ICT /Computer Science

Year 5-9 (2025 - 2026)

Purpose of study

KS2 (Years 5-6)

Throughout KS2 we will involve the children in the development and creation of applications using algorithms. We will enhance their understanding of and develop within them a greater appreciation of 21st Century principles and technologies.

- At Traill, we would like for every child to have opportunities to be involved in the creation of software and algorithms.
- Our children will gain an understanding of what it means to be a 21st century learner who; collaborates, evaluates and critically approaches information.

KS3 (Years 7-9)

Throughout KS3 the students will learn many exciting and interesting practical ICT and Computer Science skills. The scope of the teaching is very broad to demonstrate the large variety of possible job roles the students might enjoy in their future. To give them a taste of what is possible using technology so as to encourage them to study the subject further throughout the education system and in their spare time.

Aims

The national curriculum for computer science aims to ensure that all pupils:

- Develop digital proficiency. To be completely at ease using and operating a computer and saving and retrieving files/work.
- To develop their computational thinking; which is to break problems down into solvable chunks and to use a skillset learnt to implement solutions to such problems.
- To become further aware of the uses/advantages of ICT/technology both as an educational tool and as part of their everyday life.

The Scope of ICT/CS Units Covered During KS2 / KS3:

Year 5	Year 6	Year 7	Year 8	Year 9
iProgram Unit 1 Introduces the idea of movement in Scratch	iNetwork: What are networks and how do we use them to communicate	Computer Hardware and Software	inspiring Digital Enterprise Award	inspiring Digital Enterprise Award
iProgram Unit 2	iProgram Unit1 introduction to loops and if statements	About Me Presentation	Understanding How Computer deals with information - Binary Bits and Bobs	Computer Architecture (Back to the Future)
E-safety	iCrypto	Advanced Scratch Programming	Introduction to Python Programming	Python Programming
iAlgorithm (How to search effectively)	Introduction to Programming (scratch)	HTML Coding	Spreadsheets	Computer Networks
iWeb	Cont.	inspiring Digital Enterprise Award	Introduction to Computer Networks	Graphics/App Design

Students will also learn about computerized numbering systems, complex searching and sorting algorithms, and will learn about cryptography to solve puzzles laterally. The course also helps develop a safe and secure way of conducting oneself online, and educates about cyberbullying and other contemporary security and health issues.

Pupils should be able to describe associated processes and key characteristics in common language, but they should also be familiar with, and use, technical terminology accurately and precisely. They should build up an extended specialist 'digital citizen' vocabulary.

The principal focus of teaching Computer Science/ICT in key stage 2 is to develop a clear understanding and a solid foundation of Computing. For Key stage 3 is to develop a deeper understanding of a range of scientific ideas in the subject disciplines of ICT and Computer Science. They should be encouraged to relate scientific explanations to phenomena in the world around them and start to use modelling and abstract ideas to develop and evaluate explanations and to be able to describe them using standardized scientific language such as pseudo code and high-level languages.