Pennine Way Primary School

Computing Curriculum and Skills Plan

National Curriculum Objectives and skills

Computing curriculum at Pennine Way

Our Computing Curriculum brings the digital world into our classroom, where each and every child takes control over their own personal I-Pad allowing a truly hands on approach; that engages, enthuses and sparks wonderment whilst developing advanced problem-solving skills. Empowering children to safely operate online; whilst enjoying the thrills of coding, modelling, creating and presentational applications all ensures their future readiness.

Computing Recovery Curriculum focus

Critical content for our recovery curriculum in Computing has been evaluated and our priority is on based around lost content and critical content needed for progression and links between concepts to be made. We feel a key overriding skill throughout the whole school needs to be that of online safety due to the modern, technology focused world and in many of our children's cases a lack of parental guidance/role models.

In KS1 we believe the key skills in the computing curriculum are all either digital literacy or iPad competency based. Without the iPad competency children are not able to access lots of the work across the curriculum and due to the fact that children are now using technology they also need to be aware of what is appropriate when using their iPads.

At the beginning of KS2 we believe that the children need a key understanding of what an algorithm is and how to use coding to create simple programs and sequences – this will set them up as they continue to progress with much more sophisticated coding concepts in the future.

Online safety again is a vitally important aspect especially with children now logging into more websites/apps with their own passwords we feel understanding the importance of keeping passwords safe is key. In addition to this, children are mature enough to also spot when they or their peers come across inappropriate content and therefore need to be aware of how to report it.

As the children progress through KS2 their online presence will be increasing and as such they need to be aware of their own digital footprint and the problems with too much screen time. Programming and coding becomes more advanced and as a result becomes key in ensuring children can progress through the years and into secondary school.

Children in upper Key Stage 2 also spend more time working independently and doing their own research – they need to be aware of what information is reliable and how to choose reputable websites.

As children join and then subsequently leave year 6, puberty has started for some children and the children are become more aware of themselves and their peers. They need to understand how damaging the use of technology/online behaviour/social media can be and feel confident in promoting a positive online image of themselves in their digital footprints.

Specific skills identified as critical content and being essential building blocks for each child's progression in their Computing curriculum have been ***highlighted.***

Computing National Curriculum Expectations Year 1			**Year 1**		
			Aut	Spr	Sum
Computer Science	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.				
	C1.1	Understand and explain what algorithms are.			
	C1.2	Understand where algorithms are used.			
	C1.3	Understand what debugging is.			
Information technology	Use technology purposefully to create, organise, store, manipulate and retrieve digital content.				
	Recognise common uses of information technology beyond school.				
	C1.4	*Switch on and log in to a variety of devices.*			
	C1.5	Create a document and save it.			
	C1.6	Reopen saved document and be able to make changes.			
Digital Literacy	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.				
	C1.7	Explain what is meant by technology and give examples both in and out of school.			
	C1.8	*Understand the importance of passwords and keeping them safe.*			
	C1.9	Understand that not everything on the internet is appropriate for me.			
iPad Competancy	C1.10	Lock and unlock an iPad.			
	C1.11	Turn the volume up and down on an iPad.			
	C1.12	Take a photo using an iPad.			
	C1.13	*Navigate the Showbie app to locate work.*			
	C1.14	*Complete work using voice notes and writing using fingers and pens on the Showbie app.*			
	C1.15	*Take a screenshot using an iPad and upload this to Showbie.*			
	C1.16	*Locate and use the whiteboard app.*			

Computing National Curriculum Expectations Year 2			**Year 2**		
			Aut	Spr	Sum
Computer Science	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.				
	C2.1	*Explain that an algorithm is a set of instructions to complete a task.*			
	C2.2	*Create a simple program that achieves a specific purpose.*			
	C2.3	Identify and correct some errors.			
	C2.4	Identify the parts of a program that respond to specific events and initiate specific actions.			
Information technology	Use technology purposefully to create, organise, store, manipulate and retrieve digital content.				
	Recognise common uses of information technology beyond school.				
	C2.5	Organise data using a selection of software.			
	C2.6	Retrieve specific data for conducting simple searches.			
	C2.7	Create, name, save and retrieve content.			
Digital Literacy	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.				
	C2.8	Retrieve relevant, purposeful digital content using a search engine.			
	C2.9	*Explain what is and is not appropriate to look at on the internet.*			
	C2.10	*Know how to report inappropriate behaviours and content to a trusted adult.*			
iPad Competency	C2.11	*Airdrop files and links to the teacher and peers.*			
	C2.12	Add a bookmark onto the iPad home screen for regularly visited websites e.g. Accelerated Reader.			
	C2.13	Edit a Key Note by adding and moving information.			
	C2.14	*Screen Mirror to the classroom interactive board.*			

