



Stocksfield Avenue Primary School



Computing Policy

Introduction

At Stocksfield Avenue Primary School we believe that Computing and the use of IT is central to the education of all children. We aim to give each pupil the opportunity to apply and develop their technological understanding and skills across a wide range of situations, equipment and tasks. Pupils are encouraged to develop a confident and safe approach to Computing and the use of IT, with the understanding of the capabilities and flexibility of their resources. With the knowledge that Computing and IT will undoubtedly continue to form a major part in the children's life at home, in further education and places of work, we ensure the Computing and IT experiences and abilities that the children are equipped with at Stocksfield Avenue Primary School, are effective and transferrable life skills.

Objectives

The National Curriculum 2014 states that a high quality Computing Curriculum equips children to use computational thinking and creativity to understand and change the world. Children learn the core of computing at Stocksfield Avenue Primary School, which is computer science and the principles of information and computation. Children also learn how digital systems work and how to put this knowledge to use through programming. Children will be equipped to use IT to create programs, systems and a range of content. Computing at Stocksfield Avenue Primary, ensures that children become digitally literate, able to use and express themselves and develop their ideas through IT, at a level suitable for their academic stage, that will develop them for the future workplace and as active participants in a digital world.

Aims and Purposes

The Computing curriculum should offer opportunities for our children to:

- Develop their understanding of the fundamental principles and concepts of computer science and have repeated practical experience of writing computer programs in order to solve such problems;
- Develop their skills in using hardware and software to manipulate information in their process of problem solving, recording and expressive work;
- Develop a high quality computing education, which equips children to understand and change the world through logical thinking and creativity.
- Develop pupil understanding of how digital systems work and so become digitally literate individuals.
- Explore children's attitudes towards IT, its value for themselves, others and society, and their awareness of its advantages and limitations.
- Be responsible, competent, confident and creative users of IT.
- Use ICT safely.

The Curriculum

At Stocksfield Avenue Primary School, knowledge, understanding and skills in computing and ICT are built upon and developed in each year group, from Nursery/Reception to Year 6. We develop children's computational thinking and explore the concepts behind it, as they form the basis for much of computer science. We therefore deliver our computing curriculum through the main vehicle of six main concepts. The concepts are taught in and out of the computer suite, using various devices or paper.

Logic - pattern and predicting

Algorithms – making steps and rules

Decomposition – breaking down into parts

Patterns – spotting and using similarities

Abstraction – removing unnecessary detail

Evaluation – making judgements

The National Computing Curriculum is comprised of **four** broad areas of learning, outlined below:

1. Computer science

Our children should:

- Acquire and develop the skills associated with computer science in order 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 algorithms work and detect and correct errors in algorithms and programs.
 - ✓ Understand computer networks including the internet and know how they can provide multiple services such as the World Wide Web.

2. I.T.

Our children should:

- Acquire and develop skills associated with Information technology in order to:
 - ✓ Use search technologies effectively.
 - ✓ Select, use and combine a variety of software 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.
 - ✓ Acquire and refine the techniques e.g. saving, copying, checking the accuracy of input and output needed to use devices;
 - ✓ Practise mathematical skills e.g. ordering numbers including negative numbers, measuring and calculating to an appropriate number of decimal places, drawing and interpreting graphs and bar charts in real contexts;
 - ✓ Learn why numerical and mathematical skills are useful and helpful to understanding;
 - ✓ Develop the skills of collecting first hand data, analysing and evaluating it, making inferences or predictions and testing them, drawing and presenting conclusions, and use all these in their work using different devices.

3. Digital literacy

Our children should:

- Acquire and develop their skills in digital literacy in order to:
- ✓ Understand the opportunities networks offer for communication and collaboration.
- ✓ Be discerning in evaluating and presenting data and information.
- ✓ Be able to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

4. Language and Communication

Our children should:

- ✓ Develop language skills e.g. in systematic writing and in presenting their own ideas;
- ✓ Use the appropriate technical vocabulary;
- ✓ Read non-fiction and extract information from sources such as reference books, I-books, e-pub books or DVD's.

Each Key Stage ensures coverage and progression: of skills taught and learnt throughout the school:

The Foundation Stage (Nursery/Reception)

In the Nursery and Reception years, children will:

- ✓ Know how to operate simple equipment, e.g. turn on a CD player and use a remote control.
- ✓ Show an interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phones.
- ✓ Show skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images.
- ✓ Know that information can be retrieved from computers
- ✓ Complete a simple program on a computer.
- ✓ Use ICT hardware to interact with age-appropriate computer software.
- ✓ To recognise that a range of technologies are used in places such as children's homes and schools.
- ✓ Select and use technology for particular purposes.

Key Stage 1

Throughout years 1 and 2, children will:

- ✓ 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 ICT beyond school,
- ✓ Use technology safely and respectfully, keeping personal information private, identify where to go to for help and support when they have concerns about content or contact on the internet or other online technologies.

Key Stage 2

Throughout years 3, 4, 5 and 6, children will:

- ✓ Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems and solving 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 worldwide 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.

