Royles Brook Primary School Computing Policy

The use of information and communication technology is an integral part of the national curriculum and is a key skill for everyday life. Computers, tablets, programmable robots, digital and video cameras are a few of the tools that can be used to acquire, organise, store, manipulate, interpret, communicate and present information. At Royles Brook Primary School we recognise that pupils are entitled to quality hardware and software and a structured and progressive approach to the learning of the skills needed to enable them to use it effectively. The purpose of this policy is to state how the school intends to make this provision.

Aims

The school's aims are to:

- Provide a relevant, challenging and enjoyable curriculum for computing for all pupils.
- Meet the requirements of the national curriculum programmes of study for computing.
- Use computing as a tool to enhance learning throughout the curriculum.
- To respond to new developments in technology.
- To equip pupils with the confidence and capability to use computing throughout their later life.
- To enhance learning in other areas of the curriculum using computing.
- To develop the understanding of how to use computing safely and responsibly.

Computing is concerned with how computers and computer systems work, and how they are designed and programmed. Pupils studying computing will gain an understanding of computational systems of all kinds, whether or not they include computers. Computational thinking provides insights into many areas of the curriculum, and influences work at the cutting edge of a wide range of disciplines.

The Acceptable Use of Computing Policy and the e-Safety Policies should also be read in conjunction with this policy.

The Nature of Computing

The new National Curriculum presents the subject as one lens through which pupils can understand the world. There is a focus on computational thinking and creativity, as well as opportunities for creative work in programming and digital media.

The introduction makes clear the three aspects of the computing curriculum:

Computer Science (CS), **Information Technology** (IT) and **digital literacy** (DL).

- 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, 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.

Entitlement

Curriculum Development & Organisation

The national curriculum 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.

Computing curriculum planning

Key Skills can be delivered through discrete teaching sessions and can also be applied in all other aspects of the curriculum when required. The school uses the 'Switched On' Computing scheme as the core basis in the delivery of computing and have this academic year, bought into the 'Purple Mash' programme with the aim to introduce coding to Key Stage 2 children.

The computing subject leader is responsible for reviewing plans for Key Skills, computing sessions and for monitoring the rest of the curriculum to ensure that computing is being applied where appropriate.

The class teacher is responsible for writing the short-term plans with the possible computing components of each lesson and for daily inclusion within mathematics and English where appropriate.

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.

Parents and carers are required to give signed authorisation before their child can use the Internet, either in guided or in independent school work.

The Early Years Foundation Stage

We teach computing in reception classes as an integral part of the topic work covered during the year. As the reception class is part of the Foundation Stage of the National Curriculum, we relate the computing aspects of the children's work to the objectives set out in the Early Learning Goals (ELGs) which underpin the curriculum planning for children aged three to five. The children have the opportunity to use the computers, a digital camera and a floor robot. Then, during the year, they gain confidence and start using the computer to find out information and to communicate in a variety of ways.

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.

English

Computing is a major contributor to the teaching of English. Children's reading development is supported through talking stories. 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 will be able to join in discussions with other children throughout the world through the medium of video conferencing as we develop our global school twinning initiative. They also learn how to improve the presentation of their work by using desktop publishing software. There is in addition a variety of software which targets specific reading, phonics knowledge, grammar and spelling skills.

Mathematics

Children use computing in mathematics to collect data, make predictions, analyse results, and present information graphically. There is a range of software available for children to develop their mental skills, answer questions and practise learned strategies.

Science

Software is used to animate and model scientific concepts, and to allow children to investigate processes which 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. Digital microscopes are used to enable the whole class to examine very small materials and specimens.

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 therefore a key component of computing teaching. 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.

Computing and inclusion

At our school, 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. For further details, see separate policies:

Special Educational Needs; Disability Discrimination; Gifted and Talented Children; English as

an Additional Language (EAL).

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, 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). Assessing progress against the National Curriculum levels of attainment allows us to evaluate each child's progress against expected levels. This ensures that our teaching is matched to the child's needs.

Intervention through School Action and School Action Plus will lead to the creation of an Individual Education Plan (IEP) for children with special educational needs. The IEP may include, as appropriate, specific targets relating to computing. 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.

We enable pupils to have access to the full range of activities involved in learning computing.

We have a range of software which is designed to include all learners. Our hardware can accept a range of input devices catering to pupils with specific difficulties.

Assessment for learning

Teachers will assess children's work in computing by making informal judgments during lessons. On completion of a piece of work, the teacher assesses the work, 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 judgments about how they can improve their own work.

The subject leader monitors samples of the children's work. This demonstrates the expected level of achievement in computing for each age group in the school.

All teachers use a list of descriptors showing expected skill and knowledge at each level to help assess and plan for further development throughout the school.

Resources

Our school has a growing range of computing resources. Each teacher has a class laptop. Each class has three laptops, an interactive whiteboard (some having a ProWise interactive board) and access to a bank of 16 laptops and 16 IPads at least once a week.

We use the Ed-IT Solutions team to keep our equipment in good working order and liaise with them on a regular basis. Staff can report faults on a 'ticketing' system for the located technician to assist when they are based in the school.

In order to keep our school computers virus-free, no software from home will be installed on school computers. Where teachers are transferring files between their home and school, they must have up-to-date virus protection software on their home computers.

Monitoring and review

The coordination and planning of the computing curriculum are the responsibility of the subject leader, who also:

- supports colleagues in their teaching, by keeping informed about current developments in computing and by providing a strategic lead and direction for this subject

- gives the Head Teacher an annual summary report in which she evaluates the strengths and weaknesses in computing and indicates areas for further improvement

- uses specially allocated regular management time to review evidence of the children's work, and to observe computing lessons across the school.

The quality of teaching and learning in computing is monitored and evaluated by the Head Teacher as part of the school's agreed cycle of lesson observations.

Written by: Mr C Morris – April 2018

Date to be reviewed: Spring 2020