Theale Church of England Primary School

Computing Curriculum Policy

"ICT expands horizons by shrinking worlds." David Brown, Chairman, Motorola Ltd.

The rationale for teaching computing

Children today will lead lives inextricably linked with computing and ICT. The rapid and continuing development of ICT over recent years has woven computers into the fabric of modern society, becoming an essential component of daily life for people of all ages and backgrounds. ICT is now integral to all aspects of the contemporary world, including recreation, education and employment. Pupils will already possess some experience of ICT but it requires dedicated teaching and systematic learning to translate this pre-existing knowledge into productive skills. Quality computing education should equip engage and inspire pupils to develop a high level of comfort with ICT, providing them with the capabilities and awareness necessary to succeed in the digital world while remaining vigilant of associated risks. Being able to expertly use computers, whether that means embedding familiarity with common software or learning to code software of their own, will improve the safety, social skills and overall life chances of all pupils.

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.

Curriculum Intent

At Theale Church of England School we will ensure that all children attain the highest possible level of technical skill and knowledge of computing to allow them to safely and expertly use ICT throughout their lives and enable further study to the highest level.

Curriculum Implementation

Children will:

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

This will be achieved through high quality teaching of all aspects of computing and the implementation of ICT resources throughout the wider curriculum.

Impact of Computing Teaching

The children will be taught to:

EYFS:

recognize that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.

Key stage 1:

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs
- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- recognise common uses of information technology beyond school
- use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

Key Stage 2:

- 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 simple algorithms work and to 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; and the opportunities they offer for communication and collaboration
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- select, use and combine a variety of software (including internet services) 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
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Equal Opportunities, Gifted and Talented Pupils and those with Special Needs

Every child will be given equal opportunity and access to computing irrespective of their ethnic or linguistic background, race, sex, gender, disability or religious beliefs. Children with Special Educational Needs will have full access to the computing curriculum which will be modified to best meet their needs. Those identified as Able, Gifted and Talented in computing will be given opportunities to develop their skills further. Collaboration and the development of children's, social, moral, spiritual and cultural education will be promoted through computing teaching.

Resources

Appropriate resources to support work will be readily available and accessible to both teachers and pupils. They should be clearly labelled, in adequate supply and in a good state of repair. Care of resources should be emphasised to both pupils and staff. The Subject Leader should be informed of the need to replace or repair equipment.

Monitoring and Assessment

The monitoring of computing will take the form of classroom observations by specialist staff, monitoring of planning, work scrutiny, interviews with children, and learning walks. The subject leader, working with the head teacher, is responsible for the monitoring of computing – records will be kept as appropriate. The head teacher will report to governors. Achievements in computing will be reported to parents in children's annual report and celebrated throughout the year.

The Structure of Computing & ICT Provision All years:

1 x 60 minute Computing lesson per two weeks
Regular opportunities to access ICT in other curriculum areas