

Computing Policy

Introduction

Computing is a foundation subject in the National Curriculum. This policy outlines the intent of computing at Ellingham and implementation is the responsibility of all teaching staff, overseen by the co-ordinator.

Intent

At Ellingham, we aim to provide children with a stimulating, high-quality computing curriculum that addresses the challenges and opportunities offered by the technologically rich world we live in, preparing them for jobs of the future. Computing skills are a major factor in enabling children to be confident, creative, resilient and independent learners and it is our intention that children have every opportunity available to allow them to achieve this through regular computing lessons. 'Computational Thinking' is a skill children must be taught in order to provide them with essential knowledge and skills that will enable them to participate effectively in the digital world. Children will understand how computers work, how computing systems work and how they are designed and programmed. Through regular teaching of E-safety, we strive for all our children to be responsible, respectful members of the community and empower them to use technology safely and independently.

The new national curriculum defines three clear aspects of the computing curriculum: Computer Science, Information Technology and Digital Literacy. At Ellingham, children will be given the opportunity to develop their knowledge and understanding in each area from the Foundation Stage to Year 6.

The aims of teaching Computing, as outlined in the national curriculum are 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

Whole School Overview - Units

Year group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
2-3 year olds Units will cover the following knowledge and skills:	<ul style="list-style-type: none"> Shows interest in toys with buttons, flaps and simple mechanisms and beginning to learn to operate them. Seeks to acquire basic skills in turning on and operating some basic ICT equipment. Operates mechanical toys, e.g. turns the knob on a wind-up toy or pulls back on a friction car. 					
3-4 year olds Units will cover the following knowledge and skills:	<p>Knows how to operate simple equipment, e.g. turns on CD</p> <p>Shows an interest in technological toys with knobs or pulleys</p> <p>Shows an interest in real objects such as cameras or mobile phones</p> <p>Use on/off switches presses buttons for sound and movement</p>	<p>Shows skill in making toys work by pressing parts to achieve effects such as sound, movements or new images.</p> <p>Shows skill in making toys work by lifting flaps to achieve effects such as sound, movements or new images.</p>	<p>Knows that information can be retrieved from computers</p> <p>Find out about and identify uses of everyday technology and use information and communication technology and programmable toys to support learning.</p> <p>Plays with technological toy</p>			
Reception Units will cover the following knowledge and skills:	<p>Using technology for a purpose e.g. phoning a number</p>		<p>Operate a programmable toy</p> <p>Know that you get information from the computer</p>		<p>Click on different icons and complete a programme</p> <p>Use simple mouse and keyboard skills e.g. type own name</p>	
1	<p>E-safety – why is it important to stay safe online? How do we stay safe online?</p> <p>Beginning to understand algorithms and coding</p>	<p>Beginning to log on and understand our usernames and passwords.</p> <p>JiT Code – in simple form lesson 1-4 last two weeks making their own.</p>	<p>Google Slides. Exploring Google Drive and learning basic presentation skills.</p>	<p>JiT J2s infant tools - Painting and Speaking (saving)</p>	<p>JiT J2s infant tools - Animate (using template)</p>	<p>JiT J2s infant tools - Animate and Mix (information)</p>

2	E-safety; Passwords Using the new website; Spellodrome and Bug club	JiT Code – in advanced form lesson 1-4. To focus on decoding and debugging- last two weeks making their own.	Google Slides. Exploring Google Drive and learning basic presentation skills.	JiT J2s infant tools - Charts Healthy living	JiT J2s infant tools - Animate Moving indent and adding sound effects made with percussion	JiT J2s infant tools/2simple 2question Finding hot/cold holiday preference
3	E-safety; Scratch – programming	Lessons 1, 2, 3 and 4 of J2Code (Years 3/4 planning)	Google Slides. Exploring Google Drive, learning research and basic presentation skills.	Scratch	We Video– instructional video	Learning to use Audacity
4	E-safety- twinkl planning Research skills revisiting word / websites/	Lessons 3 and 4 of J2Code (Years 3/4 planning) Scratch Online for remaining weeks.	Google Slides. Exploring Google Drive, learning research and presentation skills.	Moviemaker	Office - curriculum based	Kodu - robots
5	E-safety- Morals of misusing the internet, photoshopping, comments online, Research skills cross-curricular with history	Lessons 1, 2, 3 and 4 of J2Code (Years 5/6 planning)	Google Slides. Exploring Google Drive, learning more advanced research and presentation skills.	Movie Making	Networking - internet and world wide web	Kodu - robots
6	E safety Using technology safely, respectfully and	Lessons 3 and 4 of J2Code (Years 5/6 planning) Scratch Online for	Google Slides. Exploring Google Drive, learning more advanced research and presentation skills.	Digital Literacy and ICT	Digital literacy and ICT Looking at code and how we use it in	Digital literacy and ICT Writing out code using technical

	responsibly, recognise acceptable and unacceptable behaviour and identify a range of ways to report concerns about content and contact.	remaining weeks.		<p>Searching for specific images/content.</p> <p>Searching for an image in class on the internet – who and how will it be found? Refining search criteria.</p>	today's society.	coding language.
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Whole School Overview – Skills and Knowledge Progression – To be updated throughout 2019 / 2020

