St Matthew's Catholic Primary School

Computing Milestones

	Computer Science	Information Technology	Digital Literacy	Digital Citizenship
Reception	Be able to give a floor robot instruction to make it move. Use simple software and explain what you are doing. Understand what happens when you click a button or touch an icon.	Talk about different kinds of information such as pictures, videos, text and sound. Use a mouse and touch screen to move objects on a screen. Create shapes and text on a screen.	Can identify a device that uses technology. Ask permission before using the Internet. Tell an adult if something worrying or unexpected happens whilst using technology.	Talk about technology that is used at home, in school and in the world around them. Use a safe part of the Internet to explore, play and learn.
At St Matthew's Catholic Primary School, we integrate Computing skills throughout the EYFS curriculum. While not a standalone subject, our approach ensures young learners acquire digital literacy and problem-solving skills to prepare them for a technology-driven future.				
Year 1	Give instructions to a friend and follow their instructions to move around a space. Describe what happens when buttons are pressed on a robot or device.	Talk about the different ways in which information can be shown. Use technology to collect information, including photos, videos and sound.	Why we need passwords. Understand that we must keep passwords private. Explain what personal information is.	Recognise that a range of digital devices and products can be considered computers.

	Press buttons in the correct order to make a robot follow a short sequence. Understand what an algorithm is and be able to create a simple algorithm. Understand and explain how algorithms are used in every day life. Begin to predict what will happen for a short sequence of instructions. Begin to use different software or applications to create movement and patterns on a screen. Use the word debug to correct an algorithm that doesn't work in the way it was intended.	Sort different kinds of information and present it to others. Add information to a pictogram and talk about their findings. Use software with support, to create, store and edit digital content using appropriate file and folder names. Use the keyboard or a word bank on a device to enter text into a program. Understand some of the basic functions on a keyboard (Backspace, Caps Lock, Enter) Save information in a specific place and retrieve it again. Use technology to collect information, including photos, videos and sounds.	Understand that we must keep personal information private. Communicate safely and respectfully online. Know what to do when concerned about online content. Know what to do if someone tries to contact you online.	Recognise the ways in which technology is used in their homes and community. Understand that computers have no intelligence and can do nothing without being programmed. Begin to identify some of the benefits to using technology.
Year 2	Understand what an algorithm is and demonstrate simple linear algorithms.	Create a graph or chart using data collected on a specific topic area.	Understand the need to keep a password private.	Children can explain why they use technology in the

	Be able to explain the order needed to do things to make something happen and to talk about it as an algorithm. Programme a robot or software to do a particular task. Look at a basic program and explain what will happen. Use programming software and applications to make objects move. Use logical reasoning to predict and debug more complex programs. Can create and debug with improved confidence & efficiency. Begin to program using simple block code.	Talk about the data that is shown in their chart or graph. Explain how investigating data can be used to answer a question. Use a variety of software to manipulate and present digital content in different ways with increasing independence. Talk about the different ways to use technology to collect information, including a camera or sound recorder. Use the keyboard on their device to add, delete, edit and format text. Talk about an online tool that will help them to share their ideas with other people Save and open files on the device they use from a specific file location.	Understand the need to keep personal information private. Demonstrate the use of technology responsibly in terms of how we use it and the time we spend using it. Know how to report inappropriate content or contact online.	classroom, in their homes and in the community. Identify the benefits of using technology, such as creating content and communicating efficiently. Can identify a computer by knowing that it has inputs, a processor and outputs. Can identify parts of a computer including what an input and output is.

Year 3	Understand how an algorithm is implemented using a sequence of precise instructions. Can predict the outcome of a sequence of precise instructions. Repeatedly test a program and recognise when they need to debug it. Detect a problem in an algorithm, which could result in a different outcome to the one intended. Understand what inputs and outputs are, how they can be used. Provide examples of how to use inputs and outputs effectively. Design, write, execute and debug programs of increasing complexity that accomplish a specific goal.	Understand the difference between data and information. Talk about the different ways data can be converted into information. Search a ready-made database to answer specific questions. Collect data to help answer questions about a specific topic or theme.7 Add to and edit an existing database. Combine a mixture of text, graphics and sound to share ideas and learning. Use appropriate keyboard commands to amend text. Be able to effectively use a spell checker. Evaluate their work and improve its effectiveness.	Children consider their responsibilities and actions to others online. Children consider that all of the media they see could have been altered. Understand how to use a search engine responsibly and safety.	Save and retrieve work online, on the school network and their own device. Tell you ways to communicate with others online. Knows how navigate the web responsibly. Can carry out effective web searches to collect digital content. Think about whether they can use images that they find online in their own work.

