Ludgershall Castle Primary School

Computing policy

2024

Our shared vision for Ludgershall Castle Primary School is of a happy, vibrant learning community, improving together. We are working with pupils, parents and the wider community to create the supportive atmosphere of trust and mutual support in which we all thrive.

'Learn, Have Fun, Succeed' are carefully chosen words that encapsulate the aims of our school.

- ☆ We want learning and teaching to be fun for all
- ☆ We 'have a go' and try our best; we celebrate our successes
- ☆ We want to care for and respect everyone in our school; everybody matters
- ☆ We want school to be a safe place for everybody
- ☆ We know that learning is for life
- ☆ We all want to be good citizens

Vision

At Ludgershall Castle Primary school we recognise that we have a responsibility to prepare all our pupils for the future by improving their knowledge and understanding of technology and how it can aid our learning now and in the real world beyond education.

The world of technology is rapidly developing and changing and we believe our pupils should be prepared for these changes. Computing is an increasing part of life today and it is vital that children are confident and have the ability that they need in this subject for their futures. We aim to ensure that all children leave Ludgershall Castle Primary with a solid foundation to become digital literate. We use a progressive approach from EYFS to the end of KS2 to ensure that our children have fun when using technology, learn new knowledge and skills and can succeed both at school and in the future.

In addition, we understand that we have a duty to keep our children safe online. We ensure that children are taught to be responsible, safe users of technology. They gain increasing knowledge of how best to stay safe when online through progressive explicit, and indirect teaching of online safety both within Computing and across the curriculum throughout their school experience.

Why study Computing?

Teaching computing is too important to be side lined. Computing capability is an essential skill for life and enables learners to participate more readily in a rapidly changing world.

Simple tasks such as sending an email or using the internet for research give our children access to ideas and experience from a wide range of people, communities and cultures.

Learning about control systems, coding and robots, increases children's awareness of many of the operation systems we use to manage our lives every day.

We believe that computing helps develop essential life skills they will need in adult life such as operating machinery in their houses, further education and work.

National Curriculum

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with maths; science and design technology and can provide insight into both natural and artificial systems. The core of computing is teaching the principles of information and computation and building on this knowledge and understanding pupils can create programs, systems and a range on content.

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.

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 precise and unambiguous instructions
- ☆ create and debug simple programs
- ☆ use logical reasoning to predict the behaviour of simple programs
- ☆ use technology purposefully to create, organise, store, manipulate and retrieve digital content
- ☆ recognise common uses of information technology beyond school
- ☆ use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

Key stage 2 Pupils should be taught to:

- ☆ design, write and debug 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
- ☆ use logical reasoning to explain how some simple algorithms work 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
- ☆ use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- ☆ select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
- ☆ use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

<u>Our Intent</u>

Our intention is to provide the children at Ludgershall Castle Primary School with a through education in computing through progressive teaching both in computing lessons and across the curriculum within our termly topics. We will cover the three main strands of computing (information technology, computer science and digital literacy) to help children to better understand and access the technology around them and make use of it for a multitude of purposes including to use it to be creative and enhance their learning.

Embedded throughout the teaching of computing and use of technology will be a clear message of how to be a responsible and safe user of technology as we address issues of online safety both within computing lessons and across the curriculum.

<u>Our Implementation</u>

Throughout KS1 and KS2 we use Teach Computing as a cohesive scheme of work addressing the statutory aspects of the National Curriculum. We believe that Teach Computing delivers fun and exciting lesson that engage children, and helps to raise standards and achieve the pupil's full potential. We also use additional schemes such as Project Evolve lessons to teach the

objectives from 'Education for a Connected World' framework, and national events including Safer Internet Day to enhance their learning of online safety.

Computing in EYFS

As of 2021 there are no targets set EYFS. However, EYFS still follow the Education for a Connected World targets for Computer Safety as well as using a wide range of technologies within the classroom environment. These include, but are not limited to, iPads and interactive boards.

Computing Key Stage 1

In the Key Stage 1 curriculum pupils should develop knowledge and understanding on algorithms, create and debug simple programmes. They should be able to use technology to create, organise, store and retrieve digital content. Pupils will also be able to use all technology safely, keeping important information safe.

This is reflected in our Year 1 and 2 learning ladders:

Year 1

Computing Systems	-To identify technology -To identify a computer and its main parts -To use a mouse in different ways -To use a keyboard to type on a computer -To use the keyboard to edit text -To create rules for using technology responsibly	
Creating Media	-To describe what different freehand tools do -To use the shape tool and the line tools -To make careful choices when painting a digital picture -To explain why I chose the tools I used -To use a computer on my own to paint a picture -To compare painting a picture on a computer and on paper -To use a computer to write -To add and remove text on a computer -To identify that the look of text can be changed on a computer -To make careful choices when changing text -To explain why I used the tools that I chose -To compare typing on a computer to writing on paper	
Data Information	-To label objects -To identify that objects can be counted -To describe objects in different ways -To count objects with the same properties -To compare groups of objects -To answer questions about groups of objects	

