Dunmore

Computing Curriculum

Scheme of Work Year 1 – 6

At Dunmore, we believe that every child is a digital innovator! Our computing curriculum ignites curiosity and empowers pupils to become confident and creative users of technology. We aim to equip them with the essential skills and knowledge to navigate the digital world safely and responsibly.

Through engaging and hands-on experiences, children will learn the fundamentals of computer science, from coding and algorithms to understanding how technology works. We foster critical thinking, problem-solving, and collaboration, preparing them for future success in an increasingly digital society. Our intent is to inspire a lifelong love of learning and to empower our pupils to use technology to shape a better future.

Golden Threads

Algorithms and Programming: What algorithms are (precise sequences of instructions) and how they are implemented as programs on digital devices. Children learn to create, debug, and predict the behavior of simple programs in Key Stage 1, progressing to designing, writing, and debugging more complex programs using sequence, selection, and repetition in Key Stage 2. They also begin to work with variables and different forms of input and output.

Computer Systems and Networks: How digital devices work and how they are connected. In Key Stage 1, children recognize common uses of technology beyond school. By Key Stage 2, they understand computer networks, including the internet, the services they provide (like the World Wide Web), and the opportunities for communication and collaboration.

Data and Information: How data is handled and used in digital contexts. Key Stage 1 introduces purposeful use of technology to create, organize, store, manipulate, and retrieve digital content, as well as grouping data. In Key Stage 2, pupils learn to use search technologies effectively, evaluate digital content, and select and combine software to collect, analyse, evaluate, and present data and information.

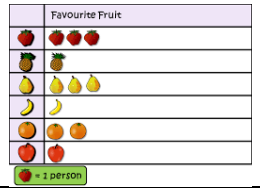
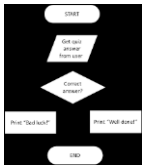
Creating Media: Application of technology to produce various forms of digital content. In Key Stage 1, children use technology for digital painting and writing, recording sounds and pictures, and presenting data using pictures. Key Stage 2 expands this to include stop-frame animation, desktop publishing, audio and video production, photo editing, digital music creation, and web page creation.

Digital Literacy and Online Safety: Responsible and safe technology use. Key Stage 1 emphasises using technology respectfully, keeping personal information private, and knowing where to seek help for online concerns. Key Stage 2 builds on this, focusing on using technology safely, respectfully, and responsibly, recognizing acceptable/unacceptable online behaviour, and identifying various ways to report concerns about content and contact

Computing Curriculum Overview **Year 1**

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 1 Computing						
Computing Unit	**Technology Around Us & E Safety: Using a computer or device**	**Moving a robot**	**Digital Literacy & E Safety: Using a search engine.**		**Digital Painting**	**Coding – Scratch Jr Introduction & fundamentals**
Pathway of Learning	Recognising technology in school and how it can be used responsibly.	Writing short algorithms and programs for beebots and predicting program outcomes. Programming A – Moving a robot (teachcomputing.org)	Develop Digital Literacy through increased use of technology, developing typing and mouse skills, using an online search engine safely, and creating and formatting text. Computing systems and networks – Technology around us (teachcomputing.org)		Choosing appropriate tools in a program to create art, and making comparisons with working non-digitally. Creating media – Digital painting (teachcomputing.org)	Designing and programming the movement of a character on screen to tell stories Programming B - Programming animations (teachcomputing.org)
Vocabulary:	*Online, internet, safe, strangers*	*Direction, algorithm, forwards, backwards, left, right, beebot*	*Mouse, click, type, capital, space bar, keyboard, programme, Word*		*Mouse, right click, programme, monitor, computer, colour*	*Move, programme, algorithm*
Overview of activities:	Understanding the different types of technology around us and how to be safe online.	Beebots 1,2,3 Activity	Using Word to create, edit and print text.		Using Paint or Tate Paint | Tate Kids to create art including work in the style of a specific artist.	Using Scratch to create a simple animation.

