



Scheme of Work / Progression of Skills

Computing

	Computing systems and networks (computer systems, computer networks)	Programming (programming, algorithms, design and development)	Data and information (data and information)	Creating media (creating media and design and development)	Online safety
Y1	Technology around us Recognising technology in school and using it responsibly.	Moving a robot Writing short algorithms and programs for floor robots, and predicting program outcomes. Programming animations Designing and programming the movement of a character on screen to tell stories.	Grouping data Exploring object labels, then using them to sort and group objects by properties.	Digital painting Choosing appropriate tools in a program to create art, and making comparisons with working non-digitally. Digital writing Using a computer to create and format text, before comparing to writing non-digitally.	<ul style="list-style-type: none"> - Online relationships - Online bullying - Health, wellbeing and lifestyle - Privacy and security
Y2	Information technology around us Identifying IT and how its responsible use improves our world in school and beyond.	Robot algorithms Creating and debugging programs, and using logical reasoning to make predictions. Programming quizzes Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz.	Pictograms Collecting data in tally charts and using attributes to organise and present data on a computer.	Digital photography Capturing and changing digital photographs for different purposes. Making music Using a computer as a tool to explore rhythms and melodies, before creating a musical composition.	<ul style="list-style-type: none"> - Copyright and ownership - Managing online information - Self-image and identity - Online reputation
Y3	Connecting computers Identifying that digital devices have inputs, processes and outputs, and how devices can be connected to make networks.	Sequencing sounds Creating sequences in a block-based programming language to make music. Events and actions in programs Writing algorithms and programs that use a range of events to trigger sequences of actions.	Branching databases Building and using branching databases to group objects using yes/no questions.	Stop-frame animation Capturing and editing digital still images to produce a stop-frame animation that tells a story. Desktop publishing Creating documents by modifying text, images, and page layouts for a specified purpose.	<ul style="list-style-type: none"> - Online relationships - Online bullying - Health, wellbeing and lifestyle - Privacy and security
Y4	The internet Recognising the internet as a network of networks including the WWW, and why we should evaluate online content.	Repetition in shapes Using a text-based programming language to explore count-controlled loops when drawing shapes. Repetition in games Using a block-based programming language to explore count-controlled and infinite loops when creating a game.	Data logging Recognising how and why data is collected over time, before using data loggers to carry out an investigation.	Audio editing Capturing and editing audio to produce a podcast, ensuring that copyright is considered. Photo editing Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled.	<ul style="list-style-type: none"> - Copyright and ownership - Managing online information - Self-image and identity - Online reputation
Y5	Sharing information Recognising IT systems around us and how they allow us to search the internet.	Selection in physical computing Exploring conditions and selection using a programmable microcontroller. Selection in quizzes Exploring selection in programming to design and code an interactive quiz.	Flat-file databases Using a database to order data and create charts to answer questions.	Video editing Planning, capturing and editing video to produce a short film. Vector drawing Creating images in a drawing program by using layers and groups of objects.	<ul style="list-style-type: none"> - Online relationships - Online bullying - Health, wellbeing and lifestyle - Privacy and security
Y6	Internet communication Identifying and exploring how data is transferred and information is shared online.	Variables in games Exploring variables when designing and coding a game. Sensing Designing and coding a project that captures inputs from a physical device.	Introduction to spreadsheets Answering questions by using spreadsheets to organise and calculate data.	Webpage creation Designing and creating webpages, giving consideration to copyright, aesthetics and navigation. 3D modelling Planning, developing and evaluating 3D computer models of physical objects.	<ul style="list-style-type: none"> - Copyright and ownership - Managing online information - Self-image and identity - Online reputation

