

Year 8 ICT
Curriculum



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Introduction

The Year 8 curriculum will revise and build on the knowledge and skills acquired in Year 7.

Key Concepts: Expanding Horizons

- **Algorithms and Data Structures:** Explore more advanced algorithms (e.g., sorting, searching) and data structures (lists, arrays). Understand their use in problem-solving.
- **Programming:** Transition to a textual programming language (e.g., Python) to create more complex programs. Explore concepts of functions, procedures, and modular programming.
- **Computational Modelling:** Use computational models to stimulate real-world phenomena (e.g., weather patterns, population growth).
- **Networks and Communications:** Understand basic networking concepts (LAN, WAN, internet). Explore how data is transmitted over networks.
- **Digital Design:** Introduce principles of user interface design and usability. Create simple digital designs (e.g., websites, infographics).

Learning Objectives

Pupils will be taught to:

- Design and evaluate computational abstractions for more complex problems.
- Compare the utility of different algorithms for the same problem.
- Use Data structures (lists, tables, arrays) in programming.
- Understand the use of procedures and functions in modular programming.
- Carry out more complex operations on binary numbers (e.g., addition, subtraction, multiplication).
- Understand how data is stored and accessed in computer systems.
- Create and debug more complex programs.
- Understand the ethical and social implications of using technology.



Teaching and Learning Activities

- Designing and implementing more complex algorithms (e.g., sorting, searching).
- Using programming to create interactive projects (e.g., simulations, games).
- Learning about data structures and their applications.
- Writing modular programs using procedures and functions.
- Exploring the ethical and social implications of technology (e.g., privacy, digital divide).
- Creating digital artefacts for specific audiences (e.g., websites, infographics).

Assessment Objectives:

Pupils will be assessed on their ability to:

- Create and evaluate computational models for real-world problems.
- Analyse and compare different algorithms.
- Use data structures effectively in programming.
- Write modular programs using procedures and functions.
- Perform binary operations and understand data representation.
- Explain how data is stored and accessed in computer systems.
- Debug and test programs.
- Demonstrate understanding of ethical and social issues related to technology.

Evaluation and Review

The curriculum will be reviewed annually to ensure its effectiveness. Feedback from students, teachers, and parents will be considered in the review process.

Updated August 2024

Next review: August 2025