Featherstone Wood Primary School **Long Term Planning Computing: Purple Mash Scheme**

Working Collaboratively, Independence, Community Values, Reflectiveness

Stickability; Risk-Taking, Inquisitiveness, Communication *National Curriculum Coverage*

KS1 National Curriculum	KS2 National Curriculum
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.	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.

Computing Curriculum Statement of Intent:

Through our Computing curriculum children learn to master their programming skills, creating and debugging simple programs. Our projects enable children to use a range of software in order to accomplish their goals. Children will begin to think critically about information presented to them, and evaluate the credibility of different sources. This skill development, combined with a strong focus on e-safety, aims to equip children with the tools they need in order to use technology responsibly and safely manage an ever increasing online presence.

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	Autumn 1		Autumn 2		Spring 1	Spring 2	Summer 1	Summer 2	
EYFS	Beebots		Sorting using photo technology		Exploring Keyboards	2CreateaStory	Technology at home and school		
Year 1	**1:1 Online Safety** Exploring Purple Mash 4 weeks	**1:9 Technology outside School** Identify ways tech used at home and wider environment 2 weeks	**1:2 Grouping and Sorting** Sort items offline and online 2 weeks	**1:6 Animated Storybooks** Adding text, sound, backgrounds to existing stories 5 weeks	**1:7 Coding** Introduction to Block coding 6 weeks	**1:8 Spreadsheets** Introduction – add images, use speak and count tools 3 weeks	**:5 Maze Explorers** Understanding direction and using within algorithms 3 weeks	**1:3 Pictograms** Contributing to and beginning to create Pictograms 3 weeks	**1:4 Lego Builders** Following and beginning to create instructions 3 weeks
Year 2	**2:1 Coding** Create simple algorithms, timer and repeat commands. Introduction to debugging 5 weeks CRASH COURSE	**2:2 Online Safety** Respond using 2Email, digital footprint 3 weeks	**2:6 Creating Pictures** 2Paint a Picture to create art in the style of different artists 5 weeks	**2:4 Questioning** Binary Tree Simple database search 5 weeks	**2:5 Effective Searching** Introduction to internet searching 3 weeks	**2:3 Spreadsheets** Copy, paste, totalling Adding amounts Create table and block graph 4 weeks CRASH COURSE	**2:7 Making Music** Explore existing sounds. Begin to record own sounds 3 weeks	**2:8 Presenting Ideas** Make a quiz, fact file, presentation 4 weeks	
Year 3	**3:1 Coding** If commands, algorithms using variables and repetition. Debug simple programs 6 weeks		**3:2 Online Safety** Website credibility Age restrictions 3 weeks	3:4 **Touch typing** Practise typing letters with corresponding hand	3:5 **Email** Writing emails, email safety Attachments 6 weeks	**3:6 Branching Databases** Complete and begin to create branching database 6 weeks	**3:7 Simulations** Explore, analyse and evaluate simulations 3 weeks	3:3 **Spreadsheets** Pie charts, bar graphs Introduction to coordinates 3 weeks	**3:8 Graphing** Present Maths investigation data in graphic form 3 weeks