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Y1	<p>Technology around us Develop understanding of technology and how it can help them in their everyday lives. Become familiar with the different components of a computer by developing keyboard and mouse skills. Consider how to use technology responsibly. paintz.app</p>	<p>Moving a robot Introduction to early programming concepts. Explore using individual commands, both with other children and as part of a computer program. Identify what each command for the floor robot does and use that knowledge to start predicting the outcome of programs. Introduction to the early stages of program design through the introduction of algorithms. Beebots</p> <p>Programming animations Introduction to on-screen programming through ScratchJr. Exploring the way a project looks by investigating sprites and backgrounds. Use programming blocks to use, modify and create programs. Introduction to the early stages of program design through the introduction of algorithms. ScratchJr</p>	<p>Grouping data Introduces data and information, including labelling, grouping and searching. Searching is a common operation in many applications and requires an understanding that to search data it must have labels. Assigning data (images) with different labels in order to demonstrate how computers are able to group and present data. Microsoft PowerPoint</p>	<p>Digital painting Develop understanding of a range of tools used for digital painting. Use these tools to create own digital paintings, while gaining inspiration from a range of artists' work. Consider preferences when painting with and without the use of digital devices. Microsoft Paint or Purple Mash</p> <p>Digital writing Develop understanding of the various aspects of using a computer to create and manipulate text. Become more familiar with using a keyboard and mouse to enter and remove text. Consider how to change the look of their text and be able to justify their reasoning for making these changes. Consider the differences between using a computer to create text and writing on paper. Explain which method they prefer and explain their reasoning for choosing this. Microsoft Word</p>
Online safety	<p>Online relationships - I can recognise that there may be people online who could make someone feel sad, embarrassed or upset and can give examples of when to speak to an adult.</p> <p>Online bullying - I can describe how to behave online in ways that do not upset others and can give examples.</p> <p>Health, wellbeing and lifestyle - I can explain rules to keep myself safe when using technology, both in and beyond the home.</p> <p>Privacy and security - I can explain that passwords are used to protect information, accounts and devices. I can recognise detailed examples of personal information and explain why it is important to talk to an adult before sharing information online.</p>			

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Y2	<p>Information technology around us Develop their understanding of what information technology is and begin to identify examples. Discuss where they have seen IT in school and beyond in settings such as shops, hospitals and libraries. Investigate how IT improves our world and learn about the importance of using IT responsibly. Microsoft PowerPoint</p>	<p>Robot algorithms Develop understanding of instructions in sequences and the use of logical reasoning to predict outcomes. Use given commands in different orders to investigate how the order affects the outcome. Learn about design in programming. Develop artwork and test it for use in a program. Design algorithms and then test those algorithms as programs and debug them. Beebots Programming quizzes Builds on Y1 ScratchJr unit. Begin to understand that sequences of commands have an outcome and make predictions based on their learning. Use and modify designs to create their own quiz questions in ScratchJr and realise these designs in Scratch Jr using blocks of code. Evaluate their work and make improvements to their programming projects. ScratchJr</p>	<p>Pictograms Understand what the term data means and how data can be collected in the form of a tally chart. Learn the term 'attribute' and use this to help them organise data. Present data in the form of pictograms and finally block diagrams. Use data presented to answer questions. i2dataPictogram</p>	<p>Digital photography Recognise that different devices can be used to capture photographs and gain experience capturing, editing and improving photos. Use this knowledge to recognise that images they see may not be real. Digital cameras Making music Use a computer to create music. Listen to a variety of pieces of music and consider how music can make them think and feel. Compare creating music digitally and non-digitally. Look at patterns and purposefully create music. Chrome music lab</p>
Online safety	<p>Copyright and ownership - I can explain that work I create belongs to me and that content on the internet may belong to other people. I can save my work under a suitable title.</p> <p>Managing online information - I can use simple keywords in search engines. I can demonstrate how to navigate a simple webpage to get to information I need (e.g. home, back buttons). I can explain what voice activated searching is and how it might be used and know it is not a real person, e.g. Siri. I can explain why some information I find online may not be real or true.</p> <p>Self-image and identity - I can explain how other people may look and act differently online and offline. I can give examples of issues online that might make someone feel sad, worried, uncomfortable or frightened; I can give examples of how they might get help.</p> <p>Online reputation - I can explain how information put online about someone can last for a long time. I can describe what information I should not put online without asking a trusted adult first. I know who to talk to if something has been put online without consent or it is incorrect.</p>			

