

Believe



IRONSTONE ACADEMY TRUST

Enjoy

Achieve

Computing

At Normanby Primary school, we aim to deliver computing in a way which allows pupils to think creatively and promote independent learning behaviours by harnessing the power of technology as a learning tool. We maximise learning potential by creating confident, resilient digital citizens who have the transferable skills they need to be successful in an increasingly technology focused world. Using technology to enhance learning is an integral part of all learning across all subject areas. Our delivery and organisation of computing is in such a way that we do not exclusively restrict its use to a time or location but deliver the required skills 'at the point of learning,' where they become relevant and meaningful. Learners are therefore empowered to make choices about the relevance of the technology and apply it effectively.

	Foundation Stage				
	FS1	FS2			
Computing	 Knows how to operate simple equipment. Turns on CD player, uses iPad, uses remote control. Shows an interest in technological toys with knobs or pulleys/real objects e.g. cameras or mobile phones. Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images. Knows that information can be retrieved from computers. Talks about why things happen and how things work. 	Completes a simple program on a computer and ipad. Uses ICT hardware to interact with age-appropriate computer software. Respond to being given responsibility and independence with equipment. Show initiative in using equipment. Test out their experiences of using equipment at home or in other settings. Role-play things that they have seen adults do. Apply things they know into a different context. Begin to understand the processes involved in finding information from a computer, or how a piece of technology can help to complete a task. Evidence of using prior knowledge of different devices, gaining confidence and ability as they gain exposure to equipment.			

	KS1		KS2			
Our						
Learning	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Journey						
	We are learning to:	We are learning to:	We are learning to:	We are learning to:	We are learning to:	We are learning to:
Online Safety & Digital Literacy	Use technology safely Give examples of how technology is used in and out of school. Be responsible online citizens Identify ways and places people can be unkind online. Keep personal information private Create a list of rules that help keep people safe.	Use technology respectfully Search the internet safety using key words and know the implications of inappropriate searches. Know where to go for help if I am concerned Discuss whether a website is appropriate for children and identify age restrictions for some games and apps.	Use technology respectfully and responsibly Know what information is sensible to share and what is not. Identify an advert online and discuss who it is targeted at. Explore how companies use websites to promote products. Create and create a strong password. Know different ways I can get help if I am concerned Know different ways to report	Recognise acceptable and unacceptable behaviour using technology Identify comments online that may be hurtful to others. Edit messages to make sure they are kind. Create a safe online profile, explaining ways in which we could change our identity online to stay safe (e.g., using an avatar when gaming/ social media).	Understand that you have to make choices when using technology and that not everything is true and/or safe. Secure knowledge of common online safety rules and apply this to real life scenarios. Identify how online identity can be copied, shared, modified or altered. Alter a photograph. Identify ways to stay safe when using popular technologies.	Discuss the risks of online use of technology Find a describe the media can shape ideas about gender and society. Explain how an online reputation is developed and how it can impact on future life. Identify who owns information found online and what can/cannot be used. Identify how to minimise risks Focus on online activity that is

			unacceptable content and contact. Identify ways to communicate online. Explain the importance of staying safe when using email. Be able to open, respond to and attach files to emails using 2Email. They can describe appropriate email conventions when	Children will have access to their own email account and be able to open, create and attach a file to an email.	Identify ways to stay safe when using these popular technologies. Children are able to explain in detail how credible a webpage is and the information it contains. Communicate online responsibly and safely. Identify an email that we should not open and what to do with	popular. Identify the pros and cons of these services.
			communicating in this way.		spam email.	
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Programming &	Create a series of instructions	Use a range of instructions and test	l can design a sequence of	Make accurate predictions and	Combine sequences of instructions and	Explain how an algorithm works
Computer Science	Using stories and recipes Plan a journey for a programmable toy Debug simple mistakes and predict what will bappen	them Verbal teach lead instructions using pictures and stories. Write a simple programme and test it and find errors and debug	instructions, including directional instructions. Use and edit an algorithm on Tynker to achieve a specific outcome. Predict how a change in a sequence may impact	explain why something will happen Using the Robots Dot and Dash thinking shows a structure of a program in logical, achievable steps with predictions of	procedures to develop a simple game Using Swift Playgrounds learn to code 2; children will design their own game/app with action tools linking to Tynker. Using Spheros, children	Know that an algorithm is a set of instructions to perform a given task. Recapping Playgrounds create instructions and then transfer this into an algorithm for peers to follow for something topic related.
		Using Scratch junior create a simple	on the outcome of a	programming goals.	can create a game of pinball using their feet	

