Manland Primary School-Computing Curriculum Intent

<table>
<tr><td>Reception</td><td colspan="3">The EYFS framework is structured very differently to the national curriculum as it is organised across seven areas of learning rather than subject areas. Children in Reception will develop the prerequisite skills they need to access the Key Stage 1 Computing Curriculum through a range of activities. These include both taught sessions and access to continuous provision.</td></tr>
<tr><td></td><td colspan="3">Early Learning Goals that link to Computing:

Children will:
• Use a range of technology resources such as torches with switches, talking tins, voice-recording toys,
• Use technology resources such as, beebots, class iPad and interactive whiteboards
• Be taught how to use the resources for different purposes e.g. iPad to watch videos, play games, take photographs and listen to stories
• Begin to use instructional language e.g. to give directions
Children will know:
• How to keep themselves safe when using technology
• How to use simple programs on electronic devices
• How to use hardware to interact with age-appropriate computer software
• How to create content such as video recordings, stories and draw a picture on screen

Key Vocab:
iPad, computer, program, turn on, turn off, battery, plug in, touch screen, mouse</td></tr>
<tr><td></td><td>Autumn</td><td>Spring</td><td>Summer</td></tr>
<tr><td>Year 1</td><td><u>National curriculum Content Area:</u>

<u>Computer Science</u>
• design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts

• understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute</td><td><u>National curriculum Content Area:</u>

<u>Digital literacy</u>
• use technology purposefully to create, organise, store, manipulate and retrieve digital content

• 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.</td><td><u>National curriculum Content Area:</u>

<u>Digital literacy</u>
• use technology purposefully to create, organise, store, manipulate and retrieve digital content

• 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.</td></tr>
</table>

	by following precise and unambiguous instructions • create and debug simple programs • 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. **Unit Title:We are Treasure Hunters** **Pupils will know that:** •You can solve problems using programmable toys **Pupils will learn to:** •Understand that a programmable robot can be controlled by inputting a sequence of instructions. •Develop and record sequences of instructions as an algorithm. •Program a robot to follow their algorithm. •Predict how their programs will work. •Debug programs. **Key Vocabulary:** Algorithm, Bug, Debug, Input, Logical Reasoning, Output, Program	**Unit Title: We are Digital Artists** **Pupils will know that:** •You can use the iPads to create paintings inspired by the work of famous artists **Pupils will learn to:** • Know how to select and set brushes and colours. •Create artwork in a range of styles on iPads. To use the undo function if mistakes are made and to encourage experimentation. •Use multiple layers in their art. •Transform layers. •Paint on top of photographs. **Key Vocabulary:** Analogue, Pixel, Undo, Zoom, bitmap, digital	**Unit Title: We are Publishers** **Pupils will know that:** •You can create a multimedia eBook about what you enjoy and have achieved **Pupils will learn to:** •Plan a small multimedia eBook. •Choose and import images. •Record audio commentary. Add and format titles and other text. •Think carefully about protecting their privacy. •Respect other people's copyright. •Revise and improve their work. **Key Vocabulary:** Audio, clip art,eBook, font, images, safe search

Manland Primary School-Computing Curriculum Intent

Year 2	**National Curriculum Content Area:** **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 • 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 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. **Unit Title We are Astronauts** **Pupils will know that:** •You can programme a sprite to move around the screen. **Pupils will learn to:** •Plan a sequence of instructions to move sprites in ScratchJr. •Create, test and debug programs for sprites in ScratchJr. •Work with input and output in ScratchJr. •Use repetition in their programs. •Design costumes for sprites. **Key Vocabulary:**	**National curriculum Content Area:** **Information Technology** • 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. **Unit Title We are Safe Researchers** **Pupils will know that:** •You can retrieve digital content from the Internet for a particular purpose and use mind mapping software. **Pupils will learn to:** •Develop collaboration skills through working as part of a group. •Develop research skills through searching for information on the Internet. •Think through privacy implications of their use of search engines. •Be more discerning in evaluating online information. •Improve note-taking skills through the use of mind mapping. •Develop presentation skills through creating and delivering a multimedia presentation. **Key Vocabulary:** Google, custom search, presentation, safe search, search engine	**National curriculum Content Area:** **Digital literacy** • use technology purposefully to create, organise, store, manipulate and retrieve digital content • 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. **Unit Title: We are Animators** **Pupils will know that:** • You can plan, film and add audio to a stop-motion animation. **Pupils will learn to:** •Know how animation works. •Use storyboards to plan an animation. • Create their own original characters, props and backgrounds for an animation. •Film, review and edit a stop-motion animation. •Record audio to accompany their animation. •Provide constructively critical feedback to their peers. **Key Vocabulary:** Animation, background, character, flipbook animation, frame, onion- skinning, prop, soundtrack, stage, stop-motion, storyboard.

	Algorithm, bug, code, debug, input, output, program, repetition, scratch, sprite		
Year 3	**National curriculum Content Area:** **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 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 • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. **Unit Title: We are Programmers** **Pupils will know that:** • You can create your own animation in Scratch **Pupils will learn to:** •Plan and create an algorithm for an animated scene in the form of a storyboard. •Write a program in Scratch to create the animation, including characters, dialogue, costumes, backdrops and sound.	**National curriculum Content Area:** **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 technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. **Unit Title: We are Bug Fixers** **Pupils will know that:** • You can recognise common errors and practice solving them **Pupils will learn to:** •Develop a number of strategies for finding errors in programs.	**National curriculum Content Area:** **Information Technology** • 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 search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content **Unit Title: We are Opinion Pollsters** **Pupils will know that:** • You can create an online opinion poll **Pupils will learn to:** •Understand some elements of survey design. • Understand some ethical and legal aspects of online data collection. •Use the Internet to facilitate data collection. •Gain skills in using charts to analyse data. • Gain skills in interpreting results.

