

***Durweston CE VA Primary School***

***Computing  
Policy,  
Programme and  
Plan***

*Feed the mind, nurture the spirit, free the imagination!*

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Governors are mindful of their duties under the Equality Act 2010 and have screened this document to ensure compliance with the law

### Intent

Our aims at Durweston align with those of the National Curriculum. We want to ensure that all our pupils:

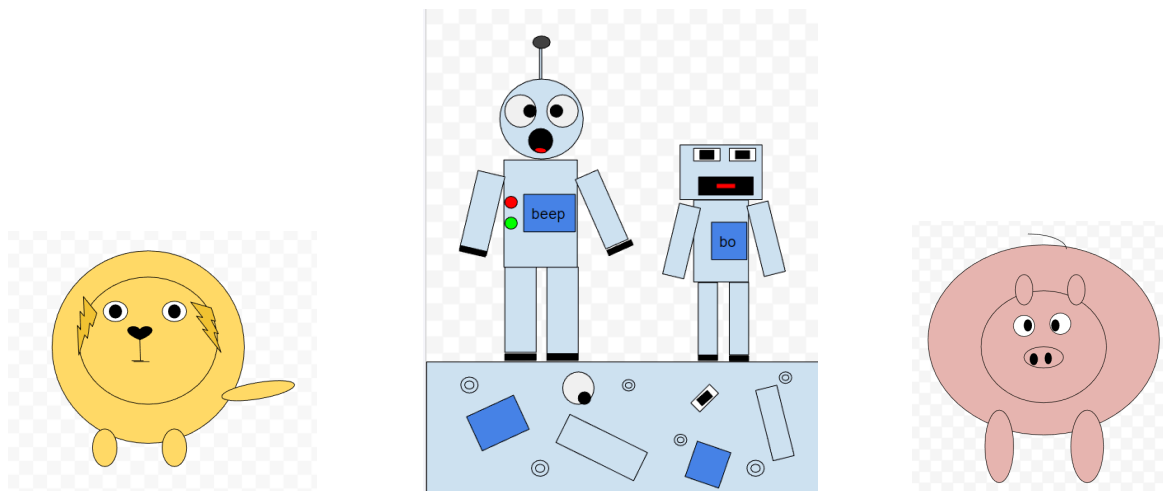
- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- 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.

### Equality, Diversity and Inclusion

Our curriculum planning ensures regular, progressive access to Computing for all children irrespective of gender, race, creed or disability.

We recognise the fact that we have children of differing ability in all our classes, and we provide suitable learning opportunities for all by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies:

- setting tasks that are open-ended and can have a variety of responses;
- setting tasks of increasing difficulty, where not all children complete all tasks;
- providing a range of challenges with different resources;
- having more adults support the work of individual children or small groups



*Vector Drawings*

**Implementation**

Our planning is organised into a 2-year rolling that ensures coverage of the National Curriculum over our mixed-age classes

		Starfish	Dolphins	Seahorses	Sharks	Porpoises
Year A	Autumn	Computing systems and networks - technology around us	Digital Citizenship - online safety Touch Typing Computing systems and networks - technology around us	Digital Citizenship - Online Safety Touch Typing	Digital Citizenship - Online Safety Touch Typing Computing systems and networks - Connecting computers	Digital Citizenship - Online Safety Touch Typing
	Spring	Creating media - Digital painting	Creating media - digital painting Programming - moving a robot	Creating media - Making music Programming - Programming quizzes	Programming - Repetition in shapes Data and information - Data logging	Creating Media - Webpage creation Computing systems and networks - Sharing information
	Summer	Programming A - Moving a robot	Data and information - grouping data Creating media - digital writing	Creating media - Stop-frame animation Programming - Sequencing sounds	Creating media - Photo editing Programming - Repetition in games	Programming - Variables in games
Year B	Autumn	Computing systems and networks - technology around us	Digital Citizenship - Online Safety Touch Typing Programming - programming animations	Digital Citizenship - Online Safety Touch Typing	Digital Citizenship - Online Safety Touch Typing Computing systems and networks - The internet	Digital Citizenship - Online Safety Touch Typing
	Spring	Creating media - Digital painting	Computing systems and networks - information technology around us Creating media - digital photography	Data and information - Branching databases Creating media - Desktop publishing	Creating media - Video editing Data and information - Flat-file databases	Data and Information - Introduction to spreadsheets Computing systems and networks - Internet communication

	Summer	Programming A - Moving a robot	Programming - robot algorithms Data and information - pictograms	Programming - Events and actions in programs Creating Media - Audio editing	Creating media - Vector drawing Programming - Selection in quizzes	Creating Media - 3D modelling
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**EYFS**

Despite computing not being explicitly mentioned within the Early Years Foundation Stage (EYFS) statutory framework, there are opportunities within each area of the framework to enable practitioners to effectively prepare children for studying the computing curriculum as well as developing their ability to use computational thinking effectively. As young children take part in a variety of tasks with digital devices, such as moving a Bee Bot around a classroom, they will already be familiar with the device before being asked to undertake tasks related to the key stage one computing curriculum, such as writing and testing a simple program. Not only will children be keen to again use a device they had previously enjoyed using, their cognitive load will also be reduced, meaning they are more likely to succeed when undertaking activities linked to the next stage in their learning.

