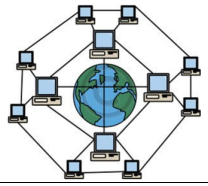
Normanby Primary School

Our Learning Journey: Computing

IRONSTONE ACADEMY TRUST

Enjoy Believe 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.

	**KS1**		**KS2**			
Our Learning Journey	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Online Safety & Digital Literacy	We are learning to: **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.	We are learning to: **Use technology respectfully** Search the internet safety using key words and know the implications of inappropriate searches.	We are learning to: **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	We are learning to: **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	We are learning to: **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	We are learning to: **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

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	Keep personal information private Create a list of rules that help keep people safe.	**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.	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 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 communicating in this way.	profile, explaining ways in which we could change our identity online to stay safe (e.g., using an avatar when gaming/ social media). **Communicate online responsibly** Children will have access to their own email account and be able to open, create and attach a file to an email.	scenarios. Identify how online identity can be copied, shared, modified or altered. Alter a photograph. **Identify ways to stay safe when using popular technologies.** 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 spam email.	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 popular. Identify the pros and cons of these services.

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Programming & Computer Science	**Create a series of instructions** Using stories and recipes **Plan a journey for a programmable toy** Debug simple mistakes and predict what will happen.	**Use a range of instructions and test them** Verbal teach lead instructions using pictures and stories. **Write a simple programme and test it and find errors and debug** Using Scratch junior create a simple program that achieves a specific purpose.	**I can design a sequence of 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 on the outcome of a 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.	**Make accurate predictions and 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 programming goals. **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**	**Combine sequences of instructions and 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 can create a game of pinball using their feet 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.	**Explain how an algorithm works** 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. **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.

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				Begin to understand networks and how they work – including the school network and the internet. Explain the difference between the internet and World Wide Web. Know what a WAN and LAN are and describe how they access the internet.	**Work with variables** Using Swift playgrounds, children will code using variables, creating their own variables to collect gems and solve puzzles. Using Spheros, children will programme the robot to move from start to end incorporating turns, adding in light functions, sound functions and degrees of movement.	**Use logical reasoning to detect errors in algorithms** In Playgrounds and Tynker, children to explore their algorithms to solve a particular puzzle, detecting any problems which cause them to not achieve what they set out to. **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.
Information Technology	**Create digital content** Children will use keyboard skills to create an email. **Store and retrieve digital content**	**Organise, retrieve and manipulate digital content** Use appropriate software to create a poster or fact sheet about a given subject. Insert and resize a	**Use a range of software and manipulate digital images.** Use an alternative software package to create an information page about a given subject, to include	**Select software to accomplish specific goals.** Create a presentation to be delivered to an audience. Experiment with the features of the software chosen then select	**Understand how search engine results are selected and ranked.** Understand how word order and personal preference	**Select, use and combine software on a range of digital devices** Enter text and numbers into a spreadsheet. Identify and refer to cells as

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	Use a camera to take photos, record sound and play back.	picture and change font/style **Navigate the web to complete simple searches** Access appropriate online resources for research. **Collect information.** Collect, analyse, evaluate and present data and information using software such as 2Graph.	text and pictures selected form the internet. Insert text and pictures using copy and paste. Format text and pictures. Arrange appropriately. Change the size, font 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.	appropriately to create a presentation. Use a class blog to present work to a wider audience. **Edit a video and use a green screen effectively.** 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.	in search engine results are ranked. **Make clear connections to the audience when designing and creating digital content** Design and create their own content on the internet. **Produce and upload a video** Create and video for a specific purpose and share the video to a wider audience.	rows and columns use the SUM formulae. Edit data and observe the effect on the results. Create a graph from data entered. Design and create spreadsheet for purpose. **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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National Curriculum	**Key stage 1** 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.	**Key stage 2** 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.