Programming	-To explain what a given command will do -To act out a given word -To combine forwards and backwards commands to make a sequence -To combine four direction commands to make sequences -To plan a simple program -To find more than one solution to a problem -To choose a command for a given purpose -To show that a series of commands can be joined together -To identify the effect of changing a value -To explain that each sprite has its own instructions -To design the parts of a project -To use my algorithm to create a program	

Year 2

Computing Systems	-To recognise the uses and features of information technology -To identify the uses of information technology in the school -To identify information technology beyond school -To explain how information technology helps us -To explain how to use information technology safely -To recognise that choices are made when using information technology	
Creating Media	-To use a digital device to take a photograph -To make choices when taking a photograph -To describe what makes a good photograph -To decide how photographs can be improved -To use tools to change an image -To recognise that photos can be changed -To say how music can make us feel -To identify that there are patterns in music -To experiment with sound using a computer -To use a computer to create a musical pattern -To create music for a purpose -To review and refine our computer work	
Data Information	-To recognise that we can count and compare objects using tally charts -To recognise that objects can be represented as pictures -To create a pictogram -To select objects by attribute and make comparisons -To recognise that people can be described by attributes -To explain that we can present information using a computer	
Programming	-To describe a series of instructions as a sequence -To explain what happens when we change the order of instructions -To use logical reasoning to predict the outcome of a program -To explain that programming projects can have code and artwork	

	-To design an algorithm -To create and debug a program that I have written -To explain that a sequence of commands has a start -To explain that a sequence of commands has an outcome -To create a program using a given design -To change a given design -To create a program using my own design -To decide how my project can be improved	

Computing at Key Stage 2

In the Key Stage 2 curriculum pupils should develop knowledge in designing, writing and debugging programmes that achieve a specific goal. They should also be able to give logical reasoning to explain some simple algorithms and detect errors. Pupils should also be introduced to different computer networks including the internet and how to keep safe but also how to use networks such as the internet responsibly and what is acceptable and unacceptable behaviour.

This is reflected in our Lower Key Stage 2 Learning Ladders:

Year 3

Computing Systems	-To explain how digital devices function -To identify input and output devices -To recognise how digital devices can change the way we work -To explain how a computer network can be used to share information -To explore how digital devices can be connected -To recognise the physical components of a network	
Creating Media	-To explain that animation is a sequence of drawings or photographs -To relate animated movement with a sequence of images -To plan an animation -To identify the need to work consistently and carefully -To review and improve an animation -To evaluate the impact of adding other media to an animation -To recognise how text and images convey information -To recognise that text and layout can be edited -To choose appropriate page settings -To add content to a desktop publishing publication -To consider how different layouts can suit different purposes -To consider the benefits of desktop publishing	
Data Information	-To create questions with yes/no answers -To identify the attributes needed to collect data about an object -To create a branching database -To explain why it is helpful for a database to be well structured -To plan the structure of a branching database -To independently create an identification tool	

Programming	-To explore a new programming environment -To identify that commands have an outcome -To explain that a program has a start -To recognise that a sequence of commands can have an order -To change the appearance of my project -To create a project from a task description -To explain how a sprite moves in an existing project -To create a program to move a sprite in four directions -To adapt a program to a new context -To develop my program by adding features -To identify and fix bugs in a program -To design and create a maze-based challenge	

Year 4

Computing Systems	-To describe how networks physically connect to other networks -To recognise how networked devices make up the internet -To outline how websites can be shared via the World Wide Web (WWW) -To describe how content can be added and accessed on the World Wide Web (WWW) -To recognise how the content of the WWW is created by people -To evaluate the consequences of unreliable content	
Creating Media	-To identify that sound can be recorded -To explain that audio recordings can be edited -To recognise the different parts of creating a podcast project -To apply audio editing skills independently -To combine audio to enhance my podcast project -To evaluate the effective use of audio -To explain that the composition of digital images can be changed -To explain that colours can be changed in digital images -To explain how cloning can be used in photo editing -To explain that images can be combined -To combine images for a purpose -To evaluate how changes can improve an image	
Data Information	-To explain that data gathered over time can be used to answer questions -To use a digital device to collect data automatically -To explain that a data logger collects 'data points' from sensors over time -To recognise how a computer can help us analyse data -To identify the data needed to answer questions - To use data from sensors to answer questions	

Programming	-To identify that accuracy in programming is important -To create a program in a text-based language -To explain what 'repeat' means -To modify a count-controlled loop to produce a given outcome -To decompose a task into small steps -To create a program that uses count-controlled loops to produce a given outcome -To develop the use of count-controlled loops in a different programming environment -To explain that in programming there are infinite loops and count controlled loops -To develop a design that includes two or more loops which run at the same time -To modify an infinite loop in a given program -To design a project that includes repetition -To create a project that includes repetition	

It is also reflected in our Upper Key Stage 2 learning ladders:

