



# Computing Policy

This policy sets out our school's vision, aims, principles and strategies for the delivery of Computing and the use of technology to support the curriculum.

## What is 'Computing'?

The National Curriculum Purpose of Study states that:

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.

Whilst the Computing Curriculum has an increased focus on Computer Science including developing pupils' programming skills and their understanding of what happens 'behind the scenes', it is important that they also continue to develop their Digital Literacy and e-safety capability and our school curriculum is designed to reflect this.

## Kniveton CofE Primary School's Computing Curriculum

As a school, we embrace the national vision for Computing and appreciate that, to achieve this, pupils must have access to a curriculum which is 'balanced and broadly based'.

Our aim is to produce learners who are confident, discerning and effective users of technology and who also have a good understanding of computers and how computer systems work, and how they are designed and programmed. We believe that Computing is an integral part of preparing children to live in a world where technology is continuously and rapidly evolving.

## Intent

At our school, we want to model and educate our pupils on how to use technology positively, responsibly and safely. We want our pupils to be creators and our broad curriculum encompassing computer science, information technology and digital literacy reflects this.

We recognise that technology can allow pupils to share their learning in creative ways. We also understand the accessibility opportunities technology can provide for our pupils. Our knowledge rich curriculum is balanced with the opportunity for pupils to apply their knowledge creatively which will in turn help our pupils become skilful computer scientists.

## **We strive to achieve this aim by:**

- Embedding computing across the whole curriculum to make learning creative and accessible. We want our pupils to be fluent with a range of tools to best express their understanding and hope by Upper Key Stage 2, children have the independence and confidence to choose the best tool to fulfil the task and challenge set by teachers.
- Supporting all children in using technology with purpose and enjoyment

- Meeting, and building on the minimum requirement set out in the National Curriculum as fully as possible and helping all children to achieve the highest possible standards of achievement. We aim to provide an exciting, rich, relevant and challenging Computing curriculum for all pupils.

- Helping all children to develop the underlying skills and capability which is essential to developing Computing capability (such as problem solving, perseverance, learning from mistakes) and apply them elsewhere.
- Helping all children to develop the necessary skills to exploit the potential of technology and to become autonomous and discerning users
- Helping all children to evaluate the benefits and risks of technology, its impact on society and how to manage their use of it safely and respectfully.
- Using technology to develop partnerships beyond the school and enthuse and equip children with the capability to use technology throughout their lives.
- Giving children access to a variety of high quality hardware, software and unplugged resources.
- Instil critical thinking, reflective learning and a 'can do' attitude for all our pupils, particularly when engaging with technology and its associated resources.
- Teach pupils to become responsible, respectful and competent users of data, information and communication technology.
- Teach pupils to understand the importance of governance and legislation regarding how information is used, stored, created, retrieved, shared and manipulated.
- Use technology imaginatively and creatively to inspire and engage all pupils, as well as using it to be more efficient in the tasks associated with running an effective school.
- Provide technology solutions for forging better home and school links.
- Exceed the minimum government recommended/statutory guidance for programmes of study for Computing and other related legislative guidance (online safety).

## Implementation

At Kniveton CofE Primary School, teachers are encouraged to progressively develop pupils' Computing skills and capability through use of the Purple Mash schemes of work and also embracing opportunities for discrete learning opportunities to exploit this capability as a tool to support objectives in other curriculum areas meaningfully. These links include, but are not limited to, the use of a range digital devices in a wide range of contexts. Both plugged and unplugged learning opportunities are planned to support pupils' understanding of the underlying concepts in Computing. These opportunities may well be presented within other subject areas (e.g. sequencing instructions in English, problems solving in Maths or isolating variables in Science). In this way Computing and the use of technology become integrated into the curriculum and are used as a truly beneficial tool for learning.

Using the Purple Mash schemes of work support our teachers in delivering fun and engaging lessons which help to raise standards and allow all pupils to achieve to their full potential. We are confident that this scheme of work meets the national vision for Computing. It provides immense flexibility and strong cross-curricular links.

The learning for each year group in Purple Mash is broken into units covering three main components:

- Computer Science
- Information Technology
- Digital Literacy

These themes are mapped in a long term plan for the whole school, with elements of each theme taught in most terms.

