

Netherleigh and Rossefield School

Computing Policy

September 2016

1 Aims and Objectives

1.1 We aim to equip pupils to understand and change the world through computational thinking. It develops and requires logical thinking and precision. It combines creativity with rigour: pupils apply underlying principles to understand real-world systems, and to create purposeful and usable artefacts. More broadly, it provides a lens through which to understand both natural and artificial systems, and has substantial links with the teaching of mathematics, science, and design and technology. We do not want to simply teach Microsoft software skills. Building on this core, Computing equips pupils to apply information technology to create products and solutions. A Computing education also ensures that pupils become digitally literate – able to use, and express themselves through, information and communication technology – at a level suitable for KS3, KS4, FE and the future workplace and as active participants in a digital world.

1.2 The National Curriculum for Computing aims to ensure that all pupils:

- can understand and apply the fundamental principles of computer science, including logic, algorithms, data representation, and communication
- 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.

2 Teaching and Learning Styles

2.1 Our school's commitment to high quality Computing teaching is underlined by our employment of a specialist Computing teacher, who teaches a weekly Computing lesson to Years 1-6.

2.2 As the aims of Computing are to equip children with the skills necessary to use technology to become independent learners, the teaching style that we adopt is as active and practical as possible. At times, we do give the children direct instruction on how to use hardware or software in skills lessons, but we often use ICT / Computing capabilities to support teaching and learning across the curriculum. So, for example, children might investigate a History topic by using the Internet. Children who are learning Science might use the computer to model a problem or analyse data using a

spreadsheet. We encourage the children to explore ways in which the use of ICT / Computing can improve their results, for example, editing a piece of writing.

2.3 We recognise that all classes have children with widely differing Computing abilities. This is especially true when some children have greater access to ICT at home than others. 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 by:

- Setting common tasks which are open-ended, and can have a variety of responses;
- Setting tasks of increasing difficulty (we do not expect all children to complete all tasks);
- Grouping children by ability in the room, and setting different tasks for each ability group;
- Providing resources of different complexity adapted to the ability of the child;

2.4 We assess the children's progress informally during lessons.

3 ICT/Computing Curriculum Planning

3.1 The schemes have been produced following the NAACE frameworks for the new computing curriculum. These have been written while taking into account the old national curriculum and evidence within the planning can be seen for cross referencing between the old and new POS. A large part of the old POS can still be found in the new computing curriculum but has been re-worked and updated.

3.2 Computing is an important subject in the Primary National Curriculum (2014.) Our curriculum planning is carried out in three phases: long term, medium term, and short term. The long term plan maps out the scientific topics studied in each term in each key stage. The medium term plan gives the details of each topic for each half term. The short term plans cover the daily lessons plans for each lesson. These plans detail the specific learning objectives and expected outcomes of each lesson. The topics studied in Computing are planned to build upon prior learning. While we offer opportunities for children of all abilities to develop their skills and knowledge in each unit, we also build planned progression into the scheme of work so that the children are increasingly challenged as they move up through school.

4 The Early Years Foundation Stage

4.1 We teach ICT 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, we relate the ICT aspects of the children's work to the objectives set out in the EYFS which underpin the curriculum planning for children aged two to five. The children have the opportunity to use the computers and a digital camera. During the year, they gain confidence and start using the computer to find information and use it to communicate in a variety of ways.

5 The Contribution of Computing to teaching in other curriculum areas

5.1 Computing contributes to teaching and learning in all curriculum areas. For example, graphics work links closely with work in art, and work using database and spreadsheet supports work in mathematics, while the Internet proves very useful for research in humanities subjects. Computing enables children to present their information and conclusions in an appropriate way. Learning which ICT tools to use and how to present information effectively to the correct audience is one of the main teaching targets of this subject.

5.2 English: Computing is a major contributor to the teaching of English. Through the development of keyboard skills and the use of computers, children learn how to edit and revise text. They have the opportunity to develop their writing skills by safely communicating with people via the Internet. They learn how to improve the presentation of their work by using the correct software for the task in hand.

5.3 Mathematics: Many Computing activities build upon the mathematical skills of the children. Children use Computing in maths to collect data, make predictions, analyse results, and present information graphically. They also acquire measuring techniques, involving positive and negative numbers, and including decimal places.

