<u>Esh Winning Primary School</u>

<u>Computing</u>

<u>Introduction</u>

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 Esh Winning 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.

<u>Aims and Objectives</u>

•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 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.

<u>Cross-curricular Skills and Links</u>

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 contributes 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.

National Curriculum Coverage

Early Years

It is important in the Foundation Stage to give children a broad, play-based experience of Computing in a range of contexts, including outdoor play. Computing is not just about computers. Early years learning environments should feature Computing scenarios based on experience in the real world; such as role play. Children gain confidence, control and language skills through opportunities to explore using non-computer-based resources such as metal detectors, controllable traffic lights and walkie-talkie sets. Recording devices can support children to develop their communication skills.

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 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.

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.
 • Describe how internet search engines find and store data; use search engines effectively; be discerning in evaluating digital content; respect individuals and intellectual property; use technology responsibly, securely and safely.

• 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.

Health and Safety - Safeguarding Children: E-safety

At Esh Winning Primary School 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.

Assessment and Progress

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.

Coordinators Role

The Computing Coordinator's role is as follows:

• Presenting exemplary practice in the teaching of Computing.
• Advising colleagues on planning, delivering and assessing Computing.
• Monitoring the effective use of technology and giving advice where appropriate
• ensuring progression in Computing
• identifying what support / CPD is needed by individual staff / groups of staff / the whole school
• reviewing and revising the Computing policy and other associated documents
• creation of a school portfolio of evidence (if applicable)