Through the above components, we deploy appropriately challenging activities which develop children's skills. We provide appropriate quality equipment for the teaching of Computing, which includes Ipads and a class set of laptops. This ensures that all year groups have the opportunity to use devices and programs for many purposes across the wider curriculum, as well as in discrete computing lessons.

### **Computing in the EYFS**

In the EYFS, opportunities for the use of technology are an integral part of each area of learning and the school ensures that children have access to both continuous and enhanced provision. Links are made between the EYFS Early Learning Goals and the Y1 curriculum to ensure a smooth transition takes place. This will ensure that pupils enter Year 1 with a foundation of knowledge of computing. Our Computing scheme for Reception is centred around activities that focus on building children's listening skills, curiosity, creativity and problem solving, whilst introducing them to Purple Mash programmes and features, such as:

- 2Paint a Picture for creating digital pictures
- Mini Mash topic based picture stories to read
- Simple City for creating a familiar environment
- Slideshows for exploring topics of interest
- 2Design and Make to explore and create 3D model designs.

### **Computing in Reception at Kniveton CofE Primary means:**

- taking a photograph with tablet or camera
- watching video clips and slideshows to support their learning across the curriculum
- listening to music and using digital technology to create their own music
- recording their voice (for singing, storytelling or building sentences verbally)
- following and creating basic instructions to make objects on screen move or direct vehicles
- exploring maps, jigsaws and accessing a variety of games to support their learning across all areas of learning
- searching for information on the internet
- using digital technology to support their learning (by planning models or recording their ideas, for example)
- exploring mechanical and digital toys

Our Reception Computing Curriculum is designed to enable our youngest pupils to develop a familiarity with technology, digital equipment and vocabulary. The Purple Mash Scheme of Work for Reception is planned across all seven areas of learning (Communication and Language; Personal, Social and Emotional Development; Physical Development; Literacy; Mathematics; Understanding the World; and Expressive Art and Design). It is a flexible approach to meet the needs and interests of the children and provides teachers with lots of lesson ideas that support children's development of knowledge, skills and understanding

and provides them with an introduction to some of the Purple Mash programmes and features.

## **Computing in KS1/KS2**

### **Key Stage 1 outcomes**

- Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following a sequence of instructions.
- Write and test simple programs.
- Organise, store, manipulate and retrieve data in a range of digital formats.
- Communicate safely and respectfully online, keeping personal information private, and recognise common uses of information technology beyond school.

### **Key Stage 2 outcomes**

- Design and write 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; generate appropriate inputs and predicted outputs to test programs.
- Use logical reasoning to explain how a simple algorithm works 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 worldwide web; and the opportunities they offer for communication and collaboration.
- Describe how Internet search engines find and store data; use search engines effectively; be discerning in evaluating digital content; respect individuals and intellectual property; use technology responsibly, securely and safely.
- Select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

## **Safeguarding Children: Online Safety**

At Kniveton CofE Primary School we believe that the use of technology in schools brings great benefits. To live, learn and work successfully in an increasingly complex and information-rich society, our children must be able to use technology effectively. The use of these exciting and innovative technology tools in school and at home has been shown to raise educational standards and promote pupil achievement. Yet at the same time we recognise that the use of these technologies can put young people at risk within and outside the school.

The biggest impact we want on our children is that they understand the consequences of using the internet and that they are also aware of how to keep themselves safe online. We believe in teaching children the importance of using computers appropriately and developing skills for staying safe online.

As well as teaching children about online safety through their computing lessons, we also take part in the **National Safer Internet Day annually**, to positively reinforce the key messages around staying safe online with pupils and parents. This allows us to implement an effective and engaging approach to online safety while meeting our safeguarding duties as outlined in the latest KCSIE (Keeping Children Safe in Education) guidance.

**The school has developed a separate policy which details our approach to online safety and safeguarding children and staff when using technology both within and beyond the school.**

## **Access and Inclusion**

Each pupil's access to technology varies greatly dependent on the nature of the activity they are involved in (e.g. some activities benefit from prolonged access to a computer whilst other are best served with brief access to a digital device for a focussed purpose). However, on average, pupils have 1 hour allocated to Computing each week using a mixture of unplugged activities and the following technology:

- Laptops
- iPads
- Programming equipment

In addition to discrete Computing sessions, opportunities to develop and extend Computing capability are provided in other curriculum areas and technology is used to support most other subject areas.

The SEND lead advise teachers on examples of technology which can be provided to support individual children with particular physical, linguistic and educational needs, including gifted and talented pupils.