The September 2020 release of Development Matters outlines how effective teaching and learning gives children the opportunity to play and explore, participate in active learning and create and think critically. The activities included in our Computing curriculum below have therefore been included to meet these criteria where feasible although many other opportunities exist to use technology with younger children; particularly when linked to a topic studied within class.

**Retention of Learning**

We support pupils in the acquisition of knowledge, through the use of key concepts, terms, and vocabulary, providing opportunities to build a shared and consistent understanding. Glossaries, concept maps, and displays, along with regular recall and revision, support this approach.

**Impact**

Ongoing assessment of the children’s retention of key knowledge is integral to teaching and learning in Computing. Teachers plan opportunities to revisit and revise the key knowledge covered across a unit of work and from units taught in previous terms or years. Key knowledge is displayed on the class knowledge map and used as a tool to aid recall across a unit and beyond. This, plus observations made during the year, inform future planning and enable the teacher to assess progress against our Progression Map (Appendix 3). Each term, teachers input Computing assessment data onto Insight.

### **Homework**

Each class teacher produces a sheet of activities linked to the topic for the children to complete at home. At the end of term, these are shared in Open Afternoon or morning.

### **Resources**

All planning resources are hyperlinked in the appendix. We currently have enough chromebooks for at least one between two children and ipads for web-based research. We also have Beebots and maps that can be used by all classes.

## Curriculum Design

The Teach Computing Curriculum which is hyperlinked in Appendix 2 is structured in units. For these units to be coherent, the lessons within a unit must be taught in order. However, across a year group, the units themselves do not need to be taught in order, with the exception of 'Programming' units, where concepts and skills rely on prior learning and experiences.

The Teach Computing Curriculum uses the National Centre for Computing Education's computing taxonomy to ensure comprehensive coverage of the subject. This has been developed through a thorough review of the KS1–4 computing programme of study, and the GCSE and A level computer science specifications across all awarding bodies. All learning outcomes can be described through a high-level taxonomy of ten strands, ordered alphabetically as follows:

- Algorithms — Be able to comprehend, design, create, and evaluate algorithms
- Computer networks — Understand how networks can be used to retrieve and share information, and how they come with associated risks
- Computer systems — Understand what a computer is, and how its constituent parts function together as a whole
- Creating media — Select and create a range of media including text, images, sounds, and video
- Data and information — Understand how data is stored, organised, and used to represent real-world artefacts and scenarios
- Design and development — Understand the activities involved in planning, creating, and evaluating computing artefacts
- Effective use of tools — Use software tools to support computing work
- Impact of technology — Understand how individuals, systems, and society as a whole interact with computer systems
- Programming — Create software to allow computers to solve problems
- Safety and security — Understand risks when using technology, and how to protect individuals and systems

Appendix 3 outlines the progression of the Computing disciplines named above. The units for key stages 1 and 2 are based on a spiral curriculum. This means that each of the themes is revisited regularly (at least once in each year group), and pupils revisit each theme through a new unit that consolidates and builds on prior learning within that theme. This style of curriculum design reduces the amount of knowledge lost through forgetting, as topics are revisited yearly. It also ensures that connections are made even if different teachers are teaching the units within a theme in consecutive years.

## Computing Pedagogy

**Lead with concepts**  
Support pupils in the acquisition of knowledge, through the use of key concepts, terms, and vocabulary, providing opportunities to build a shared and consistent understanding. Glossaries, concept maps, and displays, along with regular recall and revision, can support this approach.

**Work together**  
Encourage collaboration, specifically using pair programming and peer instruction, and also structured group tasks. Working together stimulates classroom dialogue, articulation of concepts, and development of shared understanding.

**Get hands-on**  
Use physical computing and making activities that offer tactile and sensory experiences to enhance learning. Combining electronics and programming with arts and crafts (especially through exploratory projects) provides pupils with a creative, engaging context to explore and apply computing concepts.

**Unplug, unpack, repack**  
Teach new concepts by first unpacking complex terms and ideas, exploring these ideas in unplugged and familiar contexts, then repacking this new understanding into the original concept. This approach (semantic waves) can help pupils develop a secure understanding of complex concepts.

**Model everything**  
Model processes or practices – everything from debugging code to binary number conversions – using techniques such as worked examples and live coding. Modelling is particularly beneficial to novices, providing scaffolding that can be gradually taken away.

**Foster program comprehension**  
Use a variety of activities to consolidate knowledge and understanding of the function and structure of programs, including debugging, tracing, and Parson's Problems. Regular comprehension activities will help secure understanding and build connections with new knowledge.

**Create projects**  
Use project-based learning activities to provide pupils with the opportunity to apply and consolidate their knowledge and understanding. Design is an important, often overlooked aspect of computing. Pupils can consider how to develop an artefact for a particular user or function, and evaluate it against a set of criteria.

**Add variety**  
Provide activities with different levels of direction, scaffolding, and support that promote active learning, ranging from highly structured to more exploratory tasks. Adapting your instruction to suit different objectives will help keep all pupils engaged and encourage greater independence.

**Make concrete**  
Bring abstract concepts to life with real-world, contextual examples and a focus on interdependencies with other curriculum subjects. This can be achieved through the use of unplugged activities, proposing analogies, storytelling around concepts, and finding examples of the concepts in pupils' lives.

