

Computing Curriculum Gawthorpe Community Academy

Our computing curriculum is designed to progressively develop children skills in computing, through regular taught lessons. We aim to prepare our children for the modern world, and be ready for the world of work and study by creating a highly engaging, exciting and relevant computing curriculum. Children progressively acquire, use and apply a growing bank of computing skills, organised around topics. **All our children have regular computing lessons, where skills are taught and practised. These are then applied across the curriculum where appropriate.**

We use the 'Switched on Computing' programme to ensure we deliver the New National Curriculum. This places children in the position of completing specific tasks as if they were working in the world of computing. This is a consistent approach from year 1 to 6, ensuring children understand how central computing is to life in the modern world.

Our teaching is using primarily web-based programmes. This ensures that all children will be able to access and use these programmes both at home and in their daily life and studies.

E-Safety is taught as part of the programme, and is carefully planned into the units.

Our curriculum delivers the New National Curriculum:

Purpose of study

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.

Aims

The national curriculum for computing aims to ensure that all pupils:

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

Attainment targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Schools are not required by law to teach the example content in [square brackets].

Subject content

Key stage 1

Pupils should be taught to:

- 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

Pupils should be taught 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 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.

Map of computing topics covered across the Academy:

Year group	Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6
1	We are TV chefs – filming the steps of a recipe	We are celebrating – Creating a card digitally	We are treasure hunters – Using programmable toys (algorithms)	We are painters – Illustrating an E-book	We are storytellers – Producing a talking book	We are collectors – Finding images using the web
2	We are astronauts – Programming on screen	We are games testers – computer games	We are photographers	We are researchers	We are detectives – looking for clues	We are zoologists – data handling about animals
3	We are programmers – programming an animation	We are bug fixers – Finding and correcting bugs in programmes	We are presenters – Videoing performance	We are network engineers – Exploring networks including the internet	We are communicators – Communicating safely on the internet	We are opinion pollsters – collecting and analysing information
4	We are software developers	We are toy designers	We are musicians	We are HTML editors	We are co-authors	We are meteorologists
5	We are game developers	We are cryptographers	We are artists	We are web developers	We are bloggers	We are architects
6	We are app planners	We are project managers	We are market researchers	We are interface designers	We are app developers	We are marketers