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			4 weeks						
Year 4	**4:1 Coding** If/Else, repeat until commands, timers. Introduction to decomposition and abstraction 6 weeks	**4:2 Online Safety** Plagiarism, digital footprint and identity theft 4 weeks		**4:5 Logo** Basic functions to build procedures in Logo 4 weeks	**4:4 Writing for different Audiences** Use simulated scenarios to write a news report and persuasion 3 weeks	**4:6 Animation** Add to existing animations and create own Stop motion animation 3 weeks	**4:7 Effective Search** Search to find specific information. Reliability and truth of sources 3 weeks	**4:8 Hardware Investigators** Understand and name parts of a computer 2 weeks	**4:3 Spreadsheets** Formula wizard, graphs and budgeting 5 weeks
Year 5	**5:1 Coding** Use commands from y4 unit to create playable competitive game 6 weeks	**5:2 Online Safety** Responsibility for online behaviour. Potential impact of sharing digital content 3 weeks	**5:4 Databases** Explore existing and create own database 4 weeks	**5:5 Game Creator** Analyse existing then create own game 5 weeks		**5:6 3D Modelling** Use design software to make object for a purpose 4 weeks	**5:3 Spreadsheets** Conversion of measurement. Formulae for calculating area and perimeter. 6 weeks	**5:7 Concept Maps** Understand and create Concept maps, present to an audience. 4 weeks	
Year 6	**6:1 Coding** Introducing functions, creating control simulations 6 weeks	**6:2 Online Safety** How digital footprint creates virtual image of someone, achieving time balance with technology	**6:4 Blogging** Commenting on existing and creating own blog. Impact on audience 4 weeks	**6:5 Text Adventures** Use story publishing, concept mapping and coding skills to create own text adventure 5 weeks		**6:7 Quizzing** Explore question types when creating own quiz. 6 weeks	**6:6 Networks** Creation of the internet and future possibilities 3 weeks	**6:3 Spreadsheets** Probability Use of spreadsheets in real life models 5 weeks	**6:8 Understanding Binary** Introduction to number codes used in digital systems 4 weeks

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		3 weeks						

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	Key Skills and Knowledge		
	Beacon 1	**Beacon 2**	**Beacon 3**
Knowledge	• Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. • Recognise common uses of technology beyond school. • Identify where to go for help when they have concerns about content or contact on the internet and other online technologies	• List ways the internet can be used to provide different methods of communication. • Demonstrate the importance of having a secure password • Know more than one way to report unacceptable content and contact. • Recognise the main components parts of hardware which allow computers to join and form a network. • Help others to understand importance of online safety.	• Understand the value of computer networks but also be aware of the main dangers. • Recognise what personal information is and explain how this can be kept safe. • Have a secure knowledge of common online safety rules and can apply this by demonstrating the safe and respectful use of different technologies and online services. • Implicity relate appropriate online behaviour to their right to personal privacy and mental wellbeing of themselves and others. • Children know what a WAN and LAN are and can describe how they access the internet in school. • Explain how credible a webpage is and the information it contains.
	Understand the following key vocabulary:	Understand the following key vocabulary:	Understand the following key vocabulary:
	computer: an electronic machine that uses programs **algorithm**: a set of precise and clear instructions that can be in human language or in computer language **program:** an algorithm in computer language used to complete a task **debug:** identify errors in an algorithm and make changes **e-safety:** using technology safely	**block-based programming:** creating a program by putting blocks together instead of writing code in the form of words/letters **sequence**: putting steps in the correct order to complete a task **selection:** where a computer program chooses which set of instructions to do according to whether a condition is met. repetition: repeating some steps of an algorithm more than once **variable:** a piece of information stored in a program which can be accessed again later **data:** information sent to a computer	**computer network**: a group of computers connected together which can share information with each other (eg) the internet, our school intranet **decomposition:** breaking a big task down into smaller parts which are more manageable **reliability:** how trustworthy a given piece of information is, given its source.

		input: any data sent to a computer through an input device such as a mouse, keyboard or camera **output**: data sent out from a computer through an output device such as a monitor or speakers.	
Skills	• 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. • Use technology safely and respectfully, keeping personal information private.	• Turn a simple real-life situation into an algorithm by deconstructing it into manageable parts. • Identify an error within their program that prevents it following the desired algorithm and then fix it. • Design and code a program that follows a simple sequence. • Show that they are thinking of the structures of a program in logical, achievable steps and absorbing some new knowledge of coding structures. • Carry out simple searches to retrieve digital content • Collect, analyse evaluate and present data and information using a range of software. • Use and manipulate the values of variables • 'Read' programs with several steps and predict the outcome accurately. • Use the function, features and layout of a search engine.	• Translate algorithms that include sequence, selection, and repetition into code with increasing ease. • Combine sequence, selection and repetition with other coding structures to achieve their algorithm design. • Search with greater complexity for digital content when using a search engine • Use several different ways of sharing digital content. • Children test and debug their program as they go and use logical methods to identify the cause of bugs, demonstrating a systematic approach to try to identify a particular line of code causing a problem. • design and create their own blogs to become a content creator on the internet