



Inspire Education Trust

Together we achieve, individually we grow

# Computing Policy



## Policy on Computing

### **1 Aims and objectives**

1.1 The Computing curriculum offers opportunities for our children to:

- Develop their understanding of the fundamental principles and concepts of computer science.
- 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 them to understand and change the world through logical thinking and creativity.
- Develop their understanding of how digital systems work and to become digitally literate individuals.
- Explore their attitudes towards ICT, its value for themselves, others and society, and their awareness of its advantages and limitations.

Through teaching Computing, we equip children to participate in a world of rapidly changing technology. We enable them to find, explore, analyse, exchange and present information. We also help them to develop the necessary skills for using information in an objective and effective way, ultimately being able to recognise bias within the information source. This is a major part of enabling children to be confident, creative and independent learners.

1.2 Our objectives in the teaching of Computing are fundamentally taken from the National Curriculum.

#### 1.2.1 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; how they can provide multiple services such as the World Wide Web.

### 1.2.2. 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 content that accomplishes given goals, including collecting, analysing, evaluating and presenting data and information.
- Acquire and refine the techniques needed to use ICT eg saving, copying and checking the accuracy of information.
- Practise mathematical skills eg 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; developing the skills of collecting first hand data, analysing and evaluating it.
- Make inferences or predictions and test them, drawing and presenting conclusions, and using all these skills in their work.

### 1.2.3 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.

## **2 Teaching and learning style**

2.1 A key objective of teaching of Computing is to equip children with the technological skill to become independent learners. In order to achieve this, the teaching style that we adopt is as active and practical as possible. While, at times, we do give children direct instruction on how to use hardware or software, the main emphasis of our teaching in Computing is for individuals or groups of children to use computers to help them to progress in whatever they are studying. So, for example, children might research a history topic by using role-play software that engages them in a highly visual way, or they might place themselves in a historical setting by manipulating a digital photograph, or they might investigate a particular issue on the Internet.

2.2 We recognise that all classes have children with a wide range of computing abilities. This is especially true when some children have access to computing equipment at home, while others do not. We provide suitable learning opportunities for all children by matching the challenge of the task to the ability and experience of the child. We achieve this in a variety of ways:

- setting tasks which are open-ended and can have a variety of responses;
- setting tasks of increasing difficulty (not all children complete all tasks);
- grouping children by ability in the room, and setting different tasks for each ability group;
- providing resources of different complexity that are matched to the ability of the child;
- using classroom assistants to support the work of individual children or groups of children.

### **3 Computing curriculum planning**

- 3.1 Computing is a subject in the National Curriculum. The schools use the National Curriculum for Computing as the basis for its curriculum planning. Key Skills are delivered through discrete teaching sessions in order that these can be applied when required in all other aspects of the curriculum.
- 3.2 The Computing subject leader is responsible for keeping and reviewing plans for Key Skills Computing sessions and for monitoring the rest of the curriculum to ensure that Computing is being applied where appropriate.
- 3.3 The topics studied in Computing are planned to build on prior learning. While we offer opportunities for children of all abilities to develop their skills and knowledge in each unit, we also plan progression into the scheme of work, so that the children are increasingly challenged as they move up through the school.
- 3.4 Parents and carers are required to give signed authorisation before their child can use the Internet, either in guided or in independent school work. Parents and carers are, however, assured that their child's use of the Internet at school is always supervised. A record of those children who do not have permission to use the Internet at school is held by each class teacher and by the school office.

### **4 The Foundation Stage**

- 4.1 We teach Computing in Nursery and Reception classes as an integral part of the topic work covered during the year. These aspects relate to the Computing aspects of the children's work to the objectives set out in the Foundation Stage curriculum and Development Matters document. The children have the opportunity to use the computers, digital cameras, iPads, interactive boards and floor robots. Then, during the year, they gain confidence and start using the computer to find out information and to communicate in a variety of ways.

### **5 The contribution of Computing to teaching in other curriculum areas**

The teaching of Computing contributes to teaching and learning in all curriculum areas. It also offers ways of impacting on learning which are not possible with conventional methods. Teachers use software to present information visually, dynamically and interactively, so that children understand concepts more quickly. For example, graphics work links in closely with work in art, and work using databases supports work in mathematics, while role-play simulations and the Internet prove very useful for research in humanities subjects. Computing enables children to present their information and conclusions in the most appropriate way. Much of the software we use

is generic and can therefore be used in several curriculum areas. The schools have subscribed to a range of online resources that support many areas of the curriculum, both within school and at home e.g. Espresso.

