



Matlock and Dales
Primary Partnership

Computing

Intent, Implementation and Impact Statement

	Key Points
Our Intent	As stated in the National Curriculum, <i>“a high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world... Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world”</i>. At Matlock and Dales Primary Partnership, we aim to provide a curriculum which enables our children to: know more, experience more, remember more and do more. The use of computers and computer systems is an integral part of the National Curriculum and knowing how they work is a key life skill. In our increasingly digital world, exists a wealth of technology and software that can be used to communicate, collaborate, express ideas and create digital content. In Matlock and Dales Partnership we recognise that pupils are entitled to a broad and balanced computing education with a structured, progressive approach to learning. We will explore how computing systems work, the use of IT and gain the skills necessary to become digitally literate and participate fully in the modern world.
Our Implementation	At Matlock and Dales Partnership we recognise that our curriculum planning must allow for all children to gain a progressively deeper level of knowledge, understanding and skill competency as they move throughout the school. Across all schools, computing is taught as a discrete subject as well as linking across the curriculum, using a variety of teaching and learning styles. In Early Years Foundation Stage opportunities for computing occur through continuous provision. Systematic enquiry opportunities are provided in Foundation Stage, based upon all areas of Development Matters, but primarily in ‘Understanding the World’. In Key Stage 1 and 2, we believe in whole-class teaching methods and combine this with practical learning. In Foundation Stage we use a combination of topic related and child-centred learning to facilitate our children’s exploration of technology. We support all children across the Matlock and Dales Partnership by tailoring our teaching and learning for individual children by following recommendations from our SENDCO and external advisers. Teach Computing’s curriculum is underpinned by 12 key principles which we believe are fundamental. These principles are: lead with concepts, work together, get hands-on, unplug unpack and repack, model everything, foster program comprehension, create projects, add variety, challenge misconceptions, make concrete, structure lessons and read and explore code first. Mixed year groups will be taught in 2 year cycles.

The Impact	The impact and measure of this is to ensure that our children progress to reach their full potential as they: know more, experience more, remember more and do more.
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	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum		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 to purposefully create, organise, store, manipulate and retrieve digital content. Recognise common uses of information technology beyond schools. 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.		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.			

Learning (fundamental skills – what will be constantly revisited?)	Observe technology around us.	Term 1: Computing systems and networks					
	Explore a range of real and play technology.	Technology around us Recognising technology in school and using it responsibly	Information technology around us Identifying IT and how its responsible use improves our world in school and beyond.	Connecting computers Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks	The internet Recognising the internet as a network of networks including the WWW, and why we should evaluate online content.	Sharing information Identifying and exploring how information is shared between digital systems.	Internet communication Recognising how the WWW can be used to communicate and be searched to find information.
	Know how to operate simple equipment and show skill in this.	Term 2: Creating Media					
	Children take photographs, record voices and capture their learning.	Digital painting Choosing appropriate tools in a program to create art, and making comparisons with working non-digitally Tuxpaint on iPads	Digital photography Capturing and changing digital photographs for different purposes Use filters on Gallery View	Stop-frame animation Capturing and editing digital still images to produce a stop-frame animation that tells a story.	Audio editing Capturing and editing audio to produce a podcast, ensuring that copyright is considered.	Video editing Planning, capturing, and editing video to produce a short film.	Webpage creation Designing and creating webpages, giving consideration to copyright, aesthetics, and navigation.
	Use age appropriate computer software.	Term 3: Programming A					
	Complete a simple program on a computer.	Moving a robot Writing short algorithms and programs for floor robots, and predicting program outcomes.	Robot algorithms Creating and debugging programs, and using logical reasoning to make predictions	Sequencing sounds Creating sequences in a block-based programming language to make music.	Repetition in shapes Using a text-based programming language to explore count-controlled loops	Selection in physical computing Exploring conditions and selection using a programmable	Variables in games Exploring variables when designing and coding a game
	Use an app and a website appropriately.						