5.4 PSHEE & C: Computing makes a contribution to this subject as children to work together in a collaborative manner. They develop a sense of global citizenship by using the Internet and e-mail. Through the discussion of moral issues related to electronic communication, children develop a sense of the use and misuse of Computing, and they also gain a knowledge and understanding of the interdependence of people around the world.

6 Teaching Computing to Children with Special Educational Needs

6.1 At our school, we teach Computing to all children, whatever their ability. Computing forms a part of our school Curriculum policy to provide a broad and balanced education for all children. We provide learning opportunities that are matched to the needs of children with learning difficulties. In some instances, the use of Computing has a considerable impact on the quality of work that children produce: it increases their confidence and motivation. The use of Computing can help children in achieving their targets and progression in their learning. Pupils with special needs are catered for by:

- Provisions of extra support from support assistants or teachers.
- Provision of differentiated work
- Extension work is available for the more able children

7 Assessment and Recording

7.1 The Computing teacher assesses children's work in lessons by making informal judgements as we observe them during lessons. Pupils' progress is closely monitored by the teacher, and assessed at the end of each unit / task. This class record is kept in the

teacher's assessment folder. Where appropriate, children will be permitted to print work, but can also save their work into their own folders.

7.2 The Computing subject leader keeps samples of the children's work in a portfolio, which demonstrates the expected level of Computing attainment for each age group in the school.

8 Resources

8.1 At present, the Foundation Stage classes each have a computer. The ICT / Computing suite has ten networked computers, which are linked to a printer, and have McAfee anti-virus protection and Sonic Firewall to limit access to prohibited sites. Additional Hardware: Colour printers, laptops, scanner, digital cameras.

8.2 Software: word processing packages, painting/graphic packages, clip art, multimedia programs, simulations, sensing and control packages.

8.3 Development plans: to replace some of the desktop computers with the laptop computers. New software such as Win Logo, Python and Visual Basic will be loaded to allow the teaching of the new computing components.

9 Internet Safety and Child Protection

9.1 Computer networks, including those which may be accessed via the Internet, are an important aspect of information technology education. However, they present possible risks to the spiritual, moral and social development of pupils, particularly in terms of the nature of some of the material which may be obtained via the Internet. The Curriculum Network has a firewall and is also protected by McAfee anti-virus software and Sonic Firewall: Internet access is filtered to prevent access to inappropriate or undesirable websites. Access details and passwords for the filter are kept in the school office. Should a child access an inappropriate website, the class teacher should quietly note the Internet address and pass the details to the ICT / Computing Co-ordinator who will then ensure the site is blocked.

9.2 The computers are positioned so that the teacher can monitor internet content at all times, and students are not allowed to use the room by themselves. Children should be encouraged to use nicknames when online, and not their real names. They should also be encouraged not to reveal any personal information (such as address or phone no.) that would enable them to be tracked down.

9.3 For further information on this area, please see the School's E-Safety Policy and Safeguarding Policy.

10 Health and Safety

10.1 Other than those associated with the Internet (see above), there are no specific Health and Safety Issues in Computing, but safe working practices are followed at all times and in all subjects. It is imperative that all electrical equipment is kept in good

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working order. To ensure the health and safety of pupils and staff the following guidelines must be adhered to:

- Pupils should not be allowed to switch on the power at the mains.
- Equipment should be situated away from water.
- Pupils should always be supervised when using electrical equipment.
- All plugs, leads and equipment are checked annually and tested for electrical safety by external staff.
- Pupils should not be allowed to carry equipment.
- The length of lessons means that chairs and wrist rest are suitable in our ICT room

11 Monitoring and Review

11.1 The monitoring of the standards of the children's work and of the quality of the teaching in Computing is the responsibility of the Computing subject leader and the Leadership Team. The Computing teacher is also responsible for supporting colleagues in the use of ICT / Computing, for keeping informed of developments in the subject, and for providing a strategic lead and direction for the subject in the school. The Computing subject leader regularly discusses the ICT / Computing situation with the Headteacher in which the strengths/areas for development are discussed. During the year, the ICT / Computing subject leader has specially allocated time for carrying out the task of reviewing samples of children's work, and performing maintenance on the network.