



**Subject:** **Computing and ICT**

**Person Responsible:** **Claire Penfold**

**Date:** **October 2016**

### **Curriculum Aims**

The use of information and communication technology is an integral part of the 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.

At Lodge Farm Primary School, we believe it is essential that all pupils gain the confidence and ability that they need in a range of computing skills and to know how to keep safe when using all digital technology.

It is our duty to provide the children with a structured and progressive approach in their learning which will enable them to do this. We aim to do this by

- meeting the requirements of the National Curriculum programmes of study for computing
- providing a relevant, challenging and enjoyable curriculum for computing for all pupils
- using computing as a tool to support, enhance and extend learning throughout the school curriculum
- developing children's motivation and enthusiasm in computing enabling them to feel a sense of achievement and purpose
- equipping pupils with the confidence and capability to use computing throughout their life beyond primary school
- developing children's understanding of how to use computing safely and responsibly
- responding to new developments in technology

### **Curriculum content and planning**

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

### **Early years Objectives**

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. Recording devices can support children to develop their communication skills. This is particularly useful with children who have English as an additional language.

### **Key Stage 1 Objectives**

By the end of key stage 1, 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 2 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

### **Planning**

At Lodge Farm, our computing curriculum is taught through the ***Herts for Learning Computing Scheme*** which has been created by the Herts for Learning Computing Curriculum Team and meets the requirements of the 2014 Computing Programmes of Study.

Coverage includes Computer Science, Information Technology, Digital Literacy, and the safe and appropriate use of technology through five strands;

- **Create:**  
Create, organise, manipulate, store, retrieve, review and present varied digital content
- **Digital Research:**  
Derive data from a number of sources, including pictorial and use digital research tools effectively
- **Info....Info:**  
Collect, organise, evaluate and analyse data to present as information
- **Digital Communication:**  
Use a range of digital tools safely and appropriately for communication and collaboration to support learning in and beyond school and keep personal information secure
- **eWorlds:**  
Design, create, test, debug and refine algorithms and programs for specific purposes

Each year group is taught three themes which incorporate each of the five strands across the year which allow for clear progression.

*See the Whole School Computing Annual Overview (attached).*

Progress towards the objectives is recorded by teachers as part of their class monitoring and assessment system.

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

- 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 ability in the room and setting different tasks for each ability group
- providing resources of different complexity that are matched to the ability of the child
- using classroom assistants to support the work of individual children or groups of children as appropriate

### **The role of the subject leader**

The computing subject leader is responsible for the following;

#### **To improve outcomes for learners**

##### *Monitoring and reviewing:*

- monitor and review the teaching, learning and assessment of computing in all year groups
- ensure there is appropriate provision and progression across the school
- This is achieved through staff training of the HfL Computing curriculum; implementing a whole school planning format; termly planning scrutinies to ensure objectives and content is in line with the HfL Computing curriculum; feedback is given to teachers regarding their planning and additional support/training is provided as appropriate; informal conversations with teachers, pupil voice and moderation of Independent open-ended tasks.
- report on provision and standards in Computing, cross curricular use of ICT and Online safety to the Senior Leadership Team and the Full Governing Body annually.

##### *Staff development and support:*

- identifying the ICT strengths and areas for development for individual staff
- supporting teachers in planning, resourcing, monitoring and assessing the computing curriculum
- supporting teachers in the use of computing skills across the curriculum
- providing staff with guidance and support with regards to online safety
- organising in-service training

##### *Co-ordination:*

- ensure the Computing policy, Online safety policy and Acceptable Use Agreements are up to date
- ensure that the implementation of the above is adhered to by staff, governors, pupils, parent and visitors

- ensure the school website is regularly updated, in particular the online safety page for parents
- regularly disseminate information to parents via the school newsletter, in particular with regards to online safety

*Resources:*

- liaising with the IT technician and site manager to ensure the safety and maintenance of ICT equipment
- purchasing and organising resources to support teaching and learning in computing and for teaching ICT skills across the curriculum

*External liaison:*

- keep abreast of the use of ICT in the curriculum
- liaise with Herts computing and online safety team
- liaise with other schools
- liaise with outside agencies as appropriate

### **Assessment and recording**

At Lodge Farm, assessment and monitoring of the children's capabilities in Computing follows the Herts for Learning approach for tracking attainment which is outlined in the ***Herts for Learning Computing Scheme***.

We monitor and assess the children's progress in Computing in two ways as detailed below.

**Formative assessments** are carried out during and following short focused tasks and activities. They provide the children and teachers with the opportunity to reflect on the learning in the context of the agreed success criteria. This informs the teachers' planning for the next lesson or activity.

**Summative assessments** are carried out termly after the completion of each theme's open-ended task which enables the children to demonstrate their computing capability around the knowledge and understanding provided within each theme. Pupil review and reflection are central to learning in Computing and children will have the opportunity to review and identify their next steps.

Children are assessed at the end of each term's theme and at the end of each academic year against age related expectations.

