# Computing Pathway

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**INTENT:**

At Camelford, we provide an exciting, rich, relevant, progressive and challenging computing curriculum for all pupils. Our intention is to enthuse and equip pupils with the capability to use technology effectively throughout their lives.

It is important to us that children understand how to use ever-changing technology to express themselves, support their learning and develop skills that will prepare them for the future. Through our computing curriculum, pupils are encouraged to think creatively, solve problems and work collaboratively in a digital world.

While ensuring pupils understand the advantages and disadvantages associated with online experiences, we aim to develop respectful, responsible and confident users of technology. Pupils are encouraged to treat others with kindness and respect online and to understand the importance of using technology responsibly.

Our aim is to provide a Computing curriculum that balances the acquisition of a broad and deep knowledge (substantive knowledge) alongside opportunities to apply skills (disciplinary skills) in a variety of digital contexts. Beyond discrete computing lessons, pupils are given opportunities to apply and develop their computing knowledge across the wider curriculum.

**IMPLEMENTATION:**

Computing contributes to teaching and learning across the curriculum and is taught through both discrete lessons and cross-curricular opportunities. At Camelford, pupils have regular access to computers and digital technologies to develop their knowledge and skills of digital systems and their applications. We use the Mixed Age Kapow Primary scheme of work to support the planning and teaching of Computing - Year A starting in 2026.

The National Curriculum states:

“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, express themselves and develop their ideas through information and communication technology.”

The Kapow Primary scheme is built around three key strands which run throughout the curriculum:

Computer Science - Information Technology - Digital Literacy

The scheme is organised into five key areas which allow pupils to revisit and build upon prior learning:

Computer systems and networks - Programming - Creating media - Data handling - Online safety

Teachers are supported with yearly overviews, detailed planning and additional resources to deliver the scheme effectively. The subject leader monitors and reviews the curriculum to ensure high-quality teaching and learning. Lessons include a variety of teaching approaches such as independent tasks, paired work, group collaboration, unplugged activities and digital learning. This variety helps to ensure lessons are engaging and accessible to pupils with a range of learning styles. Knowledge organisers are used to support pupils in building secure understanding of key vocabulary and concepts, encouraging recall and helping pupils make connections between units of learning.

Strong subject knowledge is essential for delivering an effective computing curriculum. Kapow provides teacher videos and resources to support staff development and ensure teachers feel confident delivering computing lessons. Additional professional development opportunities are also available through Kapow's specialist webinars.

## INCLUSION AND ADAPTIVE TEACHING

At Camelford, we are committed to ensuring that all pupils can access and succeed in computing. Teachers use a range of adaptive teaching strategies to support different learning needs and starting points. These may include:

- Pre-teaching and revisiting key computing vocabulary,
- Modelling digital skills and programming processes,
- Using visual supports such as diagrams, screenshots and demonstrations
- Scaffolded activities to support pupils with additional needs
- Opportunities for collaborative learning and peer support
- Extension tasks to deepen understanding and challenge more confident learners
- By adapting teaching appropriately, we ensure that all pupils can participate confidently in computing lessons and develop the digital skills needed for the future.

## IMPACT

The impact of the computing curriculum is monitored through both formative and summative assessment opportunities. Each lesson includes guidance to support teachers in assessing pupils against learning objectives, and each unit includes quizzes and knowledge checks to support retrieval and measure understanding.

Through the implementation of the Kapow Primary scheme, pupils at Camelford develop the knowledge and skills needed to succeed in secondary education and participate confidently in an increasingly digital world.

As a result of our computing curriculum, pupils:

- Become critical thinkers who can make informed digital choices
- Understand how technology supports learning, creativity and communication
- Recognise the importance of balancing time spent using technology with other activities
- Use technology to express ideas creatively and solve problems
- Demonstrate clear progression across computer science, information technology and digital literacy
- Work independently and collaboratively using digital tools
- Understand online safety and know how to respond appropriately to potential risks
- Develop awareness of how technology continues to evolve and shape the modern world

By the time pupils leave Camelford, they are digitally literate, responsible users of technology who are well prepared for the next stage of their education.

# National Curriculum Computing Statement 2014

## 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.

## Assessment

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.

# National Curriculum 2014 Key Stage 1 Computing

**Subject Content:**

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

| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
|---|---|---|---|---|---|---|
| KS1 | | | | | | |
| Year A | Computing Systems: Using computer 1. | Programming 1: Commands unplugged | Programming 1: Algorithms and debugging | Creating Media: Digital designers 1 | Creating Media: Digital designers 2 | N/A |
| Year B | Computing Systems: Using computer 1. | Programming 1:<br>1. Bee-Bots<br>2. Digital Bee-Bots | Programming 2:<br>1. MakeCode<br>2. ScratchJr | Creating Media: Digital designers 3 | Data handling: Introduction to data | Online Safety: Online privacy and safe use |

# National Curriculum 2014 Key Stage 2 Computing

**Subject Content:**

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

| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
|---|---|---|---|---|---|---|
| LKS2 | | | | | | |
| Year A | Programming Scratch | Computer devices: connecting devices | Programming 1 Further coding with Scratch | Creating Media: Creating video trailers | Online Safety Connecting Safely online. | N/A |
| Year B | Programming 2: Computational Thinking | Computing systems: Managing digital information | Programming: Make:code Loops | Creating Media: Creating a website | Creating Media: Creating digital images | Data handling: Exploring branching databases |

| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
|---|---|---|---|---|---|---|
| UKS2 | | | | | | |
| Year A | Programming 1 Scratch Music | Computer systems: Websites, search and storage | Programming 1 Scratch: Pixels and positions | Creating Media: Creating animations | Data handling: Exploring spreadsheets | N/A |
| Year B | Programming 2: BBC micro:bit | Computing systems and networks: Machine learning | Programming: Exploring Python | Creating Media: Creating podcasts | Creating Media: Creating a multimedia project | Online safety: Life online. |