Computing National Curriculum Expectations Year 3			**Year 3**		
			Aut	Spr	Sum
Computer Science	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.				
	Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.				
	Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.				
	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.				
	C3.1	Turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts			
	C3.2	*Design a code that follows a simple sequence*			
	C3.3	Integrate multimedia components such as sound and animation into a coding sequence.			
	C3.4	Understand how variables can be used to store information while a program is executing			
	C3.5	Read others' code, predict what my happen, identify any errors and then fix it.			
Information technology	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.				
	C3.6	Understand how to use a search engine and carry out simple searches to retrieve digital content.			
	C3.7	Collect, analyse, evaluate and present data/information using a selection of software.			
Digital Literacy	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.				
	C3.8	*Understand the importance of a secure password, not sharing this with anyone else and explain the negative implications of failure to keep them safe and secure.*			
	C3.9	*Understand the importance of staying safe and their conduct when using online communication tools*			
	C3.10	*Explain how to report unacceptable content*			
iPad Competency	C3.11	Create a Key Note including text boxes, photographs and different slide designs.			
	C3.12	Convert Key Notes to PDFs and upload to the relevant Showbie file.			
	C3.13	Create an iMovie using pictures			

Computing National Curriculum Expectations Year 4			Year 4		
			Aut	Spr	Sum
Computer Science	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.				
	Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.				
	Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.				
	Select, use and combine a variety of software (including internet services) on a range of digital devices to design & create a range of programs, systems & content that accomplish given goals, including collecting, analysing, evaluating & presenting data & information.				
	C4.1	Turn a simple real-life situation into an algorithm for a program.			
	C4.2	*Make intuitive attempts to debug programs.*			
	C4.3	Integrate timers into program designs to create repetition effects.			
	C4.4	Be able to sequence instructions in a variety of programs.			
	C4.5	Use and manipulate the value of variables.			
	C4.6	*Use programs to accomplish a specific goal.*			
Information technology	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.				
	C4.7	Find information using a search engine.			
	C4.8	Use keys words to make an effective online search.			
	C4.9	*Choose a reputable website based on the information needed.*			
	C4.10	Create an animation.			
Digital Literacy	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.				
	C4.11	Create an online safety resource to help others understand the importance of online safety.			
	C4.12	*Know a range of ways to report inappropriate content and contact.*			
	C4.13	*Know what a digital footprint is.*			
	C4.14	*Can explain reasons for limiting screen time.*			
iPad Competency	C4.15	Create a pages document e.g. an advertisement brochure which includes text boxes, photos and manipulated text.			
	C4.16	Create an iMovie which includes photos, sounds and voice-overs.			

Computing National Curriculum Expectations Year 5			**Year 5**		
			Aut	Spr	Sum
Computer Science	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.				
	Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.				
	Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.				
	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.				
	C5.1	Create complex program that accomplish specific goals.			
	C5.2	*Break a program down into smaller parts (decompose) in order to debug them.*			
	C5.3	To be able to create complex sequences to form a program.			
	C5.4	Create a variety of repeated patterns to complete a goal.			
	C5.5	Use a variety of variables to change outcomes.			
	C5.6	Effectively use tabs to organise code for later use.			
Information technology	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.				
	C5.7	Evaluate, refine, adapt and edit models to suit a design brief.			
	C5.8	Design and make a recognisable form of a building.			
	C5.9	Combine text, sound and graphic components to create a game.			
	C5.10	Use a given success criteria to review and analyse what makes a successful computer game.			
Digital Literacy	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.				
	C5.11	Create a comic strip to help others understand the importance of online safety.			
	C5.12	*Know a range of ways to report inappropriate content and contact.*			
	C5.13	*Explain the positive and negative consequences of technological developments (altering images).*			
	C5.14	Explain what a citation is and when this should be used.			
	C5.15	*Understand what is and identify reliable content.*			
iPad Competency	C5.16	Create a Green Screen short movie.			
	C5.17	Use pages to create bar graphs, line graphs etc.			
	C5.18	Use a CAD (computer aided design) program to create a mechanical system.			

Computing **National Curriculum Expectations Year 6**			Year 6		
			Aut	Spr	Sum
Computer Science	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.				
	Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.				
	Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.				
	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.				
	C6.1	Turn complex programming tasks into an algorithm and decompose them in a logical way			
	C6.2	Test and debug programs			
	C6.3	Create a complex program using a variety of variables			
	C6.4	*Read code and predict what will happen*			
	C6.5	Know that instructions can be shortened by using the 'function' feature			
	C6.6	Extract and manipulate data and strings of texts for the purpose of their game functionality			
Information technology	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.				
	C6.7	Plan, design and create various quizzes using a variety of software.			
	C6.8	Choose appropriate software for the intended audience			
	C6.9	Combine text, images and audio to enhance quizzes			
Digital Literacy	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.				
	C6.10	***Demonstrate an understanding of their responsibility to others as well as to themselves when communicating and sharing content online***			
	C6.11	***Feel confident in having strategies to help promote a positive online image of themselves in their digital footprint.***			
	C6.12	***Understand terms such as Computer virus, Location sharing, phishing scams, spam email, Malware and Identity theft***			
	C6.13	*Know a range of ways to report inappropriate content and contact.*			
	C6.14	***Discuss the use of instant messaging in social contexts, aware of the pros and cons of using such tools.***			
iPad Competency	C6.15	To confidently use iPads and select appropriate apps to support their learning in all areas of the curriculum across the curriculum.			