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Y3	<p>Connecting computers Develop understanding of digital devices with an initial focus on inputs, processes and outputs. Compare digital and non-digital devices. Introduction to computer networks, including devices that make up a network's infrastructures, such as wireless access points and switches. Discover the benefits of connecting devices in a network. Any painting program</p>	<p>Sequencing sounds Explore sequencing in programming through Scratch. Introduction to the programming environment. Introduction to a selection of motion, sound and event blocks which will be used to create own programs, featuring sequences. Scratch Events and actions in programs Consolidate prior learning on sequencing and explore the links between events and actions. Move a sprite in four directions (up, down, left and right). Explore movement within the context of a maze, using design to choose an appropriately sized sprite. Introduction to programming extensions through the use of Pen blocks. Draw lines with sprites and change the size and colour of the lines. Scratch</p>	<p>Branching databases Understand what a branching database is and how to create one. Use yes/no questions to gain an understanding of what attributes are and how to use them to sort groups of objects. Create physical and on-screen branching databases. Create an identification tool using a branching database and test it. Consider real-world applications for branching databases. j2data Branch, Pictogram and Purple Mash</p>	<p>Stop-frame animation Use a range of techniques to create a stop-frame animation using tablets. Apply these skills to create a story-based animation. Add other types of media to their animation, such as music and text. iMotion (app for iOS) Desktop publishing Know the terms 'text' and 'images' and understand that they can be used to communicate messages. Use desktop publishing software and consider careful choices of font size, colour and type to edit and improve premade documents. Introduction to the terms 'templates', 'orientation' and 'placeholders' and begin to understand how these can support them in making their own template for a magazine front cover. Add text and images to create their own pieces of work using desktop publishing software. Look at range of page layouts thinking carefully about the purpose of these and evaluate how and why desktop publishing is used in the real world. Adobe Spark</p>
Online safety	<p>Online relationships - I can describe ways people with similar likes and interest can get together online. I can explain what is meant by trusting someone online and why it is different to liking someone online. I can explain the importance of giving and gaining permissions before sharing information on line.</p> <p>Online bullying - I can describe appropriate ways to behave to other people. I can give examples of how bullying behaviour could appear online and how to get support.</p> <p>Health, wellbeing and lifestyle - I can give examples of the positive and negative impact of screen use. I can explain why activities have age-restrictions and why it is important to follow them.</p> <p>Privacy and security - I can describe strategies for creating and keeping passwords safe. I can give reasons why people should only share information with people that they trust. I can describe how connected devices can collect and share people's information.</p>			

