



# Grange Primary School

## Computing Policy

### Introduction

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, pupils are equipped to use information technology to create programs, systems and a range of content. 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. (National Curriculum 2014).

Our aim is for children to become confident users of technology and to develop the skills and knowledge relating to Computer Science, Digital Literacy and Information Technology. Computing education is an integral part of preparing children to live in a world where technology is continuously evolving. Work and social activities are being increasingly transformed by access to varied and developing technology. We endeavour to ensure that our children fully grasp the relevance of and the possibilities of emerging technologies so that they can play a part in this rapidly changing landscape.

### Intent, Implementation, Impact

#### Intent

- To build upon children's knowledge and understanding from Foundation to Year 6 following the expectations of the National Curriculum 2014.
- To enable children to build and apply a repertoire of knowledge and skills linked to the three strands of the national curriculum: computer science, digital literacy and information technology.
- Build knowledge of principles of information and computation, how digital systems work, and how to put this knowledge to use through programming.
- Become digitally literate – able to use, express themselves and develop ideas through information and communication technology.
- To encourage children to become confident, creative and independent learners, able to solve problems using computational thinking.
- To make high quality cross-curricular links whilst maintaining the distinctive nature of the subject.

- To ensure children recognise the opportunities and threats that exist from the use of technology and understand how to access technology safely.

### **Implementation**

- The school uses the National Centre for Computing Education resources as a basis for providing a clear and comprehensive scheme of work in line with the National Curriculum.
- The programming aspects of the curriculum will be taught discretely using a range of other (including in-house developed) resources.
- E-safety is developed both through the NCCE resources, and through PSHE lessons.
- Children in all year groups are exposed to a range of topics which encourage progression across the key strands of computer science, digital literacy and information technology.
- All children have access to the hardware and software needed to develop knowledge and skills of digital systems and their applications.
- Children have the opportunity to explore and respond to key issues such as digital communication, cyberbullying, online safety, security, plagiarism and social media.
- The importance of online safety is continuously reinforced and shown through displays within the learning environment. Parents are informed when issues relating to online safety arise and further information/support is provided if required.
- Progress is assessed on an on-going basis using the NCCE 'I can' statements for each area of Computing. This ensures teachers are aware of individual pupil's progress in computer science, information technology and digital literacy.
- Trackers are completed for each year group to illustrate child attainment and progression through the subject.

### **Impact**

- Most children reach the end of year expectations in terms of attainment and progress.
- Children will be confident users of technology, able to use it to accomplish a wide variety of goals, both at home and in school.
- Children will have a secure and comprehensive knowledge of the implications of technology and digital systems. This is important in a society where technologies and trends are rapidly evolving.
- Children are able to recognise the dangers that exist from the use of technology and understand how to access online systems safely.

### **National Curriculum aims**

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.

### **Our Curriculum**

#### **Long term planning**

- The National Curriculum for Computing 2014, Development Matters and the Early Learning Goals provide the long term planning for computing taught in school.

- The school uses and adapts the National Centre for Computing Education scheme of work and long term planning outlines which topic will be covered by which year group and at what time of year.
- Long term planning ensures knowledge and skills progression in computer science, digital literacy and information technology.

### **Medium term planning**

- These schemes provide teachers with examples for computing objectives and include the technical knowledge to be delivered and skills to be developed across all phase groups.
- Years Y1-6 use the National Centre for Computing Education schemes of learning as their medium term planning documents. F1 and F2 plan directly from Development Matters.
- Planning of computing is linked to the creative curriculum wherever possible and the National Centre for Computing topics are referenced in the half-termly planning and submitted to the head teacher.
- EYFS planning is based on the medium term plans and delivered as appropriate to individual children with consideration of where the children are now and what and their next steps.

### **Short term planning**

The above scheme of learning supports individual lesson planning.

Teachers plan lessons to achieve specific lesson objectives, incorporating teaching methods outlined below.

Teachers of the EYFS ensure the children learn through a mixture of adult led activities and continuous provision both inside and outside of the classroom.

## **Teaching Methods**

The emphasis in lessons is to develop an understanding of how computers work, how they can be used as effective tools and how to keep safe whilst using computing technology. Children have the opportunity to work both individually and collaboratively to learn and develop their skills in programming, digital resource creation, electronic communication, research, control and information handling. They will also develop an increasingly broad understanding of technology including hardware, network and the Internet. All work conducted online will be delivered in the context of how to stay safe whilst accessing the world wide web.

Within lessons, new subject specific vocabulary is introduced and used consistently and accurately. Each lesson provides opportunities for children to build on prior knowledge and learning. A cross-curricular approach is used wherever possible, linking learning to pupils' interests and establishing real-life contexts for their work.

In KS1 and KS2, the following activities are delivered in sequence to enable creativity based on increasing confidence and competence within IT and Computer Science and Digital Literacy:

- Creation of digital media projects
- Effective communication using computing technology
- Conducting research projects
- Handling Information
- Programming and control
- Understanding technologies

In EYFS, children work on 'Technology' objectives and towards achieving the Early Learning Goal under the umbrella of 'Understanding the world.' The Early Learning Goal for Technology states that 'Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.' At Grange Primary, our children develop computing skills through both adult focussed activities and within the daily continuous provision. Children have access to games and programmes on the Interactive Whiteboards, iPads for individual use of games and painting programmes, and we have a bank of programmable toys (bee-bots) for

independent exploration into learning about coding. We also have CD players, cameras and iPods for the children to use in their free time. Adults staffing our Continuous Provision show children how to use the resources effectively and encourage them to further increase their knowledge and skills. We also demonstrate how technology is used by encouraging the use of search engines to find out answers to their questions and to watch videos and play music.

### **Special educational needs & disabilities (SEND)**

Computing is taught to, and inclusive of, all children, whatever their ability. Using high quality resources, teachers provide learning opportunities that are matched to the needs of children with learning difficulties and when necessary, take into account the targets set for individual children in their Individual Education Plan (IEPs).

### **Assessment**

Children in the Foundation Stage are assessed in accordance with the EYFS curriculum.

Assessment trackers are used in years 1-6. Class teachers collect data, assessing if children are working below, at or above the expected levels in the three key strands: Computer Science, Digital Literacy and Information Technology.

As appropriate, teachers provide support and identify specific next steps in learning for target individuals or groups of learners.

Marking and responding to feedback– see whole school marking policy.

### **Monitoring**

The Curriculum leader, alongside SLT, is responsible for monitoring and evaluating curriculum progress. This is done through work scrutiny, planning scrutiny, resource audits and learning walks which involve lesson observation drop-ins, pupil interviews and subject-specific conversations with staff.

Learning at Home

Much of the creative project homework, which is set termly, allows for cross-curricular links with computing. At home children are substantial consumers of computing technologies including for gaming, communication, content creation and research purposes. Home learning projects capitalise on these skills.

### **Role of Subject Leader**

- The subject leader, together with the head teacher, is responsible for monitoring and evaluating the quality of teaching and learning of computing across the school, and ensuring continuity and progression of knowledge and skills through the coverage of the subject.
- The subject leader is responsible for collecting and analysing school data in consultation with the assessment co-ordinator.
- The subject leader will undertake any relevant training and keep abreast of current initiatives.
- The school leader will support colleagues with planning ideas, lesson delivery and assessment as appropriate.
- The subject leader is responsible for the ordering varied and high quality resources that are appropriate for all children to access their learning.

The policy will be reviewed March 2024