Computing Policy

Godinton Primary School

March 2016

Approved by the Governing Body Strategy Group 23/03/16

This Policy is due for renewal in Term 4 2017-2018

Computing Policy

1　Aims and objectives

1.1　The use of computers and computer systems is an integral part of the National Curriculum and knowing how they work is a key life skill. In an increasingly digital world there now exists a wealth of software, tools and technologies that can be used to communicate, collaborate, express ideas and create digital content. At Godinton Primary School we recognise that pupils are entitled to a broad and balanced computing education with a structured, progressive, approach to the learning how computer systems work, the use of IT and the skills necessary to become digitally literate and participate fully in the modern world. The purpose of this policy is to state how the school intends to make this provision.

1.2　The school's aims are to:

- Provide a broad, balanced, challenging and enjoyable curriculum for all pupils.

- Develop pupil's computational thinking skills that will benefit them throughout their lives.

- Meet the requirements of the national curriculum programmes of study for computing at Key Stage 1 and 2

- To respond to new developments in technology

- To equip pupils with the confidence and skills to use digital tools and technologies throughout their lives.

- To enhance and enrich learning in other areas of the curriculum using IT and computing.

- To develop the understanding of how to use computers and digital tools safely an responsibly

1.3　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	Rationale

The school believes that IT, computer science and digital literacy:

- o	are essential life skills necessary to fully participate in the modern digital world.

- o	allows children to become creators of digital content rather than simply consumers of it.

- o	provides access to a rich and varied source of information and content.

- o	communicates and presents information in new ways, which helps pupils understand, access and use it more readily.

- o	can motivate and enthuse pupils.

- o	offers opportunities for communication and collaboration through group working both inside and outside of school.

- o	has the flexibility to meet the individual needs and abilities of each pupil.

## 3	Objectives

### 3.1	Foundation Stage

It is important in the foundation stage to give children a broad, play-based experience of IT and computing in a range of contexts, including off-computer activities and outdoor play.

Computing is not just about computers. Early years learning environments should feature IT scenarios based on experience in the real world, such as in role play. Children gain confidence, control and language skills through opportunities such as 'programming' each other using directional language to find toys/objects, creating artwork using digital drawing tools and controlling programmable toys.

Outdoor exploration is an important aspect and using digital recording devices such as video recorders, cameras and microphones can support children in developing communication skills. This is particularly beneficial for children who have English as an additional language.

### 3.2	By the end of key stage 1 pupils should be taught to:

- o	understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following a sequence of instructions

- o	write and test simple programs

- o	use logical reasoning to predict and computing the behaviour of simple programs

- o	organise, store, manipulate and retrieve data in a range of digital formats

- o	communicate safely and respectfully online, keeping personal information private, and recognise common uses of information technology beyond school.

3.3   By the end of key stage 2 pupils should be taught to:

- o   design and write programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts

- o   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

- o   use logical reasoning to explain how a simple algorithm works and to detect and correct errors in algorithms and programs

- o   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

- o   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

- o   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.

4   Teaching and learning style

4.1   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. 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 technology to help them in whatever they are trying to study. So, for example, children might research a history topic by using the Internet. Children who are learning science might use a datalogger to monitor environmental conditions. We encourage the children to explore ways in which the use of Computing 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.

4.2   We recognise that all classes have children with widely differing computing abilities. This is especially true when some children have access to computing 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:

- o   setting common tasks which are open-ended and can have a variety of responses;

- o   setting tasks of increasing difficulty (not all children complete all tasks);

- o   grouping children by ability in the room and setting different tasks for each ability group;

- o   providing resources of different complexity that are matched to the ability of the child;

- o   using teaching assistants to support the work of individual children or groups of children.

5   Computing curriculum planning

5.1   The school uses the national scheme of work for Computing as the basis for its curriculum planning. We have also developed our own scheme of work based around five themes:

Programming

E-safety

Data

Multimedia

Networks and the internet

Children receive a broad and balanced Computing experience by addressing all five themes in each year group. Computing may be taught as a discrete subject but wherever possible is embedded within cross curricular teaching / learning. For example, pupils' multimedia presentations could focus on a class topic.

5.2   We carry out the curriculum planning in Computing in three phases (long-term, medium-term and short-term). The long-term plan maps the Computing topics that the children study in each term. Our long-term Computing plan shows how teaching units are distributed across the year groups, and how these fit together to ensure progression within the curriculum plan.

5.3   Our medium-term plans give details of each unit of work for each term. They identify the key learning objectives for each unit of work and stipulate the curriculum time that we devote to it.

5.4   The class teacher is responsible for writing the short-term plans with the Computing component of each lesson. These weekly plans list the specific learning objectives of each lesson. The class teacher keeps these individual plans and s/he and the IT manager often discuss them on an informal basis.

