scenarios. Some examples are:

Mathematics: Teaching programming involves creating algorithms, which relate directly to mathematical problem-solving and logical thinking.

Science: Understanding simulations, modelling, and data analysis through computing relates to scientific processes and experimentation.

Technology: Exploring how computers work, understanding hardware components, and coding can link to technology and engineering concepts.

English: Creative Writing and Storytelling: Encouraging students to write stories or create narratives through coding or digital storytelling platforms.

Geography: Mapping using GPS, utilizing online databases, understanding the impact of technology on society.

Art and Design: Integrating coding for creating digital art or designing interactive media.

Physical Education: Fitness Trackers and Technology: Exploring how technology measures physical activity and health data.

Music: Introducing coding for music composition or using software to create and manipulate sounds.

Business Studies: Entrepreneurship and Innovation: Understanding the role of technology in business innovation, introducing basic concepts of coding for business applications. Understanding market trends, analysing data, and make predictions.

Citizenship/Ethics: Social Impact of Technology: Discussing how technology affects society, its benefits, and potential drawbacks.

Key Stage or stage breakdown:

Evaluate and Apply information technology in KS1 and KS2 is introductory and aims to familiarize young students with technology in a way that's engaging and age-appropriate. The emphasis is on building a basic understanding of technology as a tool for various purposes and encouraging exploration and curiosity about digital devices and their functionalities. At KS2 the focus on developing a fundamental understanding of technology, its uses, and basic problem-solving skills. The emphasis is on building a solid foundation for more complex computational skills and critical thinking that will be introduced in later stages of education.

At KS3, these concepts are taught to equip students with both the critical thinking and problem-solving skills to assess technology. and the practical skills to effectively use and innovate with it. Students should be encouraged to explore and experiment with technology to create new solutions using technological tools or systems to solve problems or achieve specific objectives.

Analytical problem-solving at KS1 and KS2 in computing involves nurturing logical thinking and computational skills. Reinforcing the idea that problem-solving involves breaking down problems, sequencing actions, and trying different solutions. Emphasize that making mistakes is part of the learning process and that persistence is key.

At KS3 Computing, it involves breaking down complex issues into smaller, more manageable parts. It's a systematic approach to understanding a problem, identifying its components, and devising a clear plan to reach a solution. Throughout this process, students learn to think logically, methodically, and creatively.