



Longridge C of E Primary
Computing Policy
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Computing Policy

Introduction

The use of information and communication technology is an integral part of the national curriculum and is a key skill for everyday modern 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 Longridge C of E Primary School, we recognise that pupils are entitled to quality hardware and software and a structured and progressive approach to the learning of the skills needed to enable them to use it effectively. The purpose of this policy is to state how the school intends to make this provision.

Intent

Within an ever changing and technological world, Longridge C of E Primary School understands and values the importance of teaching Computing from a young age. We acknowledge that future generations will rely heavily on their computational confidence and digital skills in order to support their progress within their chosen career paths.

Therefore, it is our school's aim to equip children with the relevant skills and knowledge that is required to understand the three core areas of Computing (Computer Science, Information Technology and Digital Literacy) and to offer a broad and balanced approach to providing quality first teaching of this subject.

Computing is an integral part to a child's education and everyday life. Therefore, we intend to support our pupils to access and understand the core principles of this subject through engaging and cross-curricular opportunities. They develop analytical problem-solving skills and learn to evaluate and apply information technology. It also enables them to become responsible, competent, confident and creative users of information technology

Aims:

- Provide a relevant, challenging and enjoyable curriculum for Computing for all pupils.
- Meet the requirements of the national curriculum programmes of study for computing.
- Use computing as a tool to enhance learning throughout the curriculum.
- To respond to new developments in technology.
- To equip pupils with the confidence and capability to use computing throughout their later life.
- To enhance learning in other areas of the curriculum using computing.
- To develop the understanding of how to use computing safely and responsibly.

The new 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.

The three areas of computing:

We can analyse the Computing Curriculum through three interrelated strands: computer science, information technology and digital literacy. These strands are all equally important as they provide pupils with functional skills that are crucial for their learning both at school and outside school.

- **Computer Science** - the understanding of coding and programming across a range of physical devices and digital resources.
- **Information Technology** - the range of skills required to operate and manipulate specific programs, systems, and content.
- **Digital Literacy** - the knowledge required to use technology safely and to evaluate and react to any potential risks of the online/digital world

Early years

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 explore using non-computer based resources such as metal detectors, controllable traffic lights and walkie-talkie sets. Recording devices can support children to develop their communication skills. This is particular useful with children who have English as an additional language. The children have access to two computers within the classroom and a set of school ipads that can be used when needed.

Key Stage 1

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

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.

Implementation

Longridge C of E Primary School provides pupils with a broad and stimulating Computing curriculum which is adapted to suit the pupils' individual needs. Pupils will be taught Computing skills across the curriculum at a level appropriate to match their abilities. Work given will be relevant and appropriately challenging at each key stage.

We have created an exciting and enriched curriculum that has been edited and adapted to suit our needs that is based around the NCCE (National Centre for Computing Education) Teach Computing. Our exciting and invigorating scheme offers everything you need to teach the new Computing Programme of Study for all year groups.

Alongside the NCCE Teach Computing we also use the Project Evolve online safety tool where staff start each lesson with an aspect of online safety.

Alongside our computing lessons children will be given various opportunities to use Microsoft Word, Powerpoint and Publisher to create various documents linked with their other curricular topics for example posters, powerpoints, leaflets, typed up poems etc..

NCCE in Key Stage One & Two

The National Centre for Computing Education (NCCE) is funded by the Department for Education and supporting partners, and marks a significant investment in improving the provision of computing education in England. The NCCE is run by a consortium made up of STEM Learning, the Raspberry Pi Foundation and BCS, The Chartered Institute for IT. The units incorporate the three strands of computing and all of the national curriculum and are continuously reviewed and evaluated which leads to constant change and amendments. The unit coverage is as follows:

	Computer systems and networks	Creating Media	Creating Media	Data and Information	Programming A	Programming B
Y1	Technology around us	Digital painting	Digital writing	Grouping data	Moving a robot	Introduction to animation
Y2	IT around us	Digital photography	Making music	Pictograms	Robot algorithms	An introduction to quizzes
Y3	Connecting computers	Animation	Desktop publishing	Branching databases	Sequence in music	Events and actions
Y4	The internet	Audio editing	Photo editing	Data logging	Repetition in shapes	Repetition in games
Y5	Sharing information	Vector drawing	Video editing	Flat-file databases	Selection in physical computing	Selection in quizzes
Y6	Communication	3D Modelling	Web page creation	Spreadsheets	Variables in games	Sensing

Impact

The impact of our computing curriculum can not only be seen in displays around school and on the children's individual computer accounts, but also can be measured by speaking to the children themselves. The teaching of the computing curriculum enables our children to use a computer with confidence.

We measure the impact of our curriculum using the following methods:

- Summative assessment of pupil discussions about their learning.
- Images of the children's practical learning
- Children's work saved onto their individual accounts
- Interviewing the pupils about their learning (pupil voice).
- Observations of lessons
- Annual reporting of standards across the curriculum.

Resources and Access

The school 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 ICT and computing across the school. Teachers are required to inform the Computing Coordinator or Technician of any faults as soon as they are noticed. The technician will fix or resolve problems as soon as they arise. Resources if not classroom based are located in the Computing Suite.