Our Learning Journey: Computing	
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	program that achieves a specific purpose.	program. Debug simple programs.	Debug a program Debug your own and	or soft objects as the walls.	Design an algorithm by breaking a
	program that achieves a specific purpose.	program. Debug simple programs. Write programs to achieve specific goals Explain what will happen next in a program. Solve problems by breaking them down into smaller parts. Understand inputs and outputs. Know the difference between input and output devices.	Debug a program Debug your own and others programs. Experiment with variables Use code.org to experiment creating an online game that uses variables including scores boards & timers (Flappy birds). Understand what networks do and how they provide multiple services Begin to understand networks and how they work – including the school network and the internet.	or soft objects as the walls. Use programming to control an on-screen sprite Using Playgrounds, children will program Byte to perform tasks and solve puzzles. Give robots specific instructions that takes them from A to B Program Spheros to a given route and debug code confidently. Work with variables Using Swift playgrounds, children will code using variables, creating their	Design an algorithm by breaking a problem up Using Playgrounds, children can break puzzles into parts in order to figure out the commands needed. Recognise that different solutions can exist for the same problem Children to identify that they can achieve the same outcome using differing algorithms such as moving forward 2 steps and using a Boolean state for every 2 steps. Use logical reasoning to detect errors in algorithms
			Explain the difference between the internet and World Wide Web.	own variables, creating their own variables to collect gems and solve puzzles. Using Spheros, children will programme the robot to move from	In Playgrounds and Tynker, children to explore their algorithms to solve a particular puzzle, detecting any
			Know what a WAN and LAN are and	start to end incorporating turns, adding in light	problems which cause them to not achieve what they set out to.

				describe how they access the internet.	functions, sound functions and degrees of movement.	To use more complex variables Look at Boolean states and minimising the use of variables to complete the same task Using variables with more than one option, grouping them and using other indicators to start the variable.
	Create digital content Children will use	Organise, retrieve and manipulate digital	Use a range of software and	Select software to accomplish specific	Understand how search engine results	Select, use and combine software on
Information	keyboard skills to	content	manipulate digital	goals.	are selected and	a range of digital
Technology	create an email.	Use appropriate	images.	Create a presentation	ranked.	devices
		software to create a	Use an alternative	to be delivered to an	Understand how	
		poster or fact sheet	software package to	audience. Experiment	word order and	Enter text and
	Store and retrieve	about a given subject.	create an information	with the features of	personal preference	numbers into a
	digital content	Insert and resize a	page about a given	the software chosen	in search engine	spreadsheet. Identify
	Use a camera to take	picture and change	subject, to include	then select	results are ranked.	and refer to cells as
	photos, record sound	font/style	text and pictures	appropriately to		rows and columns
	and play back.		selected form the	create a presentation.		use the SUM
		Navigate the web to	internet. Insert text	Use a class blog to	Make clear	formulae. Edit data
		complete simple	and pictures using	present work to a	connections to the	and observe the
		Access appropriate	Copy and paste.	wider audience.	audience when	Create a graph from
		online resources for	nictures Arrange		creating digital	data entered Design
		research	annronriately	Edit a video and uso	content	and create
			Change the size font	a green screen	Design and create	spreadsheet for
		Collect information		effectively.	their own content on	purpose.
					the internet.	

Collect, analyse, evaluate and present data and information using software such 2Graph.	 and colour when appropriate. Collect and present information. Organise data using a database and retrieve specific data collected. Search the web in different ways. Use simple searches to retrieve digital content and share with others. 	Create and video for a specific purpose and edit the video for maximum effect. Use a green screen and understand how to edit this into a video.	Produce and upload a video Create and video for a specific purpose and share the video to a wider audience.	Use a range of technology for a specific project Collaborate effectively across online platforms, sharing ideas to create high quality work across a range of genres.
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	Key stage 1	Key stage 2
	Pupils should be taught to:	Pupils should be taught to:
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 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. 	 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.

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