Computing



At Ellistown Primary School, we believe computing is an essential part of modern life and plays a key role in preparing children for the future. Through our computing curriculum, pupils develop the knowledge and skills needed to use technology confidently, creatively and safely.
Our curriculum is designed to develop children's understanding across the three strands of computing:

- **Computer Science** – understanding algorithms, programming and how digital systems work.
- **Information Technology** – using technology purposefully to create, organise and communicate information.
- **Digital Literacy** – developing the skills to use technology safely, responsibly and effectively.

Computing is taught through a carefully sequenced curriculum that builds knowledge and skills progressively from EYFS to Year 6. Children learn to solve problems, think logically, create digital content and communicate using a range of technologies.

Online safety is woven throughout the curriculum. We teach children how to use technology safely and responsibly, understand potential risks and know where to seek support if they have concerns.

We aim to develop digitally literate learners who are equipped to participate safely, confidently and successfully in an increasingly digital world.

Computing Curriculum Map

		Term					
		Aut 1 (National Coding Week)	**Aut 2**	**Spr 1** (Safer Internet Day)	**Spr 2**	**Sum 1**	**Sum 2**
KS1	**Year 1**	Digital Foundations 1 (6 steps)	Computer Systems and Networks 1 (4 steps)	Digital Citizenship 1 (4 steps) Unplugged	Programming 1 (5 steps) Unplugged	Creating Media 1 (5 steps)	Data and Information 1 (5 steps) Unplugged
	Year 2	Digital Foundations 2 (6 steps)	Computer Systems and Networks 2 (5 steps)	Digital Citizenship 2 (4 steps) Unplugged	Programming 2 (5 steps)	Creating Media 2 (5 steps)	Artificial Intelligence 1 (4 steps) Unplugged
LKS2	**Year 3**	Digital Citizenship 3 (4 steps) Unplugged	Computer Systems and Networks 3 (5 steps)	Digital Foundations 3 (6 steps)	Programming 3 (5 steps)	Creating Media 3 (4 steps)	Data and Information 2 (5 steps)
	Year 4	Digital Foundations 4 (6 steps)	Computer Systems and Networks 4 (5 steps)	Digital Citizenship 4 (5 steps) Unplugged	Physical Computing 2 (5 steps)	Creating Media 4 (4 steps)	Artificial Intelligence 2 (4 steps) Unplugged
UKS2	**Year 5**	Digital Foundations 5 (6 steps)	Computer Systems and Networks 5 (5 steps)	Digital Citizenship 5 (6 steps) Unplugged	Programming 4 (5 steps)	Creating Media 5 (5 steps)	Data and Information 3 (6 steps)
	Year 6	Digital Foundations 6 (6 steps)	Computer Systems and Networks 6 (5 steps)	Digital Citizenship 6 (5 steps)	Physical Computing 3 (5 steps)	Creating Media 6A (5 steps)	Artificial Intelligence 3 (6 steps) Unplugged

Computing Strands

Digital Foundations			Computer Systems and Networks			Digital Citizenship			Programming		
Digital Foundations is designed to give children the essential computing foundational knowledge and skills required on their primary computing journey. This strand helps children develop and consolidate their understanding of technology and digital devices, operating systems, mouse and keyboard skills, icons and symbols and creating digital artefacts.			Computer Systems and Networks is designed to help children understand what technology is, how it works and how it connects us. Throughout this strand, children explore what technology is and its uses, how devices, computer systems and networks connect and operate and how information is shared and stored. The strand also explores the benefits and risks of online systems and safe, responsible technology use, building a strong foundation for understanding the digital world around them.			Digital Citizenship is designed to support children in using technology safely and navigating the digital world responsibly. This strand develops children's understanding of appropriate online behaviour, digital footprints and the benefits and risks of online activities, content and communities. Critical thinking skills are developed as children learn to evaluate and question the reliability of online content.			Programming is designed to introduce children to the key concepts of coding and computational thinking. Throughout this strand, children develop an understanding of algorithms, progressing from unplugged activities to block-based coding. Key coding concepts, such as sequencing, repetition, selection and variables are introduced, while developing problem-solving skills, building a solid foundation for future programming.		
KS1	LKS2	UKS2	KS1	LKS2	UKS2	KS1	LKS2	UKS2	KS1	LKS2	UKS2
2 Units	2 Units	2 Units	2 Units	2 Units	2 Units	2 Units	2 Units	2 Units	2 Units	1 Unit	1 Unit

Physical Computing			Creating Media			Data and Information			Artificial Intelligence		
Physical Computing is designed to introduce children to programming through the use of physical devices. Throughout this strand, children create and test algorithms and programs, deepening their understanding of key coding concepts and their application in the physical world.			Creating Media is designed to develop children's digital artefacts creation skills. This strand teaches children how to create digital art, format text and images, create simple animations, record and edit audio and video content and create interactive presentations. Children consider the purpose and audience of the content they create and how this relates to design choices, ethical considerations and online safety.			Data and Information is designed to provide children with the foundational knowledge and skills for gathering and understanding data. This strand teaches children to collect, organise and represent data in order to interpret, analyse and present the information to answer questions and solve problems.			Artificial Intelligence is designed to introduce children to how AI technologies work. This strand develops children's awareness and understanding of what machines and AI systems are, how generative AI models use pattern recognition to generate decisions and the fairness of how data is sourced and used. Children apply their critical thinking skills to evaluate the ethical concerns around how AI systems are designed and how they might impact society in the future.		
KS1	LKS2	UKS2	KS1	LKS2	UKS2	KS1	LKS2	UKS2	KS1	LKS2	UKS2
1 Unit	1 Unit	1 Unit	2 Units	2 Units	3 Units	1 Unit	1 Unit	1 Unit	1 Unit	1 Unit	1 Unit

The National Curriculum for Computing

	KS1	KS2
Computer Science	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	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
Information Technology	Use technology purposefully to create, organise, store, manipulate and retrieve digital content	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
Digital Literacy (including E-Safety)	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	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

National Curriculum Coverage within Digital Sparks

Key Stage 1	National Curriculum Attainment Target					
	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
Digital Foundations 1						
Digital Foundations 2						
Digital Citizenship 1						
Digital Citizenship 2						
Computer Systems and Networks 1						
Computer Systems and Networks 2						
Creating Media 1						
Creating Media 2						
Data and Information 1						
Programming 1						
Programming 2						
Physical Computing 1						
Artificial Intelligence 1						

National Curriculum Coverage within Digital Sparks

Lower Key Stage 2	National Curriculum Attainment Target						
	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
Digital Foundations 3							
Digital Foundations 4							
Digital Citizenship 3							
Digital Citizenship 4							
Computer Systems and Networks 3							
Computer Systems and Networks 4							
Creating Media 3							
Creating Media 4							
Data and Information 2							
Programming 3							
Physical Computing 2							
Artificial Intelligence 2							

National Curriculum Coverage within Digital Sparks

Upper Key Stage 2	National Curriculum Attainment Target						
	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
Digital Foundations 5							
Digital Foundations 6							
Digital Citizenship 5							
Digital Citizenship 6							
Computer Systems and Networks 5							
Computer Systems and Networks 6							
Creating Media 5							
Creating Media 6							
Creating Media 6A							
Data and Information 3							
Programming 4							
Physical Computing 3							
Artificial Intelligence 3							