Computing Curriculum Overview **Year 2**

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 2 **Computing**						
Computing Unit	**Information Technology Around Us:** (& E-Safety)	**Digital photography**	**Robot algorithms**	**Pictograms**	**Digital Music**	**Programming quizzes**
Pathway of Learning	Identifying IT and how its responsible use improves our world in school and beyond. Computing systems and networks – IT around us (teachcomputing.org)	Capturing and changing digital photographs for different purposes. Creating media – Digital photography (teachcomputing.org)	Creating and debugging programs, and using logical reasoning to make predictions Programming A – Robot algorithms (teachcomputing.org)	Collecting data in tally charts and using attributes to organise and present data on a computer Data and information – Pictograms (teachcomputing.org)	Using a computer as a tool to explore rhythms and melodies, before creating a musical composition. Creating media - Digital music (teachcomputing.org)	Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz. Programming B - Programming quizzes (teachcomputing.org)
Vocabulary:	*Internet, network, safety, communication*	*Photograph, edit, programme*	*Direction, programming, sequence, debug*	*Data, pictogram, presentation, organising*	*Compose, rhythm, tempo, notes, revision*	*Sequence, change, commands, debug*
Overview of Activities:	Identifying the benefits of IT in the school and wider world. Logging onto our accounts, Digital 5 a day and ongoing internet safety.	Using Paint or AI Photo Editor - Instant Photo Editing with AI | Fotor to edit photos	(Use Espresso Coding for debugging challenges)	Create pictograms using Excel or similar program. www.j2e.com/j2data	FREE Year 1 Music Creation - iLearn2 | Primary Computing. Made Easy.	Using Scratch Jr to create simple quizzes.

Computing Curriculum Overview **Year 3**

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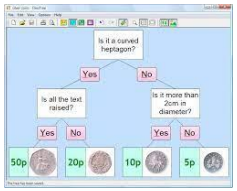
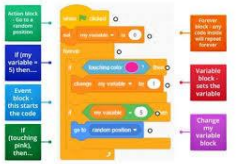
Year 3 Computing						
Computing Unit	**Connecting computers**	**Stop frame animation**	**Sequencing sounds**	**Branching databases**	**Desktop Publishing**	**Events and actions in programs**
Pathway of Learning Overview of Activities:	Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks. Computing systems and networks – Connecting computers (teachcomputing.org) Identifying how information is transferred between connected devices. Understand how networks are connected.	Capturing and editing digital still images to produce a stop-frame animation that tells a story. Creating media - Stop-frame animation (teachcomputing.org) Using Pivot animator and Movie Maker to make their own stop frame animations.	Creating sequences in a block-based programming language to make music. Programming A - Sequencing sounds (teachcomputing.org) Learn how to make your own musical instrument in Scratch or https://musiclab.chromeexperiments.com/Song-Maker/	Building and using branching databases to group objects using yes/no questions. Data and information – Branching databases (teachcomputing.org) Learn how branching databases work at www.j2e.com/j2data before making their own databases.	Creating documents by modifying text, images, and page layouts for a specified purpose. Creating media – Desktop publishing (teachcomputing.org) Using Microsoft Publisher to think about page layout. Opportunity to link to create cross curricular link.	Writing algorithms and programs that use a range of events to trigger sequences of actions. Programming B - Events and actions in programs (teachcomputing.org) Using Espresso or Scratch to design and code their own maze tracing program.

Computing Curriculum Overview **Year 4**

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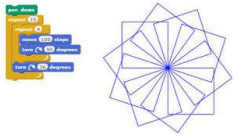
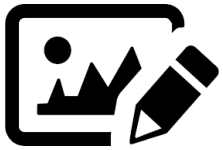
Year 4 Computing						
Computing Unit	**The internet**	**Audio Production**	**Repetition in shapes**	**Data logging**	**Photo editing**	**Repetition in games**
Pathway of Learning	Recognising the internet as a network of networks including the WWW, and why we should evaluate online content. Computing systems and networks – The Internet (teachcomputing.org)	Capturing and editing audio to produce a podcast, ensuring that copyright is considered. Creating media - Audio production (teachcomputing.org)	Using a text-based programming language to explore count-controlled loops when drawing shapes. Programming A – Repetition in shapes (teachcomputing.org)	Recognising how and why data is collected over time, before using data loggers to carry out an investigation. Data and information – Data logging (teachcomputing.org)	Manipulating digital images and reflecting on the impact of changes and whether the required purpose is fulfilled. Creating media – Photo editing (teachcomputing.org)	Using a block-based programming language to explore count-controlled and infinite loops when creating a game. Programming B – Repetition in games (teachcomputing.org)
Overview of Activities:	Evaluating the trustworthiness of a website and the reliability of sources.	Using Audacity to create a podcast (cross curricular possibility) including editing and adding multiple tracks.	Learn how to create loops in Logo to create shapes and patterns.	Explore how sensors and data loggers are used in real life applications.	Learn how to manipulate and edit digital images to change them.	Using Espresso or Scratch to design and code their own maze tracing program.