**Challenge misconceptions**  
Use formative questioning to uncover misconceptions and adapt teaching to address them as they occur. Awareness of common misconceptions alongside discussion, concept mapping, peer instruction, or simple quizzes can help identify areas of confusion.

**Structure lessons**  
Use supportive frameworks when planning lessons, such as PRIMM (Predict, Run, Investigate, Modify, Make) and Use-Modify-Create. These frameworks are based on research and ensure that differentiation can be built in at various stages of the lesson.

**Read and explore code first**  
When teaching programming, focus first on code 'reading' activities, before code writing. With both block-based and text-based programming, encourage pupils to review and interpret blocks of code. Research has shown that being able to read, trace, and explain code augments pupils' ability to write code.

**Find out more about our principles and add some or all to your personal pedagogy toolkit.**

[nccce.io/pedagogy](https://nccce.io/pedagogy)

## Monitoring and review

The co-ordination of the Computing curriculum is the responsibility of the Computing subject leader. Each term, the subject leader will monitor planning to make sure it follows the long-term plan and support colleagues in their teaching. They will support class teachers in the preparation and sourcing of resources. At the end of the year, they will evaluate each unit taught with class teachers and speak to pupils about their computing experiences in order to inform future planning.

Appendix 1 Computing Coverage Record Sheet.

		Starfish	Dolphins	Seahorses	Sharks	Porpoises
Year A	Autumn	<b>Computing systems and networks</b> - technology around us	<b>Digital Citizenship</b> - online safety <b>Touch Typing</b> <b>Computing systems and networks</b> - technology around us	<b>Digital Citizenship</b> - Online Safety <b>Touch Typing</b>	<b>Digital Citizenship</b> - Online Safety <b>Touch Typing</b> <b>Computing systems and networks</b> - Connecting computers	<b>Digital Citizenship</b> - Online Safety <b>Touch Typing</b>
	Spring	<b>Creating media</b> - Digital painting	<b>Creating media</b> - digital painting <b>Programming</b> - moving a robot	<b>Creating media</b> - Making music <b>Programming</b> - Programming quizzes	<b>Programming</b> - Repetition in shapes <b>Data and information</b> - Data logging	<b>Creating Media</b> - Webpage creation <b>Computing systems and networks</b> - Sharing information
	Summer	<b>Programming A</b> - Moving a robot	<b>Data and information</b> - grouping data <b>Creating media</b> - digital writing	<b>Creating media</b> - Stop-frame animation <b>Programming</b> - Sequencing sounds	<b>Creating media</b> - Photo editing <b>Programming</b> - Repetition in games	<b>Programming</b> - Variables in games
Year B	Autumn	<b>Computing systems and networks</b> - technology around us	<b>Digital Citizenship</b> - Online Safety <b>Touch Typing</b> <b>Programming</b> - programming animations	<b>Digital Citizenship</b> - Online Safety <b>Touch Typing</b>	<b>Digital Citizenship</b> - Online Safety <b>Touch Typing</b> <b>Computing systems and networks</b> - The internet	<b>Digital Citizenship</b> - Online Safety <b>Touch Typing</b>
	Spring	<b>Creating media</b> - Digital painting	<b>Computing systems and networks</b> - information technology around us <b>Creating media</b> - digital photography	<b>Data and information</b> - Branching databases <b>Creating media</b> - Desktop publishing	<b>Creating media</b> - Video editing <b>Data and information</b> - Flat-file databases	<b>Data and Information</b> - Introduction to spreadsheets <b>Computing systems and networks</b> - Internet communication
	Summer	<b>Programming A</b> - Moving a robot	<b>Programming</b> - robot algorithms <b>Data and information</b> - pictograms	<b>Programming</b> - Events and actions in programs <b>Creating Media</b> - Audio editing	<b>Creating media</b> - Vector drawing <b>Programming</b> - Selection in quizzes	<b>Creating Media</b> - 3D modelling

**Appendix 2 - Scheme of Work**

**Early Years - HandyPaws Preschool and Starfish Reception Class**

Computing			
Three and Four-Year-Olds	Personal, Social and Emotional Development		<ul style="list-style-type: none"> <li>Increasingly follow rules, understanding why they are important.</li> </ul>
	Physical Development		<ul style="list-style-type: none"> <li>Match their developing physical skills to tasks and activities in the setting.</li> </ul>
	Understanding the World		<ul style="list-style-type: none"> <li>Explore how things work.</li> </ul>
Reception	Personal, Social and Emotional Development		<ul style="list-style-type: none"> <li>Show resilience and perseverance in the face of a challenge.</li> </ul>
	Physical Development		<ul style="list-style-type: none"> <li>Develop their small motor skills so that they can use a range of tools competently, safely and confidently.</li> <li>Know and talk about the different factors that support their overall health and wellbeing:                             <ul style="list-style-type: none"> <li>-sensible amounts of 'screen time'.</li> </ul> </li> </ul>
	Expressive Arts and Design		<ul style="list-style-type: none"> <li>Explore, use and refine a variety of artistic effects to express their ideas and feelings.</li> </ul>
ELG	Personal, Social and Emotional Development	Managing Self	<ul style="list-style-type: none"> <li>Be confident to try new activities and show independence, resilience and perseverance in the face of challenge.</li> <li>Explain the reasons for rules, know right from wrong and try to behave accordingly.</li> </ul>
	Expressive Arts and Design	Creating with Materials	<ul style="list-style-type: none"> <li>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</li> </ul>

