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Computing and ICT Curriculum
(formerly Information and Communication Technology (ICT)) Policy

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January 2017	Version 1
September 2019	Version 1.1 **Changes:** Change of terms in the Resources section Changed the '**Teaching English to children with special needs'** section to be up to date with current resources. Changed most of the '**Computing and ICT curriculum planning'** section

The use of information and communication technology is an integral part of the English 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. Children throughout the school will have the opportunity to develop their skills in computing well planned structures and progressive learning opportunities. These opportunities will equip children to participate in a rapidly changing world, where work and leisure activities are increasingly transformed by technology. We also focus on developing the skills necessary for children to be able to use information in a discriminating, safe and effective way.

Aims of Computing and ICT

The aims of the computing and ICT curriculum are to enable children:

- To provide a relevant, challenging and enjoyable curriculum for computing and ICT for all students.
- To meet the requirements of the National Curriculum programmes of study for Computing.
- To develop ICT capability in finding, selecting and using information.
- To use ICT for effective presentation skills.
- To use ICT for effective and appropriate communication.
- To apply their ICT skills and knowledge to their learning in other areas.
- To use their ICT skills to develop their language and communication skills.
- To explore their attitudes towards ICT and its value to them and society in general. For example, to learn about issues of security, confidentiality and accuracy.

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- To encourage children to make safe and sensible choices in the online content they access and how they interpret it.

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.

Objectives

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.

Teaching and learning style

As one of the aims of ICT is 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. While at times we do give children direct instruction on how to use hardware or software, the main emphasis of our teaching in Computing is for individuals or groups of children to use ICT equipment to help them in whatever they are trying to study. We encourage the children to explore ways in which the use of ICT can improve their results, for example, how a piece of writing can be edited or how the presentation of a piece of work can be improved by moving text about, etc. The school has installed high definition screens in all classes from Year 1 upwards to encourage the use of ICT throughout the curriculum, embedding its use in all aspects of daily teaching and learning.

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We recognise that all classes have children with widely differing ICT abilities. This is especially true when some children have access to ICT equipment at home, while others do not. 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 in a variety of ways, by:

- Setting common tasks which are open-ended and can have a variety of responses.
- Setting tasks of increasing difficulty (not all children complete all tasks).
- Grouping children by ICT ability and setting different tasks for each ability group.
- Providing resources of differing complexity that are matched to the ability of the child (including the use of audio support and translators).
- Using classroom assistants to support the work of individual children or groups of children, where necessary.

Computing and ICT curriculum planning

Nadeen School uses teacher developed schemes of work based on the English national curriculum for Computing in order to meet the needs of all the pupils. We teach Computing as part of our CCS (Creative Curriculum Sessions), therefore, Computing is taught as part of the 3-week block system (Check our Medium-Term Planning Policy). Planning for Computing follows the same structure as all other CCS subjects. As such each year group plans for the 3-week block with the help of the Computing Lead.

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 the school.

Assessment

The teacher assesses children's work in computing continually. The assessments that teachers make as part of every lesson allows them to adjust their teaching and planning for subsequent lessons. Teachers match these short-term assessments closely to the teaching objectives. Children are tracked on the school's tracking program.

The contribution of Computing and ICT to teaching in other curriculum areas

Computing and ICT contributes to teaching and learning in all curriculum areas. Computing and ICT is, where possible, topic related. For example, graphics work links closely with work in art, the use of spreadsheets and databases support work in mathematics, while the internet and video footage prove very useful for research in science and humanities subjects. ICT enhances literacy through visual aids. ICT enables children to present information and conclusions in the most appropriate way.

English

ICT 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 texts. They have the opportunity to develop their writing skills by communicating with people over the Internet, through email, in accordance to our Internet safety policy. They learn how to improve the presentation of their work by using desktop publishing software.

Mathematics

Many Computing and ICT activities build upon the mathematical skills of the children. Children use ICT in mathematics to collect data, make predictions, analyse results and present information graphically. The use of

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interactive high definition board software enables the children to work on individual targets, group and whole class activities.

Personal, health, social and economic education with citizenship (PHSE)

Computing and ICT contributes to the teaching of PHSE as children learn to work together in a collaborative manner. Children learn responsible use of ICT based resources. They develop a sense of global citizenship by using the Internet and email (in accordance with the school's E-safety Policy). Through the discussion of moral issues related to electronic communication, children develop a view about the use and misuse of ICT, and they also gain a knowledge and understanding of the interdependence of people around the world. E-safety is taught as a specific unit of work by all year groups as their first topic in September of each year and reinforced regularly through the year. This programme allows for progression throughout the Key Stage and emphasises the importance of making safe and sensible decisions about ICT use.

Teaching English to children with special needs

We teach Computing and ICT to all children, whatever their ability. This subject forms part of our school curriculum policy to provide a broad and balanced education for our children. We provide learning opportunities that are matched to the specific needs of children with learning difficulties. In some instances, the use of ICT has a considerable impact on the quality of work that children produce. Teachers identify children who are gifted and talented in the area of Computing and ICT. It is the teacher's responsibility to ensure that these children are suitably challenged in their use of ICT both in specific ICT lessons and in using ICT in other curriculum areas. Opportunities are identified for these children to actively participate in more challenging aspects of the subject. Chromebooks are used in years 4, 5 and 6 to enhance learning and allow children to work on individual learning targets. iPads are also available for KS1 and Learning Support teachers to book out in order to use them in their lessons.

Resources

All teachers are provided with a Windows based laptop and/or Chromebook. In addition, classroom teachers are also provided with a school phone. Classrooms are equipped with high definition screens. 25 student laptops are available for years 2 and 3 to use as the teachers see fit. In addition, a class set of iPads is also available. All computers around the school have Internet access. Year 4, 5 and 6 teachers have Chromebooks, while each of the years 4, 5 and 6 classrooms are equipped with a Chromecast device.

Internet Safety

The school has a policy on E-Safety. Rules of use are on display anywhere from where children can access the internet. The children understand these rules and they know that they are expected to follow them. Should a child break these rules they will be denied internet access for a period of time after which the situation will be reviewed.

Equality statement

The school is committed to providing the full range of opportunities for all pupils, regardless of gender, disability, and ethnicity, social, cultural or religious background. All pupils have access to the curriculum, and the right to a learning environment, which dispels ignorance, prejudice or stereotyping.

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Roles & responsibilities Senior Management

The overall responsibility for the use of computing technologies rests with the senior management of the school. The Head, in consultation with staff:

- Determines the ways computing should support, enrich and extend the curriculum.
- Decides the provision and allocation of resources.
- Decides ways in which developments can be assessed, and records maintained.
- Ensures that computing technologies are used in a way to achieve the aims and objectives of the school.
- Ensures that there is a Computing Policy and identifies a Computing Leader.

Computing Leader

There is a designated Computing Leader to oversee the planning and delivery of Computing within the school. The Computing Leader will be responsible for:

- Raising standards in Computing as a national curriculum subject.
- Facilitating the use of Computing across the curriculum in collaboration with all subject coordinators.
- Providing or organising training to keep staff skills and knowledge up to date.
- Advising colleagues about effective teaching strategies, managing equipment and purchasing resources.
- Monitoring the delivery of the Computing curriculum and reporting to the Headteacher on the current status of the subject.

The Classroom Teacher

Even though whole school coordination and support is essential to the development of computing capability, it remains the responsibility of each teacher to plan and teach appropriate Computing activities and assist the coordinator in the monitoring and recording of pupil progress in Computing.