Children with access to technology at home are encouraged to use it for educational benefit and online safety guidance is offered to both pupils and parents where appropriate.

## Impact

Our Computing Curriculum has been structured to demonstrate a progression of skills and ensures that children can build on their understanding, as each new concept and skill is taught with opportunities for children to revisit skills and knowledge as they progress through school.'

## Monitoring

The Computing Subject Leader follows a systematic and regular programme of evaluation and monitoring of the Computing curriculum, across the school. This is so that she can measure the impact and monitor the quality of education being provided to all pupils, including:

- Checking that the school's curriculum 'Implementation' matches its 'Intent'
- Evaluating the success (or otherwise) of curriculum planning and delivery
- Having an awareness of impact and be able to demonstrate progression and attainment
- Having an overview of resource and staff training needs

### **Monitoring is completed via a variety of methods including:**

- Observations/Learning walks
- Collecting and analysing planning
- Work scrutinies
- Inspection of children's computing folder and the quality of the digital content they create.
- Gathering information from observations of other subjects
- Pupil conversations/ interviews / pupils voice
- Staff interviews / feedback

At the end of each half term the class teacher makes a judgement as to whether a child is working at the level, working towards the expected level or working at a Greater Depth(achieving above).

As a result of monitoring, appropriate CPD opportunities are provided for staff on an individual, group and whole school basis in line with the school's wider CPD policy and the School Development Plan.

## **Recording and Assessment**

We (will) ensure that:

- appropriate Assessment for Learning approaches are applied to formative assessment in order to inform future planning
- pupils' achievement and attainment is assessed and recorded on at least a half termly basis.
- pupils' achievement and attainment is measured against the relevant National Curriculum requirements at the end of each Key Stage and reported according to government guidelines (including statutory requirements for reporting to parents)

## **Roles and Responsibilities**

The role and impact of technology stretches beyond the National Curriculum for Computing and it is therefore important to acknowledge the roles and responsibilities held by key people across the school.

**The following responsibilities are carried out by the head teacher:**

- ensuring the consistent implementation of Computing policy
- ensuring continuity between year groups
- overseeing health and safety policy and practice
- resources budget management
- ratifying the school's Strategic Development Plan for Technology
- arranging in-service support
- Leading the development and implementation of the school's e-safety policy in line with other Child Protection policies

**The following responsibilities are carried out by the Computing Subject Leader:**

- presenting exemplary practice in the teaching of Computing
- advising colleagues on planning, delivering and assessing Computing
- Monitoring the effective use of technology and giving advice where appropriate
- ensuring progression in Computing
- suggested purchasing plans for hardware and software
- organising Computing resources
- identifying what support / CPD is needed by individual staff / groups of staff / the whole school
- reviewing and revising the Computing policy and other associated documents
- creation of a school portfolio of evidence
- Co-ordinating and overseeing equipment maintenance

## **Responsibilities carried out by an ICT Support Technician**

All equipment is supported and maintained through a regular visit from our computing technicians (eright) who works under the direction of the headteacher.

- The ICT and computing technicians *eright* will be responsible for regularly updating anti-virus software.
- Use of ICT and computing will be in line with the school's Acceptable Use Policy'. (All staff, volunteers and children must sign a copy of the schools AUP.)
- Parents will be made aware of the 'Acceptable Use Policy'.

## **Health and safety**

Both staff and children are aware of the need for health and safety to be kept in mind when using technology. Signs displaying relevant warnings are displayed around the school and regular attention is drawn to the issue of safe use of equipment. In particular, the following safety issues have been considered when using technology in school:

*Comfort* - users should be comfortably positioned with easy access to all equipment.

*Space* - There should be enough space around a workstation.

*Seating* - this has been chosen so that it is the correct height for knees to fit comfortably under the desk.

*Monitors* - These should be moved to suit the needs of the users.

*Cables* - Are covered and secure. Children are not to connect or unplug electrical equipment.

*Digital Projectors* - Users are aware that they must not look directly into the light beam emitting from the digital projector.

All pupils are taught to handle equipment correctly and to switch computers on and off using the correct procedures. The dangers of electricity are stressed and all of the above are presented so as to ensure the pupils respect the equipment and respect other people's work on the computer. All users are also reminded of the need to take regular breaks when using electrical equipment.