Handy Paws (Pre-school) and Starfish (Reception)	
<b>Autumn</b> Year A and B	
<b>Computing systems and networks</b> <a href="#">Technology around us</a>	Recognising technology in school and using it responsibly.
<b>Spring</b> Year A and B	
<b>Creating media</b> <a href="#">Digital painting</a>	Choosing appropriate tools in a program to create art, and making comparisons with working non-digitally.
<b>Summer</b> Year A and B	
<b>Programming A</b> <a href="#">Moving a robot</a>	Writing short algorithms and programs for floor robots, and predicting program outcomes.

In **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.

<b>Dolphins</b>	Year A	Year B
Autumn 1	<p><b>Digital Citizenship</b>  <a href="#">Online Safety</a>                      Children learn about the potential dangers in the online world and what basic steps we all need to take in order to have positive digital experiences.  <b>Touch Typing - Ongoing rehearsal required</b>  <a href="#">Dance Mat Typing</a>                      Level 1, Stage 1: f d s a j k l ; g h</p>	
Autumn 2	<p><b>Computing systems and networks</b>  <a href="#">Technology around us</a>                      Recognising technology in school and using it responsibly.</p>	<p><b>Programming</b>  <a href="#">Programming animations</a>: Designing and programming the movement of a character on screen to tell stories.</p>
Spring 1	<p><b>Creating media</b>  <a href="#">Digital painting</a>: Choosing appropriate tools in a program to create art, and making comparisons with working non-digitally.</p>	<p><b>Computing systems and networks</b>  <a href="#">Information technology around us</a>: Identifying IT and how its responsible use improves our world in school and beyond.</p>
Spring 2	<p><b>Programming</b>  <a href="#">Moving a robot</a>: Writing short algorithms and programs for floor robots, and predicting program outcomes.</p>	<p><b>Creating media</b>  <a href="#">Digital photography</a>: Capturing and changing digital photographs for different purposes.</p>
Summer 1	<p><b>Data and information</b>  <a href="#">Grouping data</a>: Exploring object labels, then using them to sort and group objects by properties.</p>	<p><b>Programming</b>  <a href="#">Robot algorithms</a>: Creating and debugging programs, and using logical reasoning to make predictions.</p>
Summer 2	<p><b>Creating media</b>  <a href="#">Digital writing</a>: Using a computer to create and format text, before comparing to writing non-digitally</p>	<p><b>Data and information</b>  <a href="#">Pictograms</a>: Collecting data in tally charts and using attributes to organise and present data on a computer.</p>

Seahorses	Year A	Year B
Autumn 1	<b>Digital Citizenship</b> <a href="#">Online Safety</a> : children are introduced to email and other forms of online communication. They will look at how to write and send emails, as well as how to decide if an email is safe to open. The use and importance of privacy settings is introduced and children will discuss the types of information we should not share online. They will build on the idea of a digital footprint by thinking about how the adverts they see online are targeted at them.	<b>Digital Citizenship</b> <a href="#">Online Safety</a> : children learn about how what they do online leaves a trail called a digital footprint. They will look at how to improve the efficiency of their online searches, the types of websites that are best for children to access when looking for information, as well as how to identify inappropriate content and the actions they should take if they do.
Autumn 2	<b>Touch Typing - Ongoing rehearsal required</b> <a href="#">Dance Mat Typing</a> Level 1, Stage 2: e i and Stage 3: r u	
Spring 1	<b>Creating media</b> <a href="#">Making music</a> : Using a computer as a tool to explore rhythms and melodies, before creating a musical composition.	<b>Data and information</b> <a href="#">Branching databases</a> : Building and using branching databases to group objects using yes/no questions.
Spring 2	<b>Programming</b> <a href="#">Programming quizzes</a> : Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz.	<b>Creating media</b> <a href="#">Desktop publishing</a> : Creating documents by modifying text, images, and page layouts for a specified purpose.
Summer 1	<b>Creating media</b> <a href="#">Stop-frame animation</a> : Capturing and editing digital still images to produce a stop-frame animation that tells a story	<b>Programming</b> <a href="#">Events and actions in programs</a> : Writing algorithms and programs that use a range of events to trigger sequences of actions.
Summer 2	<b>Programming</b> <a href="#">Sequencing sounds</a> : Creating sequences in a block-based programming language to make music.	<b>Creating Media</b> <a href="#">Audio editing</a> : Capturing and editing audio to produce a podcast, ensuring that copyright is considered.

In **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.