	Retrieve information from a computer device using QR codes.				when drawing shapes.	microcontroller or online coding builder. Y5 will use scratch to create a space rocket racing game – using ‘if’ and ‘when’ conditions. Use the class login to scratch to save each game.	
	Term 4: Data and Information						
	Grouping data Exploring object labels, then using them to sort and group objects by properties.	Pictograms Collecting data in tally charts and using attributes to organise and present data on a computer.	Branching databases Building and using branching databases to group objects using yes/no questions.	Data logging Recognising how and why data is collected over time, before using data loggers to carry out an investigation. Data Loggers or Audrino Science	Flat-file databases Using a database to order data and create charts to answer questions.	Introduction to spreadsheets Answering questions by using spreadsheets to organise and calculate data.	
	Term 5: Creating Media						
	Digital writing Using a computer to create and format text, before comparing to writing non-digitally.	Making music Using a computer as a tool to explore rhythms and melodies, before creating a	Desktop publishing Creating documents by modifying text, images, and page	Photo editing Manipulating digital images, and reflecting on the impact of changes and whether the	Vector drawing Creating images in a drawing program by using layers and groups of objects	3D modelling Planning, developing, and evaluating 3D computer models of physical objects.	

			musical composition.	layouts for a specified purpose	required purpose is fulfilled.		
		Term 6: Programming B					
		Programming animations Designing and programming the movement of a character on screen to tell stories	Programming quizzes Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz.	Events and actions in programs Writing algorithms and programs that use a range of events to trigger sequences of actions.	Repetition in games Using a block-based programming language to explore count-controlled and infinite loops when creating a game.	Selection in quizzes Exploring selection in programming to design and code an interactive quiz.	Sensing Designing and coding a project that captures inputs from a physical device. Microbit online Extra microbit resources
E Safety	Refer to the M&D E-Safety Document						
Vocab	Internet World Wide Web Search	Programme Sequence	Digital content Data Information	Input Output Computing network Algorithms	Services Simulation Software	Logical reasoning Debug	Selection Control Variables
Approach to assessment	Teacher Assessment – record on class monitoring sheet.	1. Refer to summative assessment for each module on Teach Computing 2. Record on Class Summative assessment sheet and share with Computing leads each term.					

Key learning – Sticky knowledge	Explore and use technology.	Computing systems and networks:	Computing systems and networks:	Computing systems and networks:	Computing systems and networks:	Computing systems and networks:	Computing systems and networks:
	Know how to operate simple equipment and toys.	I know what a computer is and can complete basic operations	I know how computers and information technology can be used	I know how computer networks work and can identify the main components	I know what the internet and World Wide Web are and how they are created	I know what search engines do and how they operate	I know how to compare and evaluate methods of online communication
	Use a device to interact with age-appropriate software.	Creating media:	Creating media:	Creating media:	Creating media:	Creating media:	Creating media:
	Complete a simple program on a computer or tablet.	I know how to use tools on a computer to create an image	I know how to take and make changes to a digital image	I know how to create a simple animation using stop motion technology	I know how to create and edit audio	I know how to create, edit and evaluate video content	I know how to create and edit and web page
		I know how to use tools on a computer to edit text	I know how to use ICT to create a musical pattern	I know how to use a desktop publishing tool to create content	I know how to manipulate digital images for a purpose	I know how to create digital images using vector graphics	I can create and analyse 3D models on a computer or tablet
		Programming:	Programming:	Programming:	Programming:	Programming:	Programming:
		I know how to program a simple robot to move in a desired manner	I know how to construct and debug a sequence of commands	I know how to use common programming tools to create animation	I know how to use the repeat command effectively in programs	I know how to create a computer program using loops that controls a physical object	I know how to use variables in computer programs
		I know how to use commands to create a simple program on a	I know how to create a program for a specific purpose	I know how to create and debug programs with	I know how to create and use count controlled		I know how to create a program using inputs and outputs on a

		computer or tablet		multiple commands	and infinite loops in programs	I know how to create a computer program using selection based on conditions	controllable device
		Data and information: I know how to group data based on properties	Data and information: I know how to present data effectively using a computer	Data and information: I know how to use branching databases to organise data	Data and information: I know how to use information technology to collect and analyse data	Data and information: I know how to sort data and present findings from a database	Data and information: I know how to use formulas to perform calculations