COMPUTING POLICY

Introduction

This policy document is a statement of the aims, principles and strategies for the teaching and learning of Computing at Maney Hill Primary School.

Rationale

Through teaching Computing, we need to equip children to participate in a rapidly-changing world where work and leisure activities are increasingly transformed by technology. We need to enable them to find, explore, analyse, exchange and present information using a range of technological tools. In a world increasingly dominated by Computing, we are responsible for teaching children the key concepts of Computer Science in order for them to understand and deploy algorithms and logic to use, and eventually write, simple programs. Computing skills are a major factor in enabling children to be confident, creative and independent learners and fundamentally, we must foster an understanding of how to do this responsibly and safely.

Aims

In our teaching of Computing, we aim to:

- provide a relevant, challenging and enjoyable curriculum for all pupils
- provide a safe environment for Computing and teach children to use technology safely and responsibly
- develop children’s capability in finding, selecting and using information
- teach pupils to use Computing for effective and appropriate communication
- monitor and control events both real and simulated
- allow pupils to apply their Computing skills and knowledge to their learning in other areas
- develop pupils’ language and communication skills
- allow children to explore their attitudes towards Computing and its value to them and society in general. For example, to learn about issues of security, confidentiality and accuracy
- develop understanding and application of the fundamental principles of computer science, including logic, algorithms, data representation, and communication
- teach children to analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems

Curriculum Framework

The fundamental skills, knowledge and concepts of the subject are set out in the National Curriculum 2014.
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 ‘paint’ on the whiteboard or program a toy using resources such as Purple Mash (Simple City). Recording devices can support children to develop their communication skills. Children in the Early Years also have access to iPads and, as they become more proficient in their use of ICT, can begin to use the laptops to log on and explore the programs they will encounter further up the school.

Key Stage One

By the end of Key Stage One, pupils should be taught to:

- understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following a sequence of instructions
- write and test simple programs
- use logical reasoning to predict and computing the behaviour of simple programs
- organise, store, manipulate and retrieve data in a range of digital formats
- communicate safely and respectfully online, keeping personal information private, and recognise common uses of information technology beyond school

Key Stage Two

By the end of Key Stage Two, 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
Planning

Curriculum planning in Computing is in three phases (long-term, medium-term and short-term). Long-term and Medium-term planning shows how teaching units are distributed across the year groups, and how these fit together to ensure progression within the curriculum plan. The medium-term plans identify the key learning objectives for each unit of work.

The class teacher is responsible for writing the short-term plans with the Computing component of each lesson. Whilst Computing might not be taught in specific, discrete lessons, these plans must list the specific Computing learning objectives that are covered, key technical vocabulary and provide opportunities for the children to develop, use and apply their Computing skills across the curriculum.

Assessment

Assessment is a key part of the teaching and learning in our school. We want assessment to be purposeful, and to inform teachers and support staff of what children have learnt. We will aim to share this information with children in class by discussing learning objectives at the beginning and end of the lesson. Details will also be shared with parents in a number of ways, including through parent/teacher consultations and the annual pupil report to parents.

Assessment can take the following forms:

- regular review and moderation of children’s work
- evaluation of teacher assessments and other standardised assessments
- structured observation
- pupil assessment (self/peer)

Resources

Computing contributes to teaching and learning in all curriculum areas. To support cross-curricular work in Computing, there is a bank of sixty portable laptops and fifteen iPads which can be used by all children across the School. All laptops and iPads connect to School’s wireless network for access to the internet and are stored centrally for easy access. New SMARTBoard™ Interactive Whiteboards (IWBs) are fitted in each classroom are used daily for whole class teaching in all subjects.

As well as these larger pieces of hardware, all classes in the school also have access to digital cameras, colour printers and a bank of five Data Harvest™ data loggers for use in Science and Maths. Cameras are provided in classrooms, while other resources are stored centrally for easy access.

Computers across the school are installed with a variety of software to aid Computing teaching and its application across the curriculum. This includes:

- Purple Mash software
- word processing software, ranging from 2Simple to Microsoft Word and Microsoft Publisher
- spreadsheet software, including Microsoft Excel
• presentation software, including Microsoft PowerPoint
• painting and drawing software
• photo editing software
• music editing software such as Audacity™
• control programs such as LogoMotion™
• communication software such as Skype™

The iPads also contain a variety of apps, organised into folders for different curriculum areas.

Hardware and software issues

Any problems involving hardware and software should be emailed directly to the technician. The technician is available every other Tuesday and remotely by telephone or email.

Health and Safety

Pupils need to be made aware of:

• potential hazards and risks to themselves and others when using Computing, for example, Internet safety, cyber bullying, trailing wires and health issues such as, repetitive strain injury and eyesight problems
• the steps they will need to take to control risks e.g. safety rules for the Internet, correct posture etc.
• the action they should take if risks occur

(see E-safety Policy)

Special Educational Needs and Disabilities (SEND)

All individuals will be given the opportunity to develop their full potential in Computing irrespective of race, gender, religion or ability.

The School has a responsibility under the government’s Inclusion Strategy to provide ‘effective learning opportunities for all pupils’, setting out three principles that are essential to developing a more inclusive curriculum:

• setting suitable challenges
• responding to pupil’s diverse learning needs
• overcoming potential barriers to learning and assessment for individuals and groups of pupils

(see SEND Policy)

Equal Opportunities

All pupils are of equal value and will have opportunities to learn and be successful. It is important that all pupils should feel that they belong, and we aim to promote a feeling that they are accepted, welcomed and valued so that they can contribute and participate fully in all areas of their school life. In our Computing teaching we will be
proactive in removing barriers to learning and success.

(see Equal Opportunities Policy)

Role of the Subject Leader

The class teacher is responsible for the organisation of Computing in his/her class. However, the Computing Subject Leader is responsible for:

- the curriculum audit which covers:
  - the matching of planning to the curriculum
  - the annual report to the Governing Body
  - the annual Action Plan
  - the scrutiny of Computing work from each class
- learning walks and drop in observations
- attending Computing courses regarding current issues, and reporting these back to staff
- keeping abreast of new initiatives
- organising INSET for teaching and non-teaching staff
- ordering Computing materials/resources linked to the annual Computing curriculum budget