<u>Year 5</u>

Computing Systems	-To explain that computers can be connected together to form systems -To recognise the role of computer systems in our lives -To experiment with search engines -To describe how search engines select results -To explain how search results are ranked -To recognise why the order of results is important, and to whom	
Creating Media	-To explain what makes a video effective -To identify digital devices that can record video -To capture video using a range of techniques -To create a storyboard -To identify that video can be improved through reshooting and editing -To consider the impact of the choices made when making and sharing a video -To identify that drawing tools can be used to produce different outcomes -To create a vector drawing by combining shapes -To use tools to achieve a desired effect -To recognise that vector drawings consist of layers -To group objects to make them easier to work with -To apply what I have learned about vector drawings	
Data Information	-To use a form to record information -To compare paper and computer-based databases -To outline how you can answer questions by grouping and then sorting data -To explain that tools can be used to select specific data -To explain that computer programs can be used to compare data visually -To use a real-world database to answer questions	

Programming	-To control a simple circuit connected to a computer -To write a program that includes count-controlled loops -To explain that a loop can stop when a condition is met -To explain that a loop can be used to repeatedly check whether a condition has been met -To design a physical project that includes selection -To create a program that controls a physical computing project -To explain how selection is used in computer programs -To relate that a conditional statement connects a condition to an outcome -To explain how selection directs the flow of a program -To design a program which uses selection -To create a program which uses selection -To evaluate my program	

Year 6

Computing Systems	-To explain the importance of internet addresses -To recognise how data is transferred across the internet -To explain how sharing information online can help people to work together -To evaluate different ways of working together online -To recognise how we communicate using technology -To evaluate different methods of online communication	
Creating Media	-To review an existing website and consider its structure -To plan the features of a web page -To consider the ownership and use of images (copyright) -To recognise the need to preview pages -To outline the need for a navigation path -To recognise the implications of linking to content owned by other people -To recognise that you can work in three dimensions on a computer -To identify that digital 3D objects can be modified -To recognise that objects can be combined in a 3D model -To create a 3D model for a given purpose -To plan my own 3D model -To create my own digital 3D model	
Data Information	-To create a data set in a spreadsheet -To build a data set in a spreadsheet -To explain that formulas can be used to produce calculated data -To apply formulas to data -To create a spreadsheet to plan an event -To choose suitable ways to present data	

Programming	-To define a 'variable' as something that is changeable -To explain why a variable is used in a program -To choose how to improve a game by using variables -To design a project that builds on a given example -To use my design to create a project -To evaluate my project -To create a program to run on a controllable device -To explain that selection can control the flow of a program -To update a variable with a user input -To use a conditional statement to compare a variable to a value -To design a project that uses inputs and outputs on a controllable device -To develop a program to use inputs and outputs on a controllable device	

Recording

Evidence of computing and online safety learning is kept in topic books in KS1 and alongside PSHE learning in KS2. Evidence consists of any written work that the children have completed and photographs of practical learning such as physical computing. As well as the children's learning further evidence is collected by the subject lead and student ambassadors when carrying out learning walk through the means of learning walks and collection of pupil's voice.

Cross Curricular Links

There are a number of cross curricular links which are listed below:

- ☆ Science: learning how to find, select, and analyse information on the internet. Children use computers to record, present and interpret data and to review, modify and evaluate their work and improve its presentation.
- ☆ KS 1 History: The difference between now and then
- ☆ KS 1 English: Instruction writing, story writing, posters and research
- ☆ KS 2 English: Instruction writing, story writing, editing and research
- ☆ KS 1 Maths: problem solving, reasoning, statistics
- ☆ KS 2 Maths: patterns, algebra, equations, problem solving, statistics
- ☆ PSHE: Keeping safe online and online safety
- ☆ Geography: Using technology and relevant programmes to collect and record data during fieldwork studies.
- ☆ Art: children can use Apps such as 'Pic Collage' to create their masterpieces and animation and photography as digital media.

Our Impact

The implementation of both Teach Computing and Project Evolve ensures that children leaving Ludgershall Castle Primary School are competent and safe users of computer and the internet as well as having an understanding on how the technology works. They will have developed skills to express themselves and be creative in using digital media and be able to apply these skills in different challenges going forward.

Management and Responsibility

The delivery of the Computing Curriculum will be overseen by the subject leader whose main roles and responsibilities include:

- ☆ Contributing to any requirements of the school improvement plan which are linked to Computing
- ☆ Monitoring the delivery of Computing throughout the school and advising on any action or development needed
- ☆ Identifying appropriate training and publishing any CPD opportunities to staff
- ☆ Supporting colleagues in their planning, implementation and assessment
- ☆ Keeping up to date and being informed about any developments within the subject
- ☆ Creating and maintaining an up to date Subject Leaders Folder
- ☆ Creating links within the cluster and wider community
- ☆ Promoting enthusiasm for the subject of Computing and to demonstrate good practice
- ☆ Supporting and guiding staff by encouraging the sharing of ideas, successes and achievements
- ☆ Keeping under review the written policy document for Computing
- ☆ Providing opportunities for fieldwork experiences
- ☆ Collecting videos and photographic evidence from Computing activities around the school
- ☆ Being aware of national and local developments in Computing through reading relevant materials and attending courses

Policy Review and Evaluation

This policy is embedded in our school's aims and vision and was agreed and adopted by staff and governors in Spring term 2024. It will be reviewed in Spring term 2027.