Great and Little Shelford CE (A) Primary School
CURRICULUM POLICY FOR COMPUTING
Ratified - January 2017   Next review – September 2018

The Importance of Computing

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.

Aims

The National Curriculum 2014 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 for Computing.

Implementation

All teachers are responsible for the planning and teaching of Computing as outlined in the Programmes of Study in the National Curriculum 2014.

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

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- 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

Equal Opportunities
The school is committed to ensuring access and inclusion for all its pupils and believes that every child deserves the opportunity to fulfil their potential. We achieve this by ensuring that our planning meets the needs of all pupils: boys and girls, children with special educational needs, children who are more able, children with disabilities and children from all social and cultural backgrounds, different ethnic groups and diverse linguistic backgrounds.

Assessment
Continuous informal assessment takes place in order to assess progress in the subject. Children maintain an electronic folder of work that passes through the school with them. Once a project is completed the teacher completes a class assessment sheet and this is passed to the Subject Leader.

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

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Resources

All classes have interactive whiteboards, projectors, visualisers and printers.

All classes have 6 laptops or desktop machines for daily use. The school also has 24 extra laptops stored in the Practice Pod room for every child in a class to have a machine when necessary.

Each class has a good quality digital camera.

Year 6 have 6 units of Lego Mindstorms for programmable robotics.

All children from Years 3, 4, 5 & 6 are trained in and have access to the Cambridgeshire ICT Service Starz.

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