Computing Policy

Introduction

With technology playing such a significant role in society today, we believe 'Computational Thinking' is a skill children must be taught if they are to be able to participate effectively and safely in this digital world. A high-quality computing education equips pupils to use 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 national curriculum for computing aims to ensure that all pupils:

- Can understand and apply the fundamental principles of computer science, including logic, algorithms, data representation, and communication
- 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.

Objectives

Early years

It is important in the foundation stage to give children a broad, play-based experience of ICT in a range of contexts, including outdoor play. Computing is not just about computers. Early years learning environments should feature ICT scenarios based on experience in the real world, such as in role play. Children gain confidence, control and language skills through opportunities to explore using noncomputer based resources such as metal detectors, controllable traffic lights and walkie-talkie sets. Recording devices can support children to develop their communication skills. This is particular useful with children who have English as an additional language.

By the end of 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 to create, organise, store, manipulate and retrieve digital content
- Recognise common uses of information technology beyond the school
- Use technology safely and respectfully online, keeping personal information private, identify where to go for help and support when they have concerns about content or contact the Internet or other online technologies

By the end of key stage 2 pupils should be taught to:

- 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 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 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

Implementation

At Fringford Primary School, computing is taught using a blocked curriculum approach. This ensures children are able to develop depth in their knowledge and skills over the duration of each of their computing topics. Teachers use the '123 SOW' as a starting point for the planning of their computing lessons, which are often richly linked to engaging contexts in other subjects and topics.

We employ cross-curricular links which motivates pupils and supports them to make connections and remember the steps they have been taught. The implementation of the curriculum also ensures a balanced coverage of computer science, information technology and digital literacy. The children will have experiences of all three strands in each year group, but the subject knowledge imparted becomes increasingly specific and in depth, with more complex skills being taught, thus ensuring that learning is built upon. For example, children in Key Stage 1 learn what algorithms are, which leads them to the design stage of programming in Key Stage

2, where they design, write and debug programs, explaining the thinking behind their algorithms.

In Upper Key stage Two, children also take part in iDEA (Inspiring Digital Enterprise Award). The Inspiring Digital Enterprise Award, known as iDEA is an international award winning programme that helps you develop digital, enterprise and employability skills for free.

Through a series of online challenges, children can win career-enhancing badges, unlock new opportunities and, ultimately, gain industry-recognised Awards. Children complete the challenges in their own time at home and bring in their certificates at school for celebration.

Assessment and record keeping

Teachers regularly assess capability through observations and looking at completed work. Key objectives to be assessed are taken from the national curriculum to assess key computing skills each term. Assessing ICT and computing work is an integral part of teaching and learning and central to good practice. As assessment is part of the learning process it is essential that pupils are closely involved.
Assessment can be broken down into;

- Formative assessments which are carried out during and following short focused tasks and activities. They provide pupils and teaching staff the opportunity to reflect on their learning in the context of the agreed success criteria. This feeds into planning for the next lesson or activity.
- Summative assessment should review pupils' capability and provide a best fit. Use of independent open ended tasks, provide opportunities for pupils to demonstrate capability in relation to the term's work. There should be an opportunity for pupil review and identification of next steps. Summative assessment should be recorded for all pupils – showing whether the pupils are below, within or secure in the learning objectives.

Coverage and assessment is tracked onto the school's assessment system: Insight.

Monitoring and evaluation

The Head teacher and subject leader are responsible for monitoring the standard of the children's work and the quality of teaching. The subject leader is also responsible for supporting colleagues in the teaching of computing, for being informed about current developments in the subject, and for providing a strategic lead and direction for the subject in the school. The governors will ensure this policy is reviewed.

Equal opportunities

We will ensure that all children are provided with the same learning opportunities whatever their social class, gender, culture, race, disability or learning difficulties. As a result we hope to enable all children to develop positive attitudes towards others. All pupils have equal access to ICT and computing and all staff members follow the equal opportunities policy. Resources for SEN children and gifted & talented will be made available to support and challenge appropriately.

Health and safety (see also health and safety policy)

The school is aware of the health and safety issues involved in children's use of ICT and computing.

- All fixed electrical appliances in school are tested by a contractor every five years and all portable electrical equipment in school is tested by an external contractor every twelve months. Staff should not bring their own electrical equipment in to school but if this is necessary, then the equipment must be PAT tested before being used in school.

- Damaged equipment should be reported to the Head teacher or office manager who will arrange for repair or disposal.

- Children should be supervised when using plug sockets.

- Trailing leads should be made safe behind the equipment

- Liquids must not be taken near the computers

- E-safety forms an integral part of the curriculum and the school will deliver further education through assemblies termly and parent presentations biennially.

Security

- 123 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' at school entry • All pupils will be aware of the school rules for responsible use on login to the network and will understand the consequence of any misuse.
- The agreed rules for safe and responsible use of ICT and computing and the internet will be displayed in all ICT and computing areas.