Sharks	Year A	Year B
Autumn 1	<p><b>Digital Citizenship</b>  <a href="#">Online Safety</a>: children learn about preventing and dealing with cyberbullying; how to use search engines efficiently; how to avoid plagiarism online; and how to be a good digital citizen.  <b>Touch Typing - Ongoing rehearsal required</b>  <a href="#">Dance Mat Typing</a>                      Level 2, Stage 4: t y Stage 5: w o Stage 6: q p</p>	
Autumn 2	<p><b>Computing systems and networks</b>  <a href="#">Connecting computers</a>: Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks</p>	<p><b>Computing systems and networks</b>  <a href="#">The internet</a>: Recognising the internet as a network of networks including the WWW, and why we should evaluate online content</p>
Spring 1	<p><b>Programming</b>  <a href="#">Repetition in shapes</a>: Using a text-based programming language to explore count-controlled loops when drawing shapes.</p>	<p><b>Creating media</b>  <a href="#">Video editing</a>: Planning, capturing, and editing video to produce a short film.                      Photo editing: Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled.</p>
Spring 2	<p><b>Data and information</b>  <a href="#">Data logging</a>: Recognising how and why data is collected over time, before using data loggers to carry out an investigation.</p>	<p><b>Data and information</b>  <a href="#">Flat-file databases</a>: Using a database to order data and create charts to answer questions.</p>
Summer 1	<p><b>Creating media</b></p>	<p><b>Creating media</b></p>

	<a href="#">Photo editing</a> : Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled.	<a href="#">Vector drawing</a> : Creating images in a drawing program by using layers and groups of objects.
Summer 2	<b>Programming</b> <a href="#">Repetition in games</a> : Using a block-based programming language to explore count-controlled and infinite loops when creating a game.	<b>Programming</b> <a href="#">Selection in quizzes</a> : Exploring selection in programming to design and code an interactive quiz.

Porpoises	Year A	Year B
Autumn 1	<b>Digital Citizenship</b> <a href="#">Online Safety</a> : children will learn about email safety with a focus on preventing and dealing with spam. They will consider the importance of strong passwords and learn how to create them. Children will build on their knowledge of plagiarism and fair use of people’s work by learning how to write citations and references for websites they may use. They will scrutinise photographs that they see online and learn how easy it is to manipulate pictures and present them as reality.	<b>Digital Citizenship</b> <a href="#">Online Safety</a> : children will be introduced to the idea of the internet, as a type of media, and how it can shape our ideas about boys and girls through stereotypes. Children will be given ways to deal with online content that they find worrying or even believe to be dangerous.
Autumn 2	<b>Touch Typing - Ongoing rehearsal required</b> <a href="#">Dance Mat Typing</a> Level 2, Stage 4: t y Stage 5: w o Stage 6: q p	
Spring 1	<b>Creating Media</b> <a href="#">Webpage creation</a> : Designing and creating webpages, giving consideration to copyright, aesthetics, and navigation.	<b>Data and Information</b> <a href="#">Introduction to spreadsheets</a> : Answering questions by using spreadsheets to organise and calculate data.
Spring 2	<b>Computing systems and networks</b> <a href="#">Sharing information</a> : Identifying and exploring how information is shared between digital systems.	<b>Computing systems and networks</b> <a href="#">Internet communication</a> : Recognising how the WWW can be used to communicate and be searched to find information.
Summer 1	<b>Programming</b> <a href="#">Variables in games</a> : Learn what variables are, and relate them to real-world examples of values that can be set and changed.	<b>Creating Media</b> <a href="#">3D modelling</a> : Planning, developing, and evaluating 3D computer models of physical objects.
Summer 2		

Appendix 3 Computing Progression Document

# Progression

## Progression across key stages

All learning objectives have been mapped to the National Centre for Computing Education's taxonomy of ten strands, which ensures that units build on each other from one key stage to the next.

## Progression across year groups

Within the Teach Computing Curriculum, every year group learns through units within the same four themes, which combine the ten strands of the National Centre for Computing Education's taxonomy (see table, right).

This approach allows us to use the spiral curriculum approach (see the 'Spiral curriculum' section for more information) to progress skills and concepts from one year group to the next.

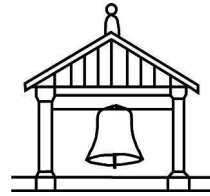
Primary themes	Computing systems and networks	Programming	Data and information	Creating media
Taxonomy strands	Computer systems	Programming	Data and information	Creating media
	Computer networks	Algorithms		Design and development
		Design and development		
	Effective use of tools			
	Impact of technology			
	Safety and security			



**Appendix 4 Building Blocks – how knowledge builds from EYFS to Year 6. Click on individual hyperlinks for a learning graph showing key concepts and skills.**

	Starfish	Dolphins	Seahorses	Sharks	Porpoises
Computer systems and networks	<p><a href="#">Technology around us</a> - Recognising technology in school and using it responsibly.</p>	<p><a href="#">Technology around us</a> - Recognising technology in school and using it responsibly.</p> <p><a href="#">Information technology around us</a> - Identifying IT and how its responsible use improves our world in school and beyond.</p>		<p><a href="#">Connecting computers</a> - Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks.</p> <p><a href="#">The internet</a> - Recognising the internet as a network of networks including the WWW, and why we should evaluate online content.</p>	<p><a href="#">Sharing information</a> - Identifying and exploring how data is transferred and information is shared online.</p> <p><a href="#">Internet communication</a> - Recognising IT systems around us and how they allow us to search the internet.</p>
Programming	<p><a href="#">Moving a robot</a> - Writing short algorithms and programs for floor robots, and predicting program outcomes.</p>	<p><a href="#">Moving a robot</a> - Writing short algorithms and programs for floor robots, and predicting program outcomes.</p> <p><a href="#">Robot algorithms</a> - Creating and debugging programs, and using logical reasoning to make predictions.</p> <p><a href="#">Programming animations</a> - Designing and programming the movement of a character on screen to tell stories.</p>	<p><a href="#">Programming quizzes</a> - Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz.</p> <p><a href="#">Sequencing sounds</a> - Creating sequences in a block-based programming language to make music.</p> <p><a href="#">Events and actions in programs</a></p>	<p><a href="#">Repetition in shapes</a> - Using a text-based programming language to explore count-controlled loops when drawing shapes.</p> <p><a href="#">Repetition in games</a> - Using a block-based programming language to explore count-controlled and infinite loops when creating a game.</p> <p><a href="#">Selection in quizzes</a> - Exploring selection in programming to design and code an interactive quiz.</p>	<p><a href="#">Variables in games</a> - Exploring variables when designing and coding a game.</p>

