Aims and Objectives

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.

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, to create programs, systems and a range of content. This is all underpinned by a strong e-safety focus in lessons, enabling children use technology safely and appropriately and knowing when to seek help and support. 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.

Epsom Primary School's vision

We aim to:

- Give children the confidence in skills of learning to prepare them for the next phase of education in the 21st century, particularly in their technological ability.
- Give children the opportunity to show initiative in an ever-changing world.

- Give children the knowledge and skills and understanding of the world in which they live and the ability to make connections.
- Give children the digital communication skills that enable them to successfully articulate, both personally and academically.

<u>Subject Leader aims:</u>

- To have an oversight of curriculum coverage in our planning scheme 'Purple Mash' and ensure it matches National Curriculum objectives.
- To ensure colleagues are aware of subject requirements.
- Ensure that Computing resources, particularly the Chromebooks, are organised and in place to deliver a rich and challenging curriculum.
- To support colleagues with technical issues or refer to school IT support agency.

Teaching and Learning

- We are using the Knowledge, Skills and Vocabulary document to plan and assess the children, which is based on the Purple Mash scheme of work.
- Class teachers are responsible for implementing the K/S/V document in their classes
- Subject leaders are responsible for ensuring the document shows progression and meets the needs of the children in liaison with Curriculum Lead.
- K/S/V document is reviewed throughout the year with feedback from class teachers
- Trips and Rich Experiences are utilised where possible to increase Cultural Capital for the children.

Teaching strategies
a) The 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 in 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. This is particular useful with children who have English as an additional language.

In the Foundation stage year, children will:
- 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/Beebot
- Use ICT hardware to interact with age-appropriate computer software.
- Recognise that a range of technology is used in places such as homes and schools.
- Select and use technology for particular purposes

b) By the end of Key Stage 1:

Children explore how familiar things work and talk about, draw and model their ideas. They learn how to design and make safely, using ICT as part of this. Children may work in pairs and small groups for some activities.

Throughout KS1, 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.

C) By the end of Key Stage 2:

Children explore how programming is a large part of everyday life. They are exposed to many different digital devices and how to use them safely and developing their knowledge and understanding of how digital devices have their place in society.
Pupils are 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.

Through our Computing Scheme, 'Purple Mash':

- 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.

Assessment

Assessment is the responsibility of the individual class teachers and will be based on evidence gathered through discussion and observation of the pupil during the lesson and by the child's recording of activities where appropriate e.g. planning, designing and photographs of practical activities.

Inclusion

We teach Computing to all pupils, whatever their ability. We provide learning opportunities that enable all pupils to make progress. We do this by setting suitable learning challenges and responding to each child's different needs.

Management

The Computing Curriculum Leader is responsible for the implementation of this policy; the management and repairs of Computing resources through School Based Curriculum Support, monitoring Computing standards of achievement and

progression, and working with SLT to arrange appropriate Inset for all members of staff where necessary.

Epsom Primary and Nursery School is committed to continuing the reliability of the network and we receive support from GLF to support the school with technical matters.

The Class Teachers are responsible for the delivery of this policy and the care and security of the hardware and software.

The school is committed to the ongoing resourcing of Computing equipment and software, in relation to the School Development Plan.

The school is responsible for ensuring that copyright regulations are not infringed

Health and Safety

a) Resources

At Epsom Primary and Nursery School, children and staff have access to a range of ICT equipment, including chromebooks which may be controlled by QWERTY keyboard and mouse control. The computers are linked to the school network and server and have facilities to connect to the Internet through Broadband connection.

b) Safety

When a new piece of digital equipment is released, the staff are given training on this first; this is then disseminated through to the children.

c) Guidance

All adults leading Computing lessons/ activities should ensure that they have read and understood the Computing Policy and the E Safety Policy before commencing teaching.

Adults should ensure that:

Computing equipment is not left out and unsupervised, floors and work surfaces are kept clean and tidy when transporting digital equipment around school and all tools used must be of good quality, in good condition and stored safely. Children should be given suitable instruction on the operation of all equipment before being allowed to work with it.

Children should be taught to recognise and consider hazards and risks and to take action to control these risks, having followed simple instructions.

Monitoring and review

The monitoring of the standards of children's work and of the quality of teaching in Computing is the responsibility of the Computing subject coordinator with the Curriculum Lead. Their work also involves supporting colleagues in the teaching of this subject, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school. Lesson observations/learning walks are also undertaken, when needed, and the subject coordinator regularly reviews evidence of the children's work. The subject leader is responsible for giving the curriculum lead an annual summary report in which the strengths and weaknesses in the subject are evaluated and areas for further improvement are indicated. Where required, the subject lead may be asked to present their work to the Senior Leadership Team and/or Governors.