Year group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
2-3 years	<ul style="list-style-type: none"> Shows interest in toys with buttons, flaps and simple mechanisms and beginning to learn to operate them. Seeks to acquire basic skills in turning on and operating some basic ICT equipment. Operates mechanical toys, e.g. turns the knob on a wind-up toy or pulls back on a friction car. 					
3-4 years	<p>Knows how to operate simple equipment, e.g. turns on CD</p> <p>Shows an interest in technological toys with knobs or pulleys</p> <p>Shows an interest in real objects such as cameras or mobile phones</p> <p>Use on/off switches presses buttons for sound and movement</p>	<p>Shows skill in making toys work by pressing parts to achieve effects such as sound, movements or new images.</p> <p>Shows skill in making toys work by lifting flaps to achieve effects such as sound, movements or new images.</p>	<p>Knows that information can be retrieved from computers</p> <p>Find out about and identify uses of everyday technology and use information and communication technology and programmable toys to support learning.</p> <p>Plays with technological toy</p>			
Reception	Using technology for a purpose e.g. phoning a number		Operate a programmable toy		Click on different icons and complete a programme	
	Know that you get information from the computer		Use simple mouse and keyboard skills e.g. type own name			
1	(DL) Use technology safely	(CS) Understand what algorithms are	(IT) Use technology purposefully to create, store and retrieve digital content			
	Keep personal information private	Create simple programs				
	Recognise common uses of information technology beyond school					

2	<p>DL.1 Use technology respectfully</p> <p>DL.2 Identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies</p>	<p>CS.1 Understand that algorithms are implemented as programs on digital devices</p> <p>CS.2 Understand that programs execute by following precise and unambiguous instructions</p> <p>CS.3 Debug simple programs</p> <p>CS.4 Use logical reasoning to predict the behaviour of simple programs</p>	<p>IT.1 Use technology purposefully to organise digital content</p> <p>IT.2 Use technology purposefully to manipulate digital content</p>			
3	<p>DL. Use technology responsibly</p> <p>Identify a range of ways to report concerns about contact</p>	<p>CS. Write programs that accomplish specific goals</p> <p>Start to use sequence in programs,</p> <p>Start to work with various forms of input and output</p>	<p>IT. Use search technologies effectively</p> <p>Use a variety of software appropriately</p> <p>Collect information</p> <p>Design and create content</p> <p>Present information</p>			
4	<p>DL. Use technology responsibly</p> <p>Identify a range of ways to report concerns about contact and be able to articulate these</p>	<p>CS. Write programs that accomplish specific goals</p> <p>Use sequence in programs</p> <p>Work with various forms of input</p> <p>Work with various forms of output</p>	<p>IT. Use search technologies effectively</p> <p>Use a variety of software to accomplish given goals</p> <p>Collect information in the most appropriate means</p>			

			<p>Design and create and improve content</p> <p>Choose most appropriate way to present information</p>			
5	<p>DL. Understand the opportunities computer networks offer for communication</p> <p>DL. Use technology responsibly Identify a range of ways to report concerns about contact and be able to articulate these and recognise acceptable/unacceptable behaviour</p>	<p>CS. Design programs that accomplish specific goals</p> <p>Design and create programs</p> <p>Debug programs that accomplish specific goals</p> <p>Use repetition in programs</p> <p>Control or simulate physical systems</p> <p>Use logical reasoning to detect and correct errors in programs</p> <p>Understand how computer networks can provide multiple services, such as the World Wide Web</p> <p>Appreciate how search results are selected</p> <p>Design programs that accomplish specific goals</p>	<p>IT. Select a variety of software to accomplish given goals</p> <p>Analyse information</p> <p>Evaluate information</p> <p>Collect data</p> <p>Present data</p> <p>Select, use and combine internet services</p>			
6	<p>DL. Understand the opportunities computer networks offer</p>	<p>CS. Solve problems by decomposing them into smaller parts</p>	<p>IT. Combine a variety of software to accomplish given goals</p>			

	for collaboration Be discerning in evaluating digital content	Use selection in programs Work with variables Use logical reasoning to explain how some simple algorithms work Use logical reasoning to detect and correct errors in algorithms Understand computer networks, including the internet Appreciate how search results are ranked	Analyse data Evaluate data Design and create systems			
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Planning, assessment and monitoring

The development of computing knowledge, understanding and skills are continually assessed through planning, teaching and reviewing.

- When using internet services to communicate and collaborate, make explicit reference to how this should be done safely and responsibly
- When teaching programming, set progressively difficult problems that children have to solve in pairs, small groups as well as independently
- Plan for an integrated approach to the subject, especially for the KS1 and lower KS2
- Formative assessment needs to be part of any computing teaching. Examples of this are peer assessment or self-assessment against agreed criteria.
- Summative assessment should be carried out against the computing curriculum content statements for KS1 and KS2. This is a simple record of pupils who have learnt the content and those who have not.