<p>Creating Media</p>	<p><a href="#">Digital painting</a> - Choosing appropriate tools in a program to create art, and making comparisons with working non-digitally.</p>	<p><a href="#">Digital painting</a> - Choosing appropriate tools in a program to create art, and making comparisons with working non-digitally.  <a href="#">Digital photography</a> - Capturing and changing digital photographs for different purposes.  <a href="#">Digital writing</a> - Using a computer to create and format text, before comparing to writing non-digitally</p>	<p><a href="#">Making music</a> - Collecting data in tally charts and using attributes to organise and present data on a computer.  <a href="#">Stop-frame animation</a> - Capturing and editing digital still images to produce a stop-frame animation that tells a story.  <a href="#">Desktop publishing</a> - Creating documents by modifying text, images, and page layouts for a specified purpose  <a href="#">Audio editing</a> - Capturing and editing audio to produce a podcast, ensuring that copyright is considered.</p>	<p><a href="#">Photo editing</a> - Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled.  <a href="#">Video editing</a> - Planning, capturing, and editing video to produce a short film.  <a href="#">Vector drawing</a> - Creating images in a drawing program by using layers and groups of objects.</p>	<p><a href="#">Webpage creation</a> - Designing and creating webpages, giving consideration to copyright, aesthetics, and navigation.  <a href="#">3d modelling</a> - Planning, developing, and evaluating 3D computer models of physical objects.</p>
<p>Data and Information</p>		<p><a href="#">Grouping data</a> - Writing short algorithms and programs for floor robots, and predicting program outcomes.  <a href="#">Pictograms</a> - Collecting data in tally charts and using attributes to organise and present data on a computer.</p>	<p><a href="#">Branching databases</a> - Building and using branching databases to group objects using yes/no questions.</p>	<p><a href="#">Data logging</a> - Recognising how and why data is collected over time, before using data loggers to carry out an investigation.  <a href="#">Flat-file databases</a> - Using a database to order data and create charts to answer questions.</p>	<p><a href="#">Introduction to spreadsheets</a> - Answering questions by using spreadsheets to organise and calculate data.</p>



*Durweston CE VA Primary School*

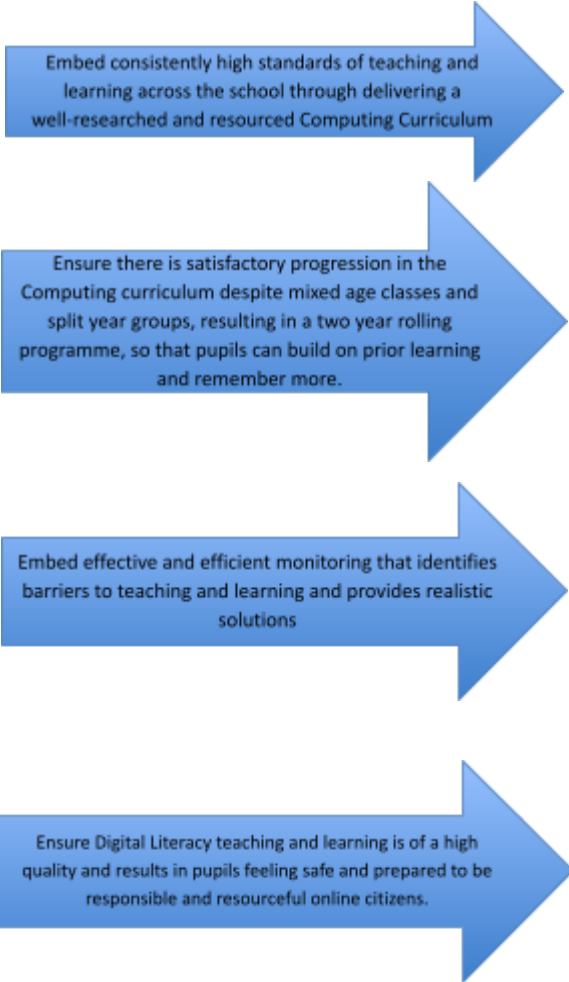
# **Computing Action Plan**

# ***September 2022***

*'Stand true in what you believe. Be courageous, be strong. And do everything with love.'* 1 Corinthians 16:13-14

*Feed the mind, nurture the spirit, free the imagination!*

Durweston is a small, village primary school with 118 pupils on roll organised into 5 classes. We have an on-site governor run preschool called Handy Paws