	Use logical reasoning to predict and debug more complex programs including inputs and outputs.	Use an appropriate tool to share their work online.		
Year 4	Design simple algorithms using loops and repeats, whilst detecting and correcting errors is debugging. Write and execute an efficient program, using loops such as forever, repeat & repeat until commands. Decompose a problem into smaller parts with some verbal reasoning. Has an understanding of how sequencing, using inputs and repetition in programs has specific effects on the output, works with 'loops' and understands their effect. Recognise that an algorithm will help to sequence more complex programs.	Demonstrate the different ways data can be organised. Demonstrate the different ways data can be converted into information. Make a branching database. Collect data and identify where it could be inaccurate. Plan, create and search a database. Select the best way to present data to a specific audience. Log data using a device. Use photos, video and sound to create an atmosphere when presenting to different audiences.	Understand that media can be edited online for advertising and other purposes. Recognise what is acceptable and unacceptable behavior when using technology and online services. Children understand how effective a strong password is and what a strong password looks like.	Understand the difference between the Internet and online services such as the World Wide Web, instant messaging and email. Tell you whether a resource they are using is from the World Wide Web, the school network or their own work. Identify key words to use when searching safely on the World Wide Web. Show an awareness of a range of Internet services such as the World Wide Web, email and instant messaging. Explain how to check who owns photos, text and clipart.

	Use logical reasoning to predict and debug more complex programs including loops and repeats.	Be confident to explore new media to extend what they can achieve. Change the appearance of text to increase its effectiveness depending on the audience or mood. Create, modify and present documents for a particular purpose and audience. Use a keyboard confidently and make use of a spellchecker to write and review their work. Use an appropriate tool to share their work and collaborate online. Be able to evaluate other people's work and give them constructive feedback to help them improve their work.		
Year 5	Program a condition that uses a sensor to detect a change, which can select an action within a program.	Choose an appropriate tool to help them collect data. Present data in an appropriate way depending on the theme or audience.	Be aware of their digital footprint. Understand the dangers of building online relationships.	Use different online tools for different purposes. Use a search engine effectively to find appropriate information and

	Decomposes more open-ended problems into smaller parts, provides some reasoning for their choices. Approaches a range of problems using computationally thinking concepts, helping them to design other algorithms for other specific outcomes. Design, write and execute an efficient program, including selection (IF…THEN) command. Change an input to a program to achieve a different output. Use logical reasoning to predict and debug more complex programs including selection. Uses programs linked to physical systems and sensors e.g. the alarm goes off when the sensor is triggered.	Use a spreadsheet and database to collect, record and evaluate data. Search a database using different operators to refine a search. Talk about errors in data and suggest how it could be checked. Use text, photo, sound and video editing tools to evaluate and refine their work. Be able to use a variety of familiar and unfamiliar software by using a pre existing skill set. Select, use and combine the appropriate technology tools to create effects in media. Select an appropriate online or offline tool to create and share ideas.	Explain what the consequences might be to using technology inappropriately or accessing inappropriate content intentionally	check the reliability of a website. Understand how search results are selected and ranked and the algorithms they use. Recognise and evaluate different types of information they find on the World Wide Web. Think about the reliability of information they read on the World Wide Web or other Internet services (Fake News)

	Design, write and execute an efficient program, which demonstrates and understanding of the difference between, and appropriate use of IF…THEN, IF…THEN…ELSE, and nested IF statements.	Evaluate and improve their own work and support others in improving their work. Acknowledges sources of information appropriately.		
Year 6	Understand the importance of planning, testing and correcting algorithms. Demonstrate a range of different strategies to solve a problem including: abstraction, decomposition, logic & evaluation. Understand why sequence & patterns are important when creating simple algorithms that are part of a more complex program. Gives reasoning for each step within algorithms and applying them to a program.	Select the most effective tool to collect data for their investigation. Check the data they collect for accuracy and plausibility, Plan the process needed to investigate a set environment or setting. Interpret and present the data they collect. Use the skills developed to interrogate a database. Use a range of strategies to increase the accuracy of keyword searches. Makes	Be aware of fake news and how to dissect it. Understand the difference between misinformation and disinformation. Understand what Copywriting is and using someone else's work responsibly. Manage their conduct and contact appropriately and safely when using technology and online services.	Explain the Internet services they need to use for different purposes. Describe the different parts of a webpage. Understands how to construct a website using basic HTML tags. Explain what copyright is and acknowledge the sources of information that they find online. Understands how data is transmitted across a network.

	Understand & develop complex flow diagrams. Use a variable to increase programming possibilities. Use a variable and relational operators (e.g. < = >) within a loop to stop a program. Evaluate the effectiveness and efficiency of an algorithm while continually testing the programming of that program. Use different inputs (including sensors) to control a device or onscreen action and predict what will happen. Use logical reasoning to predict and debug more complex programs including: selection, variables and operators.	confident inferences about their effectiveness. Talk about audience, atmosphere and structure when planning a particular media outcome. Combine a range of media, recognising the contribution of each to achieve a particular outcome. Confidently identify the potential of unfamiliar technology and how it can be used effectively. Explain why they select a particular online tool for a specific purpose. Be digitally discerning when evaluating the effectiveness of their own work and the work of others. Recognise the importance of copyright and how to		Understand what IP is and how it's used. Can explain how networks use the Internet to send and receive data

		acknowledge the sources of information.		