	•Review their animation programs and correct mistakes. **Key Vocabulary:** Abstraction, algorithm, code, decomposition, event, output, parallel processing, program, repetition, variable	•Build up resilience and strategies for problem solving. •Increase their knowledge and understanding of Scratch. •Recognise a number of common types of bugs in software. **Key Vocabulary:** Abstraction, algorithm, bug, code, debug, event, input, output, parallel processing, program, repetition, sequence, variable	**Key Vocabulary:** Data, data centre, data protection, digital footprint, filter (database) personal information, survey.
Year 4	**National curriculum Content Area:** **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 technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. **Unit Title: We are Makers** **Pupils will know that:** • You can write and test your own micro:bit project **Pupils will learn to:** •Learn about the input – process – output model of computation.	**National curriculum Content Area:** **Digital literacy** • 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 **Unit Title : We are Bloggers** **Pupils will know that:** • You can create a media-rich blog. **Pupils will learn to:** •Become familiar with blogs as a medium and a genre of writing. •Create a sequence of blog posts on a theme. •Incorporate additional media.	**National curriculum Content Area:** **Information Technology** • 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 search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content **Unit Title : We are Meteorologists** **Pupils will know that:** • You can take on the role of meteorologists and weather presenters. **Pupils will learn to:** •Understand different measurement techniques for weather – both analogue and digital. •Use computer-based data logging to automate the recording of some weather data.

Manland Primary School-Computing Curriculum Intent

	•Program using the MakeCode blockbased environment. •Test and debug programs they write, using an on-screen simulator and the micro:bit. •Convert and transfer a program written on screen to the micro:bit. **Key Vocabulary:** Accelerometer, algorithm, if/else if/else, LED, makecode, Micro:bit, code, simulator, source code, variable	•Comment on the posts of others. •Develop a critical, reflective view of a range of media, including text. **Key Vocabulary:** Hyperlinks, hypertext mark-up language (HTML), uniform resource locator (URL) web server	•Use spreadsheets to create charts. •Analyse data, explore inconsistencies in data and make predictions. •Practise using presentation and video software **Key Vocabulary:** Analogue, data, dataset, digital, field, filter (database), input, interface, record
Year 5	**National curriculum Content Area:** **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 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 • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. **Unit Title: We are Game Developers** **Pupils will know that:** •You can a plan simple computer game **Pupils will learn to:**	**National curriculum Content Area:** **Information Technology** • 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 search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content **Unit Title: We are Web Developers** **Pupils will know that:** • You can create your own website about online safety **Pupils will learn to:** •Know the name and function of components making up the school's network.	**National curriculum Content Area:** **Digital literacy** • 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 **Unit Title: We are Adventure Gamers** **Pupils will know that:** • You can create an interactive, non-linear adventure game. **Pupils will learn to:** •Understand how to plan a non-linear presentation. •Create text as part of a presentation.

Manland Primary School-Computing Curriculum Intent

	•Create original artwork and sound for a game. •Design and create a computer program for a computer game, which uses sequence, selection, repetition and variables. •Detect and correct errors in their games. •Use iterative development techniques. **Key Vocabulary:** Algorithm, bug, code, debug. Iterative development, logical reasoning, program,	•Understand how information is passed between the components that make up the Internet. •Understand what the source code for a web page looks like and how it can be edited. •Know how a website can be structured. •Add content to a web page. **Key Vocabulary:** Hyperlinks, hypertext mark-up language (HTML), hypertext transfer protocol (HTTP), internet protocol (IP) addresses, network switch, packets of data, uniform resource locator (URL), world wide web	•Add and edit images in a presentation. •Use hyperlinks for navigation between the slides of a presentation. •Record and add audio narration to a presentation. • Use commenting tools to give feedback on a presentation. **Key Vocabulary:** Hyperlink, mp3, pixel, safe search
Year 6	**National Curriculum Content Area:** **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 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 • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. **Unit Title: We are Toy Makers** **Pupils will know:**	**National curriculum Content Area:** **Information Technology** • 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 search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content **Unit Title: We are Publishers** **Pupils will know that:** • You can produce a class year book or school magazine **Pupils will learn to:** •Manage or contribute to large collaborative projects, facilitated using online tools. •Write and review content. •Source digital media while demonstrating safe, respectful and responsible use.	**National curriculum Content Area:** **Digital literacy** • 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 **Unit Title: We are Advertisers** **Pupils will know that:** • You can shoot and edit a final version of an advert **Pupils will learn to:** •Think critically about how video is used to promote a cause. •Create a storyboard for an effective advert for a cause . • Work collaboratively to shoot original footage and source additional content.

	• You can make a modification to make a soft toy interactive **Pupils will learn to** • know how computers use stored programs to connect input to output. •Generate and evaluate designs in response to a brief. •Plan a complex project by decomposing it into smaller parts. •Work with physical components of a system. •Design and write a program for an embedded system. •Use criteria to provide others with feedback on their work **Key Vocabulary:** Accelerometer, Bluetooth, decomposition, embedded system, input, interactive, light-emitting diode (LED), makecode, micro:bit, microprocessor, output, simulator	•Design and produce a high-quality print document. **Key Vocabulary:** Desktop publishing (DTP), eBook, ePub, folder, image, portable document format (PDF)	• Acknowledge intellectual property rights. • Work collaboratively to edit the assembled content to make an effective advert. **Key Vocabulary:** Export, final cut, rough cut, rushes, storyboard