2022	Lines of development	2025
<p><b><u>Where are we now?</u></b></p> <p>We are now in possession of 15 new, fully set-up chromebooks. We also have 20 I pads which work at a very basic level. They take photos, print, give access to the internet and some apps still work. They are on an old operating system that cannot be updated and so apps cannot be downloaded and stored on them.</p> <p>Our school does not have a specialist Computing teacher with qualifications or training in this subject area. Therefore, as a starting point, we are following the DFE funded <i>Teach Computing</i> Curriculum which has been created by subject experts, using the latest pedagogical research and teacher feedback. This gives us all the peace of mind and reassurance that our pupils are receiving what they are entitled to.</p> <p>This resource includes lesson plans, slides, activity sheets and assessments. Each key stage has a teacher guide and curriculum map to help get staff started. It is built around an innovative progression framework where computing content has been organised into interconnected networks. All of the content is in formats that make it easy for staff to adapt it to meet the needs of their learners.</p> <p>The Computing Lead is also responsible for Music, Numeracy (shared) and is DSL. This does impact on the effectiveness of leadership and with the well-being of staff in mind, further supports the rationale for using a published Computing Scheme.</p>	 <p>Embed consistently high standards of teaching and learning across the school through delivering a well-researched and resourced Computing Curriculum</p> <p>Ensure there is satisfactory progression in the Computing curriculum despite mixed age classes and split year groups, resulting in a two year rolling programme, so that pupils can build on prior learning and remember more.</p> <p>Embed effective and efficient monitoring that identifies barriers to teaching and learning and provides realistic solutions</p> <p>Ensure Digital Literacy teaching and learning is of a high quality and results in pupils feeling safe and prepared to be responsible and resourceful online citizens.</p>	<p><b><u>Vision</u></b></p> <p>Quality of Education</p> <p>children are inspired by an outstanding Computing curriculum with high quality teaching and learning</p> <p>Attainment is consistently above national average, including for vulnerable children</p> <p>Behaviour and Attitudes</p> <p>Children exhibit positive attitudes to learning and respectful relationships are evident between all members of the community</p> <p>Personal Development</p> <p>Confident, resourceful, and reflective children who are keen to confront the challenges and opportunities on and offline</p> <p>Leadership and Management</p> <p>Computing Lead uses their excellent knowledge of the school and of developments in education to achieve and sustain the highest standards</p> <p>Computing Lead has a vision that inspires the whole school community, targeting resources to achieve the best possible outcomes whilst promoting financially sustainable choices</p> <p>There is an emphasis on the well-being of staff, pupils, and parents.</p>

Four year vision for Computing - Expectations			
End of First Year (Curriculum) 22-23	End of Second Year (Vocabulary) 23-24	End of Third Year (Staff training) 24-25	End of Fourth Year (knowledge Retrieval)
<p><b>Year A</b> units taught: Barriers to learning identified. Needs met and necessary adjustments made on a shared curriculum drive.</p> <p>An edited and resourced Computing programme for year A with work samples for assessment and future illustrative purposes.</p> <p>Computing lead has a good understanding of the subject and a strong subject knowledge.</p> <p>Computing is effectively led and teachers are aware of where to go for support when needed.</p> <p>A sequence of Year A units for each class that maximises possible progress and opportunities to build on prior knowledge.</p> <p>A cycle of monitor/feedback/evaluate is embedded. Evidence in pupil work, voice and observations shows improvements in teaching and learning.</p> <p>Pupils indicate they feel more confident to respond to e-safety concerns.</p>	<p><b>Year B</b> units taught: Barriers to learning identified. Needs met and necessary adjustments made on shared curriculum drive.</p> <p>An edited and resourced Computing programme for year B with work samples for assessment and future illustrative purposes.</p> <p>Computing continues to be effectively led and teachers are aware of where to go for support when needed.</p> <p>A sequence of Year B units for each class that maximises possible progress and opportunities to build on prior knowledge.</p> <p>A cycle of monitor/feedback/evaluate is embedded and used to reach high standards of teaching and learning.</p> <p>Evidence in pupil work, voice and observations shows improvements in teaching and learning.</p> <p>Computing Vocabulary is displayed and referred to in lessons to fully maximise pupil use.</p> <p>Pupils are starting to communicate their</p>	<p>Staff training needs are identified and they are signposted towards relevant training opportunities.</p> <p>Staff have greater confidence in delivering the two-year rolling programme of units and how to maximise opportunities and learning experiences for their mixed age classes.</p> <p>Pupil E-safety ambassadors trained and given responsibility for communicating e-safety messages to school community.</p>	<p>Teachers present subject matter clearly, promoting appropriate discussion about the subject matter they are teaching. They check learners' understanding systematically, identify misconceptions accurately and provide clear, direct feedback. In doing so, they respond and adapt their teaching as necessary, without unnecessarily elaborate or differentiated approaches.</p> <p>Using mind mapping in whole class, small group, paired and individual contexts to record key knowledge.</p> <p>Use maps to recall knowledge and provide opportunities in lessons to quiz and check retained knowledge and ability to retrieve.</p> <p>Teaching is designed to help learners to remember in the long term the content they have been taught and to integrate new knowledge into larger concepts.</p> <p>Teachers and leaders use assessment well, for example to help learners embed and use knowledge fluently or to check understanding and inform teaching. Leaders understand the limitations of assessment and do not use it in a way</p>

