Computing

At Ellistown, our computing curriculum is designed to provide rich, broad learning experiences that balance all aspects of computing. Our computing curriculum will allow pupils to take part in high-quality, aspirational sequence of lessons. With technology playing such a significant role in society today, we believe 'Computational Thinking' is a skill children must be taught if they are to be able to participate effectivity and safety in the digital world. We teach a curriculum which enables children to become effective users of technology who can:

- Program
- Think logically
- Create content
- Problem solve
- Communicate
- Search

They will be equipped, not only with the skills and knowledge to use technology effectively and for their own benefit, but more importantly- safely. Children need to understand the consequences when using the internet and be aware of how they can keep themselves safe online.

When planning and teaching computing at Ellistown, we believe that computing is an essential part of the curriculum; a subject that not only stands alone but is embedded and should be an integral part of all learning. Computing within school provides a wealth of learning opportunities and transferrable skills. These transferrable skills ensure that children become digitally literate so that they are able to express themselves and develop their ideas through information and computer technology- at a level suitable for future workplace.

	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6
Year 1	We are Treasure Hunters	We are TV Chefs	We are Painters	We are Collectors	We are Story Tellers	We are Celebrating
Year 2	We are Astronauts	We are Game Testers	We are Photographers	We are Researchers	We are Detectives	We are Zoologists
Year 3	We are Programmers	We are Bug Fixers	We are Presenters	We are Network Engineers	We are Communicators	We are Opinion Pollsters
Year 4	We are Software Developers	We are Toy Designers	We are Musicians	We are HTML Editors	We are Co-Authors	We are Meteorologists
Year 5	We are Game Developers	We are Cryptographers	We are Artists	We are Web Developers	We are Bloggers	We are Architects
Year 6	We are App Planners	We are Project Managers	We are Market Researchers	We are Interface Designers	We are App Developers	We are Marketers

Coverage of the National Curriculum for Computing

	EYFS	KS1	KS2
Problem Solver		Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions	design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
Programmer	Create and debug simple programs	Create and debug simple programs	use sequence, selection, and repetition in programs; work with variables and various forms of input and output
Logical Thinker		Use logical reasoning to predict the behaviour of simple programs	Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
Communicator			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
Searcher			Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
Content Creator		Use technology purposefully to create, organise, store, manipulate and retrieve 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
E-Safety	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 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 technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact
Beyond School	Recognise common uses of information technology beyond school	Recognise common uses of information technology beyond school	

Ellistown Computing Knowledge and Skills Progression

Key Concepts in Computing

Problem Solver	Programmer	Logical Thinker	Communicator	Searcher	Content Creator	E-Safety	Beyond School

	1	2	3	4 Safer Internet Day	5	6
Autumn 1	**We are Treasure Hunters** Hunting for treasure Recording an algorithm Introducing a robot Introduction to programming Programming the robot to find treasure Debugging	**We are Astronauts** Being playground astronauts Using turtles in space Creating sprites and backgrounds Programming a spaceship Moving from one planet to another Moving between 3 planets	**We are Programmers** Learning about animations Creating a storyboard Creating characters and backgrounds Starting to animate the characters Adding sound to the animations Reviewing and improving the animations	**We are Software Developers** Playing and analyzing educational games Building a game prototype Adding in repetition and keeping track working on the interface Building in progression Testing and refining	**We are Game Developers** Planning a game Creating and sourcing assets Creating a prototype of the game Debugging the game script Testing the game Writing instructions Publishing the game	**We are App Planners** Researching the capabilities of a smart phone Working with location data Finding a problem to solve with an app Researching the competition Creating a presentation to pitch the app Delivering a pitch to a panel
Autumn 2	**We are TV Chefs** Investigating recipes and TV cookery programmes Programming a sandwich making robot Developing a recipe Practising with the camera Filming a recipe video Editing and reviewing	**We are Game Testers** Addition race Eating fish Tennis for two Duck shoot More complex games Show and tell	**We are Bug Fixers** Spotting and correcting off by one bugs Spotting and correcting performance bugs Spotting and correcting multi-thread bugs Spotting and correcting conceptual bugs Spotting and correcting arithmetical book Spotting and correcting resource bugs	**We are Toy Designers** Finding out about inputs and outputs Design a toy Designing a toy in scratch Programming the toy simulation Testing and improving the toy simulation Pitching the toy	**We are Cryptographers** Transmitting information in Semaphore Using Morse code Using Caesar cipher to create and crack codes Substitution ciphers and frequency analysis Password security Security on the web	**We are Project Managers** Scoping the project Identifying and developing talent in teams Planning tasks and estimating time Planning how the project will be resources Sourcing materials for the development of the app Ensuring quality
Spring 1	**We are Painters** Looking at illustrations Planning illustrations Creating and storing illustrations Retrieving and manipulating illustrations Making an e-book Reviewing e-books	**We are Photographers** Looking at photos Learning about the camera Taking photos Organising photos Editing and enhancing photos Presenting a portfolio	**We are Presenters** Reviewing sports TV working with video camera Shooting the videos Editing the videos Improving the videos Evaluating the videos	**We are Musicians** Introduction Making a start with sequencing Recording samples Working with samples Reviewing our work performance	**We are Artists** Creating simple tessellations using Inkscape Creating complex tessellations using Inkscape programming isalmic style art in scratch Using Inkscape to create art (Bridget Riley) Creating computer generated landscapes	**We are Market Researchers** Creating a survey to find out information Collecting analyzing survey results Planning interviews Running interviews or focus groups Analysing interview information Processing findings