Computing Curriculum Overview **Year 5**

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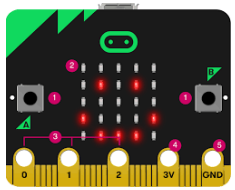
Year 5 Computing						
Computing Unit	**Systems and searching**	**Video production**	**Selection in physical computing**	**Flat-file databases**	**Introduction to vector graphics**	**Selection in quizzes**
Pathway of Learning	Recognising IT systems in the world and how some can enable searching on the internet. Computing systems and networks - Systems and searching (teachcomputing.org)	Planning, capturing, and editing video to produce a short film. Creating media - Video production (teachcomputing.org)	Exploring conditions and selection using a programmable microcontroller. Programming A – Selection in physical computing (teachcomputing.org) Please note – we use Micro:bits instead of the Crumble Controller. Support / resources for Micro:bit can be found here: https://microbit.org/teach/lessons/?filters=age-07-11yrs	Using a database to order data and create charts to answer questions. Data and information – Flat-file databases (teachcomputing.org)	Creating images in a drawing program by using layers and groups of objects. Creating media – Introduction to vector graphics (teachcomputing.org)	Exploring selection in programming to design and code an interactive quiz. Programming B – Selection in quizzes (teachcomputing.org)
Overview of Activities:	The children will learn how to take part in a collaborative online project.	The focus is on collaboration and being able to evaluate the end product. An ideal opportunity to host your own Oscars!	Learn how to program your own BBC Micro:bit controller.	Use a real life database to answer questions. www.j2e.com/j2data	Using Google drawing apps the children will learn how to create a vector drawing.	Using Scratch the children will be introduced to the If…Else… structure to create their own interactive quizzes.

Computing Curriculum Overview **Year 6**

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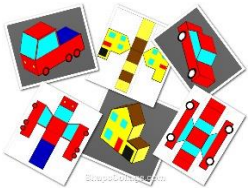
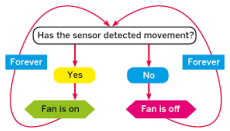
Year 6 Computing						
Computing Unit	**Communication and collaboration**	**Webpage creation**	**Variable in games**	**Introduction to spreadsheets**	**3D modelling**	**Sensing movement**
Pathway of Learning	Exploring how data is transferred by working collaboratively online. Computing systems and networks - Communication and collaboration (teachcomputing.org)	Designing and creating webpages, giving consideration to copyright, aesthetics, and navigation. Creating media – Web page creation (teachcomputing.org)	Exploring variables when designing and coding a game. Programming A – Variables in games (teachcomputing.org)	Answering questions by using spreadsheets to organise and calculate data. Data and information - Introduction to Spreadsheets (teachcomputing.org)	Planning, developing, and evaluating 3D computer models of physical objects. Creating media – 3D Modelling (teachcomputing.org)	Designing and coding a project that captures inputs from a physical device. Programming B - Sensing movement (teachcomputing.org)
Overview of Activities:	The children learn how to communicate responsibly by considering what should and should not be shared on the internet.	The children identify what makes a good web page before designing and evaluating their own on Google sites.	The children learn how to use variables before applying them to their own game in either Scratch or Espresso.	The children will learn to create their own spreadsheets including applying simple formulas.	The children will learn how to use 3D modeller to create a model of a desk tidy.	The children will combine all of their previous programming knowledge to create a program for a BBC micro:bit.