ICT and computing network infrastructure and equipment has been sited so that:

- All computers in school are connected to the school network and have internet access. All classrooms in school have an interactive whiteboard or a large touch screen TV.
- The computing suite is timetabled so that every class has a session in there to teach specific ICT and computing skills at least once a week.
- Pupils may use ICT and computing independently, in pairs, alongside a TA or in a group with a teacher.
- The school has an ICT technician who is in school every Wednesday.
- IWBs or Smartboards are installed in all classrooms and some workrooms.
- The school have 22 ipads that can be used within lessons to support learning.

Assessment

Assessments in Computing should involve the children being active and reflective on their work. They should be able to recognise the progress they are making as well as the skills and knowledge they are developing.

Teachers make formative assessments of pupils during lessons that is used to inform future planning. This is done through:

- Skilled teacher questioning within lessons;
- Observing pupils at work to identify strengths or misconceptions;
- Using plenaries to gain information about what pupils have learnt;
- Pupils are asked to explain and describe what they have learnt

Summative assessments are used at the end of a unit of work which have been created for each unit taught. The assessment allows teachers to assess the pieces of work created against the objectives for that half term in order to:

- Identify the next steps in learning for individual children;
- Share the information gained with colleagues and subject leader to then make any necessary modifications to teaching programme.
- A national curriculum level is reported at the end of each academic year in school reports.

This is monitored by the computing coordinator to ensure progression throughout the year groups.

Role of the Coordinator

The Computing Coordinator should know exactly what every class teacher is teaching their children in computing each term and throughout the year. On a regular basis, the Coordinator will be observing and monitoring the teaching and learning of Computing throughout the school. Weekly, medium and long term plans will be examined for progression and continuity. They will be responsible for collecting photographic evidence of the children undergoing computing or any practical work, drawings, pictures or displays.

In addition alongside the ICT Technician, the Coordinator will inform and provide relevant, requested and updated ICT training and information for staff when necessary. For example this might be how to use a digital and video camera or showing and demonstrating how to work new software purchased.

The Class Teachers are responsible for the delivery of this policy and the care and security of the hardware and software and should inform the coordinator if they require any extra software to deliver their lessons. The school is committed to the ongoing resourcing of Computing equipment and software, in relation to the School Development Plan. The school is responsible for ensuring that copyright regulations are not infringed.

Health and Safety

The school is aware of the health and safety issues involved in children's use of Computing. All electrical appliances in school are tested accordingly. It is advised that staff should not bring their own electrical equipment in to school, but if this is necessary, then the equipment must be pat tested before being used in school. This also applies to any equipment brought in to school by, for example, people running workshops, activities, etc. and it is the responsibility of the member of staff organising the workshop, etc. 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 ICT technician, care taker or head teacher who will arrange for repair or disposal.

Security and Online Safety

- The ICT and Computing technician will be responsible for regularly updating anti-virus software.
- Use of computing will be in line with the school's 'acceptable use policy'. All staff, volunteers and children must sign a copy of the schools AUP.
- Parents will be made aware of the 'acceptable use policy'.
- All pupils and parents will be aware of the school rules for responsible use of computing and the Internet and will understand the consequence of any misuse.
- The agreed rules for safe and responsible use of computing and the Internet will be displayed in computing area.
- Staff will receive yearly training on online safety and ensure that it is taught throughout their computing units.
- Computing co-ordinator attends regularly training to ensure that we are following the most upto date guidance and policies and feedback to staff and governors.

Key terms across KS1 and KS2:

Debug

KS1 create and debug simple programs

KS2 design, write and debug programs that accomplish specific goals

Errors in programs, or anything that stops them from working properly, are known as bugs. To debug means to fix or get rid of the bugs and solve problems within a program in order to make it work how it is intended. Mistakes are a normal, common part of programming and every computer programmer should get used to the fun of debugging!

Decomposing Problems

KS2 solve problems by decomposing them into smaller parts

Decomposing means breaking down into chunks. If there are several parts required in a program to make it work, splitting into smaller sections makes it easier to solve each part separately.

Digital Content

KS1 use technology purposefully to create, organise, store, manipulate and retrieve digital content

KS2 use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content

Digital content means any information that is stored or presented on computers or the Internet. Everything you create on the computer becomes digital content. This includes files on your computer, network or on the World Wide Web. Children need to start taking certain factors into consideration, such as where the digital content has come from and who has made it.

Digital Devices

- KS1** understand what algorithms are; how they are implemented as programs on digital devices
- KS2** select, use and combine a variety of software (including internet services) on a range of digital devices

Digital devices are any types of computers that you use, including laptops, tablets and smart phones. This also includes hardware which may connect to a computer.

Sequence, Selection and Repetition

- KS2** use sequence, selection, and repetition in programs

Sequence means to put things into a particular order where it is important that one action needs to be performed before another. Selection means making a choice, specifically where a program can do one of two or more things. Repetition is to perform or repeat the same process multiple times. In a loop, a process can be repeated for a set number of times or until a variable changes. Sequence, selection and repetition are the three main ways to structure a piece of computer code or algorithm.

Software

- KS2** select, use and combine a variety of software (including internet services) on a range of digital devices

Different types of software are more suitable for different tasks. Choosing the best software is important for completing a task properly and combining software means using more than one type together, for example creating a graph or chart in a spreadsheet then copying this to a word processor or desk top publisher as part of a report.

Variables

- KS2** work with variables and various forms of input and output

Variables are anything that can be changed or given a value in a program. A variable may be the input from a particular device or become the output, based on some code or calculation; it may be a number or text.