### 5.1 English

Computing is a major contributor to the teaching of English. Children's reading development is supported through talking stories and Phonics apps. As the children develop mouse and keyboard skills, they learn how to edit and revise text on a computer. They have the opportunity to develop their writing skills by communicating with people via e-mail and the use of digital storytelling.

They also learn how to improve the presentation of their work by using desktop publishing software. There is in addition a variety of software that targets specific reading, grammar and spelling skills.

### 5.2 Mathematics

Children use Computing in mathematics to collect data, make predictions, analyse results, and present information graphically. Screen robots allow pupils to give exact instructions for a particular route, or to use their knowledge of angles to draw a range of polygons.

### 5.3 Science

Software is used to animate and model scientific concepts, and to allow children to investigate processes that it would be impracticable to do directly in the classroom. Data loggers are used to assist in the collection of data and in producing tables and graphs.

### 5.4 Personal, social and health education (PSHE) and citizenship

Computing makes a contribution to the teaching of PSHE and citizenship in that children in computing classes learn to work together in a collaborative manner. They also develop a sense of global citizenship by using the Internet and e-mail. Learning to use the Internet efficiently and safely is a crucial component when teaching Computing. The scheme aims to develop a set of safe and discriminating behaviours for pupils to adopt when using the Internet and other technologies. Through discussion of safety and other issues related to electronic communication, the children develop their own view about the use and misuse of Computing, and they also gain an insight into the interdependence of computing users around the world.

## **6 Computing and inclusion**

6.1 At our schools, we teach Computing to all children, whatever their ability and individual needs. Computing forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our Computing teaching, we provide learning opportunities that enable all pupils to make good progress. We strive hard to meet the needs of those pupils with special educational needs, those with disabilities, those with

special gifts and talents, and those learning English as an additional language and we take all reasonable steps to achieve this.

Computing can make a significant contribution to the progress made by children with barriers to learning. For example: the use of a Computing assessment package to screen children for Speech and Language; the use of Google translate to support EAL learners in understanding learning intentions and responding to activities when multi-lingual assistants are not available; the use of Notepads for children with fine motor difficulties.

- 6.2 When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors - classroom organisation, teaching materials, teaching style, and differentiation - so that we can take some additional or different action to enable the child to learn more effectively (e.g. a lot of software can be differently configured for different ability ranges). This ensures that our teaching is matched to the child's needs.
- 6.3 Children with special educational needs will have an Individual Education Plan (IEP). The IEP may include, as appropriate, specific targets relating to the use of computing to support access to the rest of the curriculum. In some instances, the use of Computing has a considerable impact on the quality of work that children produce, by increasing their confidence and motivation and by enabling children to work more independently.
- 6.4 We enable pupils to have access to the full range of activities involved in learning Computing. We have a range of software that is designed to include all learners, e.g. individual Notepads for identified children.

## **7 Assessment for learning**

- 7.1 Teachers will assess children's work in Computing by making informal judgements during lessons and uses this assessment to plan for future learning. Written or verbal feedback is given to the child to help guide his/her progress. Older children are encouraged to make judgements about how they can improve their own work.
- 7.2 The subject leader keeps samples of the children's work in a portfolio. This demonstrates the expected level of achievement in Computing for each age group in the school.

## **8 Resources**

Our schools have a growing range of computing resources. Each teacher has a laptop and an iPad. Each class has a classroom computer and a visualiser. Laptop trollies are available for use, enabling whole class teaching to take place. There are also iPad trollies available that can be booked out by teachers to support learning in a variety of ways. There is also a range of other equipment that can be used, such as digital cameras, flip-cams and DSs.

- 8.1 The Trust employs three full time ICT technicians to support the strategic overview of Computing and act as a technician on a day-to-day basis as issues occur.
- 8.2 In order to keep our school computers virus-free, no software from home will be

installed on school computers. Pupils bringing in work on portable storage must first have it scanned, but it is easier if the work is e-mailed to the teacher concerned. Where teachers are transferring files between their home and school, they must have up-to-date virus protection software on their home computers.

## **9 Monitoring and review**

- 9.1 The coordination and planning of the Computing curriculum is the responsibility of the subject leader:
- Supporting colleagues in their teaching, by keeping informed about current developments in Computing and by providing a strategic lead and direction for this subject;
  - Giving the headteacher an annual summary report in which they evaluate the strengths and weaknesses in Computing and indicates areas for further improvement;
- 9.2 The quality of teaching and learning in Computing is monitored and evaluated by the headteacher as part of the school's agreed cycle of lesson observations.
- 9.3 This policy will be reviewed every two years or sooner if required.

Date approved by Local Governing Body: February 2019

Date to be reviewed:

Signed: \_\_\_\_\_