Ellistown History Knowledge and Skills Progression

Key Concepts in Computing

Problem Solver | Programmer | Logical Thinker | Communicator | Searcher | Content Creator | E-Safety | Beyond School

	1	2	3	4 Safer Internet Day	5	6
Spring 2	**We are Collectors** Searching for animal pictures Collecting fish organising birds into two groups Grouping insects and minibeasts Sorting mammals Guess the animal	**We are Researchers** Scoping a topic and breaking down questions Looking for information Searching safely and effectively (Google) Using other search engines (Wiki) Preparing a presentation Giving a presentation	**We are Network Engineers** Physical and wireless connections Passing messages across networks Testing network connections Getting from here to there From names to numbers Implications for safety	**We are HTML Editors** Learning about the web Editing HTML in webpages First steps with HTML HTML projects Making a new webpage Developing and refining	**We are Web Developers** Planning the website Learning how search works Curating website content Adding media to the website Review and improve the website Publishing the website	**We are Interface Designers** Sketching ideas for an app interface Planning screens Developing the app interface Considering accessibility when designing the app Sourcing media assets Documenting the process
Summer 1	**We are Story Tellers** Listening to audio books Planning an audio book Practising with the audio recorder Recording sound effects Recording the story Reviewing work	**We are Detectives** Reading a replying to emails Working email attachments Composing emails Organising information Setting out a case Reviewing and reflecting	**We are Communicators** Planning the project Learning how emails work Using emails safely Working with attachments Developing the joint presentations Sharing presentations in a video conference	**We are Co-Authors** Planning the content for a wiki Using Wikipedia Getting started with the class wiki Editing the wiki pages Editing Wikipedia	**We are Bloggers** Finding out what makes a good blog Writing a blog post Commenting on blog posts Adding images to blog posts Working with media Live blogging	**We are App Developers** Toolkit for developing the app Assembling the assets for the app Establishing the algorithms Coding Debugging and refining Testing and reviewing
Summer 2	**We are Celebrating** Researching cards Practising with the keyboard Working with text Creating images Combing text and images Reviewing the cards	**We are Zoologists** Briefing and preparation Bug hunting Working with photos Working with data Working with maps Summary and review	**We are Opinion Pollsters** planning the survey developing questions Crating the online survey Collecting data Analysing and evaluating data Presenting data	**We are Meteorologists** Describing and measuring the weathers Recording the weather Analysing the data Photo collections and predicting the weather Preparing the weather forecast Giving a TV style weather forecast	**We are Architects** Exploring art galleries Creating a virtual sculpture Getting started with the gallery Adding furniture to the gallery Hanging art Creating a virtual tour of the gallery	We are Marketers Creating a clear sales message for the app Creating a flyer for the app Developing a website for the app Refining the app website Shooting video Editing video