Planning

Early Years Foundation Stage

Reception and Nursery class teachers develop weekly plans to introduce children to a wide range of devices. The plans follow the Early Years Foundation Stage Curriculum – Understanding the World - Technology. Staff use EYFS, Medium Term Planning Sheets to identify the learning objectives covered according to the age and the particular school term. The short term planning outlines each week's activities, identifying the knowledge, concepts, skills, attitudes and values that will be developed, and details differentiation, deployment of staff/volunteer support and resources. The class teacher keeps these individual plans, and the subject leader monitors and reviews them regularly. An additional 'Switched on' computing scheme has been purchased to follow. The deliverance of E-safety stories and/or lessons takes place each half a term or more.

Key Stage 1 & 2

Each class teacher in accordance with the 2014 National Curriculum plans computing. Class teachers draw up medium term plans at the beginning of each half term to use a cross-curricular approach linking learning across subjects. An appropriate balance and distribution of work across each half term with many opportunities to revisit and extend children's learning is incorporated into the new Computing Scheme of Work and use of 'Switched on Computing' Scheme. During each half term, specific learning objectives, tasks and activities are delivered using the school, Knowles or published scheme of work. Class teachers then highlight objectives on Year Group POS Plans and record broad details of lessons on large medium term topic plans. The class teacher keeps these individual plans, and the subject leader monitors and reviews them regularly. E-safety lessons are taught in accordance with the SWGFL Digital Literacy Scheme at least every half a term. Children participate in E-Safety assemblies within their Key Stages.

Values and Attitudes

Our children should:

- ✓ Work with others, listening to their ideas and expertise and treating these with respect e.g. cooperating and collaborating when using a computer as part of a group to ensure that all contribute;
- ✓ Acknowledge the ownership of ideas and recognise the value of information held on IT systems e.g. recognising how much work has gone into producing a computer file, and how easily careless access can destroy it;
- ✓ Be aware of the security of their own and other people's information in electronic form e.g. recognise that they should ask before reading or copying from other's work;
- ✓ Recognise the importance of printed output e.g. keeping examples of work safe so that source files may be easily identified when work is developed at a later date;
- ✓ Be creative and persistent e.g. when assembling a computer file from a large amount of source material;
- ✓ Consider the origin and quality of information and its fitness for purpose;
- ✓ Evaluate critically their own and others' use of computing;
- ✓ Recognise the strengths and limitations of computing and its users e.g. recognising that a word processor is an effective and efficient tool to help writing, but, on occasion, handwritten text is more appropriate;
- ✓ Develop knowledge and understanding of important ideas, processes and skills and relate these to everyday experiences;
- ✓ Learn about ways of thinking and finding out about and communicating ideas;
- ✓ Explore values and attitudes through computing.

Features of Progression

To ensure children make progress in computing, teaching should promote opportunities for children, as they move through the Key Stage, to progress:

- ✓ from using single forms of information to combining different types of information, matching the form of presentation to the audience and what is being communicated;
- ✓ from personal use of computing to using computing to meet the needs of, and communicate with, others;
- ✓ from using computing to replicate and enrich what could be done without computing *e.g. playing a word game or drawing a picture* to using devices for purposes that could not have been envisaged without it such as exploring 'what if' situations and modelling new ones;
- ✓ from using everyday language to describe work with computing to increasingly precise use of technical vocabulary and ways of recording;
- ✓ from personal use of computing in a few areas to understanding a wider range of uses of computing and the consequences of its use for themselves, their work and others;
- ✓ by using computing to address a single task *e.g. writing a story* or to *address more complex issues* and balancing conflicting needs and criteria;
- ✓ from organising information as separate items *e.g. single graphic image* to *organising information in sequences* and more complicated, interactive, structures *e.g. a multimedia presentation or a database*;
- ✓ through initial exploration of ideas and patterns to more systematic use of computing for analysis and design.

Assessment

Stocksfield Avenue Primary school uses an assessment system that is currently utilised by all of the eight schools in our Academy. Following extensive meetings the schools have agreed to a progressive assessment system that is skill based and divided into three broad areas. The three broad areas of Information Technology, Digital Literacy and Computer Science follow the Computing Curriculum outlined in the 2014 National Curriculum written by CAS representatives. Teachers assess children's computing work from a set of colour coded statements and record the children in their class that are working 'Below', 'At Expected' or at 'Greater Depth' in computing tasks. Teachers make computing assessments each term and monitor the progress of children's computing skills and understanding throughout the year.

In the Early Years Foundation Stage Curriculum – Understanding the World – Technology children's Computing skills and knowledge will be assessed against simple tasks set at home on 'Tapestry'. This allows for a dialogue to be set up between parents and school. Examples of tasks are recorded within 'Tapestry' and feature in Stocksfield Avenue's E-portfolio of computing work.

Building on Children's Earlier Experiences

Most of our children will have used a computer or I-pad, either at home or in their nursery and infant classes. The differing background children have in computing capability offer a significant challenge to staff at Stocksfield Avenue Primary. I-pad posters are available to staff which outline the apps that would best fit the children's learning needs. Staff can also book I-pads for specific lessons on the school network.

Children who have access to IT outside school often have greater skills in handling hardware and software. However, they may not have the full range of IT capability expected in the programme of study. By observing children's developing IT capability, we will be able to ascertain what tasks and expectations would best support their learning. A Computing digital portfolio is maintained by the subject leader to monitor and record progress and developments of year group computer work.

Reviewed: November 2018

Next Review due: November 2020