5.5   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.

6   Foundation Stage

6.1   Computing is taught in the Reception classes under the heading of Understanding the World and Physical Development. It is taught through topics that the children work on throughout the year e.g. the seasons, animals from different lands and ourselves. The Reception classes are part of the Foundation stage of the National Curriculum and we relate the scientific aspects of the children's work to the objectives set out in the Early Learning Goals (ELG's) and to the Development Matters documentation which underpin the learning for all children from birth to 60 months.

7   The contribution of Computing to teaching in other curriculum areas

7.1   Computing contributes to teaching and learning in all curriculum areas. For example, graphics work links in closely with work in art, and work using databases supports work in mathematics and science while the Internet proves very useful for research in humanities

subjects. Computing enables children to present their information and conclusions in the most appropriate way.

7.2   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 communicating with people over the Internet, and they are able to join in discussions with other children throughout the world through the medium of video conferencing. They learn how to improve the presentation of their work by using desk-top publishing software.

7.3   Mathematics

Many Computing activities build upon the mathematical skills of the children. Children use Computing in mathematics 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.

7.4   Personal, social and health education (PSHE) and citizenship

Computing makes a contribution to the teaching of PSHE and citizenship as children learn 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 view about the use and misuse of Computing, and they also gain a knowledge and understanding of the interdependence of people around the world.

8   Teaching Computing to children with special educational needs

8.1   At Godinton Primary School we teach Computing to all children, whatever their ability. Computing forms 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. When planning work in Computing, we take into account the children's individual targets.

8.2   Consideration is given in planning to meeting the needs of children identified as Gifted and Talented for Computing. These children may also access additional activities to enhance and extend their skills, for example, use their publishing skills to produce the school newspaper.

9   Assessment and recording

9.1   Teachers assess children's work in Computing by making informal judgements as they observe them during lessons. Children self-assess and peer-assess as they develop their Computing work and exemplars of each term's work is displayed in the Computing suite. Teacher assessments are reported to parents three times a year.

10   Resources

10.1   The school acknowledges the need to continually maintain, update and develop its resources and to make progress towards consistent, compatible computer systems by investing in resources that will effectively deliver the objectives of the National Curriculum and support the use of IT, computer science and digital literacy across the school.

10.2   We have a wide range of computing resources to support teaching and learning including a networked computer and multimedia interactive whiteboard in each classroom, a fully equipped air-conditioned Computing suite with 31 networked computers, a set of 31 mobile laptops with wireless internet access, and a set of 16 ipads. High speed broadband is available in all areas throughout the school.

10.3   To make effective use of these facilities we have a range of software available including Microsoft Office, 2Simple Suite, as well as programming, graphical modelling, data logging, stop-motion animation, photographic editing suites, and multimedia software. We use of range of devices to complement our software packages including visualisers, webcams, digital voice, video and still recorders, dataloggers, ipads, GPS route logger, digital microscopes and programmable devices such as Bee-Bots, Roamers and Lego NXT Robots.

11   Equal Opportunities and Racial Equality (Refer also to these specific policies)

11.1   All school policies have an explicit aim of promoting race equality and will be reviewed in terms of their contribution and effectiveness in achieving this aim.
Godinton Primary School provides a broad and balanced curriculum for all pupils. The school accepts the three principles in the statutory inclusion statement for the National Curriculum:
•   Setting suitable learning challenges for all pupils
•   Responding to pupils' diverse learning needs
•   Overcoming potential barriers to learning and assessment for individuals and groups of pupils
We recognise that citizenship presents opportunities for encouraging respect for diversity.
Our curriculum co-coordinators are responsible for ensuring their subject programmes/schemes of work raise awareness of multi-cultural issues and challenge stereotypical views of different racial groups and nomadic communities. In the purchase of resources, our curriculum co-coordinators will ensure that materials reflect and celebrate ethnic and cultural diversity.

12   Children in Care (Formerly Looked After Children)

12.1   As for all our pupils, Godinton Primary School is committed to helping Child in Care (CIC) to achieve the highest standards they can. To this end staff will ensure that in delivering the curriculum they set suitable learning challenges of CIC, respond to the diverse learning needs of CIC, and help to overcome the potential barriers to learning and assessment for CIC. The IT Manager will support staff in doing this within this subject.

13   Monitoring and review

13.1   Monitoring of the standards of children's work and of the quality of teaching in Computing is the responsibility of the Curriculum Team Leader. The work of the Curriculum Team Leader and IT Manager also involves supporting colleagues in the teaching of Computing, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school. Computing is monitored as part of the school

monitoring cycle, and involves tasks such as lesson observations, pupil discussion, evaluating pupil work and monitoring of planning. This information may then be fed into the School Improvement plan as part of the review of the subject.