### **Special needs and equal opportunities**

At Lodge Farm, we ensure all pupils have equal access to the National Curriculum for computing. There is provision for all pupils to achieve, including boys and girls, higher achievers, gifted and talented, those with SEN, children with disabilities, children from all social and cultural backgrounds, children who are in care and those subject to safeguarding, children from different ethnic groups and those from diverse linguistic backgrounds.

If children are required to use ICT as part of their homework, provision is made in school for them to complete this if they do not have the necessary provision at home.

## **SMSC and British Values**

Computing makes a contribution to the teaching of SMSC and British Values.

### **Democracy:**

We provide opportunities within Computing for the children to learn to work together in a collaborative manner and to respect other people and the democracy. Children gain an understanding of how they can influence decision-making through the democratic process.

### **Rule of Law:**

Through the teaching of online safety and copyright, children learn to distinguish right from wrong and develop a view about the use and misuse of ICT and become aware of and respect the civil and criminal laws of England. Children gain an appreciation that living under the rule of law protects themselves and others which is essential for their wellbeing and safety.

### **Individual Liberty:**

By enabling the children to develop their ICT skills within Computing and through cross-curricular use of ICT, this enables them to develop their self-knowledge, self-esteem and self-confidence.

### **Mutual Respect for and tolerance of those with different faiths and beliefs:**

We provide the children with a range of stimuli, resources and software in Computing which encourage respect and tolerance between different cultural traditions. This enables the children to develop an appreciation of and respect for their own and other cultures.

By teaching the children how to safely use the Internet, email and blogging, they learn to develop a sense of global citizenship. Through the discussion of moral issues related to electronic communication, children gain a knowledge and understanding of the interdependence of people around the world.

## **Resources**

Lodge Farm acknowledges the need to continually maintain, update and develop its resources and to make progress towards a consistent, compatible PC system by investing in resources that will effectively deliver the strands of the national curriculum and support the use of computing across the school.

We employ a qualified technician who is responsible for the installation of new software, maintenance of hardware and offers support to staff where difficulties arise. The technician is in school for two half days every week. Teachers are required to inform the technician of any faults as soon as they are noticed.

### **Computing network infrastructure and equipment**

- every classroom from nursery to Year 6 has a laptop connected to the school network and an interactive whiteboard with audio, DVD and video facilities
- available to use in the classrooms with Internet access there are
  - two laptop trolleys which each have 15 laptops
  - one netbook trolley which has 20 netbooks
  - two iPad trolleys which have 20 and 30 iPads
  - one iPad mini trolley which has 16 iPad minis
- the above hardware are available throughout the school days as part of computing lessons and for cross-curricular use
- each class from Year 1 to Year 6 has a timetabled lesson across the week for teaching specific computing skills

- children may use computing independently, in pairs, alongside a TA or in a group with a teacher

Resources to support teaching the computing curriculum and other subjects are located in the old computing suite, if they are not classroom based.

### **Health and Safety**

Lodge Farm is aware of the health and safety issues involved in children's use of computing. All electrical appliances in school are annually PAT tested accordingly. We advise that staff should not bring their own electrical equipment in to school unless this is necessary. This also applies to any equipment brought in to school by outside agencies and it is the responsibility of the member of staff organising this to advise those people. All staff should visually check electrical equipment before they use it and take any damaged equipment out of use. Damaged equipment should then be reported to the IT technician, site manager or subject leader who will arrange for repair or disposal.

### **Online Safety**

We take the safety of all members of Lodge Farm seriously and ask children, staff and visitors to agree to and sign our Acceptable Use Agreement and Code of Conduct before access to the internet is given. By sending their children to Lodge Farm, our parents agree to support and follow our online safety policy as outlined in the Pupil Acceptable Use Agreements relevant for their children's key stage. They also agree that they fully understand their responsibilities regarding their own use of social networking in relation to the school and that they will ensure that appropriate systems are in place at home to protect and support their children.

*Further details can be found in the Online Safety and Data Protection Policy.*

Online safety is taught through the computing curriculum. Further lessons may also be taught at the discretion of the class teacher, as appropriate to the needs of each class.

Lodge Farm participates annually in Safer Internet Day raising awareness of how to stay safe online through a staff meeting, information evening for parents and a range of activities for children.

### **Security**

All computers and laptops are marked with the school postcode. The majority of laptops, netbooks and iPads are kept in the relevant trolleys and are locked away over periods of school closure.

The computers in the office and Head teacher's room are password protected which are only known to the secretary and head teacher. All teachers have password protected areas on the network and these passwords are not shared with the children.

The IT technician is responsible for regularly updating anti-virus software.

All staff and governors are aware that Lodge Farm uses the Herts grid for learning Internet filtering and monitoring system. The subject leader's annual report to the Senior Leadership Team and Full Governing Body informs them of other ICT security procedures which can also be found in the *Online Safety and Data Protection Policy*.

### **Review procedures**

Policy to be reviewed **Autumn 2019**