E-safety Audit completed and actions either addressed or included in future action planning	learning with more precision and confidence.		that creates unnecessary burdens for staff or learners.
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<b>Priority 1</b> Embed consistently high standards of teaching and learning across the school through delivering a well-researched and resourced Computing Curriculum			
<b>Priority 2</b> Ensure there is satisfactory progression in the Computing curriculum despite mixed age classes and split year groups, resulting in a two year rolling programme, so that pupils can build on prior learning and remember more.			
<b>Priority 3</b> Embed effective and efficient monitoring that identifies barriers to teaching and learning and provides realistic solutions			
<b>Priority 4</b> Ensure Digital Literacy teaching and learning is of a high quality and results in pupils feeling safe and prepared to be responsible and resourceful online citizens.			
<b>Action - What</b> are we going to do, who is going to do it and what resources do we need?		<b>Impact -</b> Monitoring, where we expect to be, who will measure, how and when. To be RAG'd by Computing Lead at the end of each term.	
		<b>Dec</b>	<b>April</b>
		<b>July (Impact)</b>	
<p><b>Priority 1 - Curriculum coverage</b> Ensure Computing curriculum policy clearly describes the knowledge to be taught in each class in each year with potential resources. Share this with all Class Teachers.</p> <p>Computing Lead to become familiar with the scheme, what is taught in each year group and when:</p> <ul style="list-style-type: none"> <li>Adjust plans in response to available resources.</li> <li>Adjust the sequence of units taught in a year for each class, to maximise possible progress and opportunities to build on prior knowledge.</li> </ul> <p>Computing Lead to keep up to date with developments in computing and any online safety issues that could arise (current games/ social media ‘fads’ etc.) Lead to share any CPD/updates/developments with other staff and provide support to other staff</p>		<p>Computing Curriculum created and shared with class teachers.</p> <p>First two units completed.</p> <p>Barriers to learning identified. Needs met and necessary adjustments made on shared curriculum drive.</p>	<p>Spring units (2) completed.</p> <p>Barriers to learning identified. Needs met and necessary adjustments made on shared curriculum drive.</p> <p>Computing lead is developing a good subject knowledge of the subject and knows</p>
		<p>Final units completed.</p> <p>Barriers to learning identified. Needs met and necessary adjustments made on shared curriculum drive.</p> <p>An edited and resourced Computing programme for year B with work samples for assessment and future illustrative purposes.</p>	

<p>when possible. This could include signposting to websites, team teaching, lesson drop ins.</p> <p>Attend network meetings/CPD for computing</p>	<p>Computing lead has a good understanding of the computing scheme and what is being taught across each year group.</p>	<p>where to direct other staff to for support.</p>	<p>Computing lead has a good understanding of the subject and a strong subject knowledge. Computing is effectively led and teachers are aware of where to go for support when needed.</p>
<p><b>Priority 2 Curriculum progression</b> Ensure Computing curriculum policy clearly demonstrates how knowledge builds over time. Share this with all Class Teachers.</p>	<p>Curriculum progression document published and shared with class teachers</p>	<p>Sequence of lessons is reviewed and adjustments made to maximise opportunities to build on prior knowledge</p>	<p>A sequence of Year B units for each class that maximises possible progress and opportunities to build on prior knowledge.</p>
<p><b>Priority 3 Curriculum monitoring</b> Computing to be included on the monitoring plan. Computing lead to undertake monitoring that may include:</p> <ul style="list-style-type: none"> <li>• Pupil voice</li> <li>• Evidence of work</li> <li>• Lesson drop ins</li> </ul> <p>Computing Lead to address potential barriers to teaching and learning discovered from monitoring and/or suggest alternative solutions, including training opportunities.</p> <p>Teachers to act on next steps. Computing Lead will ensure that any next steps have been completed through follow up monitoring.</p>	<p>A system for monitoring computing is in place for the year.</p>	<p>The monitoring practice is developing and improvements in teaching computing are beginning to show.</p>	<p>A cycle of monitor/feedback/evaluate is embedded. Evidence in pupil work, voice and observations shows improvements in teaching and learning.</p>
<p><b>Priority 4 Digital Literacy</b> E-Safety units to be taught across all year groups.</p> <p>Relevant policies are updated in response to KCSIE '21.</p> <p>Computing Lead to attend E-Safety champion training.</p> <p>Lead to update swgfl 360 audit</p>	<p>E-Safety units taught in every class</p> <p>NSPCC online assembly delivered to each class where appropriate</p> <p>AUA for pupils and staff updated in response to KCSIE '21 and shared and agreed by all.</p>	<p>Online safety policy agreed and shared with whole school community.</p>	<p>Pupils indicate they feel more confident to respond to e-safety concerns.</p> <p>Audit completed and actions either addressed or included in future action planning</p>

Governor monitoring	JJ/JLS/NB
Action: JLS/Class Teachers	<p>Monitored by: JLS/JJ                      Termly meetings between Governor and Computing Lead to monitor actions achieved and to provide support for barriers to progress of action plan.</p> <p>JJ Learning Walk to evidence long term plan is being taught and units adjusted according to resources available and pupils' needs.                      JJ to engage with completion of 360° audit</p>