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Y4	<p>The internet Apply knowledge of networks to appreciate the internet as a network of networks which need to be kept secure. Learn that the WWW is part of the internet and explore the WWW for themselves in order to learn about who owns content and what they can access, add and create. Evaluate online content to decide how honest, accurate or reliable it is and understand the consequences of false information. Various websites</p>	<p>Repetition in shapes Create programs by planning, modifying and testing commands to create shapes and patterns. Use Logo, a text-based programming language. Repetition and loops within programming. FMSLogo Repetition in games Explore concept of repetition in programming using Scratch. Discover similarities between Logo and Scratch. Explore the difference between count-controlled and infinite loops and use their knowledge of modify existing animations and games using repetition. Design and create a game which uses repetition, applying stages of programming design throughout. Scratch</p>	<p>Data logging Recognise how and why data is collected over time. Consider the senses that humans use to experience the environment and how computers can use special input devices called sensors to monitor the environment. Collect data as well as access data captured over long periods of time. Look at data points, data sets and logging intervals. Use a computer to review and analyse data. Pose questions and use data loggers to automatically collect the data needed to answer them. Data logger and associated software</p>	<p>Audio editing Identify the input device (microphone) and output devices (speaker or headphones) required to work with sound digitally. Discuss the ownership of digital audio and the copyright implications of duplicating the work of others. Use Audacity to produce a podcast, which will include editing their work, adding multiple tracks and opening and saving the audio files. Evaluate their work and give feedback to peers. Audacity Photo editing Develop their understanding of how digital images can be changed and edited and how they can then be resaved and reused. Consider the impact that editing images can have and evaluate the effectiveness of their choices. Paint.NET(for Microsoft Windows)</p>
Online safety	<p>Copyright and ownership - When searching on the internet for content to use, I can explain why I need to consider who owns it and whether I have the right to reuse it. I can give some simple examples of content which I must not use without permission from the owner.</p> <p>Managing online information - I can describe how to search for information within a wide group of technologies and make a judgement about the probably accuracy. I can describe some of the methods used to encourage people to buy things online. I can explain why lots of people sharing the same opinions or beliefs online do not make those opinions or beliefs true. I can explain what is meant by fake news.</p> <p>Self-image and identity - I can explain how my online identify can be different to my offline identity. I can describe positive ways for someone to interact with others online and understand how this will positively impact on how others perceive them. I can explain that others online can pretend to be someone else, including my friends, and can suggest reasons why they might do this.</p> <p>Online reputation -I can describe how to find out information about others by searching online. I can explain ways that some of the information about anyone online could have been created, copied or shared by others.</p>			

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y5	<p>Sharing information Develop understanding of computer systems and how information is transferred between systems and devices. Consider small-scale systems as well as large-scale systems. Explain the input, output and process aspects of a variety of different real-world systems. Take part in collaborative online project with other class members and develop their skills in working together online. Google Slides</p>	<p>Selection in physical computing Use physical computing to explore the concept of selection in programming through the use of Crumble. Introduction to a microcontroller (Crumble controller) and learn how to connect and program it to control components (including output devices -LEDs and motors). Introduction to conditions as a means of controlling the flow of actions in a program. Use knowledge of repetition and conditions when introduced to the concept of selection (through the 'if ... then...' structure) and write algorithms and programs that utilise this concept. Apply the stages of programming design. Crumble controller and starter kit and motor</p> <p>Selection in quizzes Develop knowledge of 'selection' by revisiting how 'conditions' can be used in programming and then learning how the 'if... then...else...' structure can be used to select different outcomes depending on whether a condition is 'true' or 'false'. Represent this understanding in algorithms and then by constructing programs in the Scratch programming environment. Learn how to write programs that ask questions and use selection to control the outcomes based on the answers given. Scratch</p>	<p>Flat-file databases Explore how a flat-file database can be used to organise data in records. Use tools within a database to order and answer questions about data. Create graphs and charts from their data to help solve problems. Use real-life database to answer a question and present their work to others. j2data Database</p>	<p>Video editing Create short videos in pairs or groups. Develop skills of capturing, editing and manipulating video. Reflect on and assess own progress in creating a video. Microsoft Photos (for Microsoft Windows 10)</p> <p>Vector drawing Start to create vector drawings. Explore how to use different drawing tools to help them create images. Recognise that images in vector drawings are created using shapes and lines and each individual element in the drawing is called an object. Layer their objects and begin grouping and duplicating them to support the creation of more complex pieces of work. Google Drawings</p>
Online safety	<p>Online relationships - I can explain how sharing something online may have an impact either positively or negatively. I can explain that taking or sharing inappropriate images of someone, even if they say it is ok, may have an impact for the sharer or others. I can explain that there are some people that may want to do me or my friends harm.</p> <p>Online bullying - I can describe how what one person perceives as playful joking and teasing might be experienced by others as bullying. I can explain how to block abusive users. I can identify a range of ways to report concerns and access support, in and outside of school.</p> <p>Health, wellbeing and lifestyle - I can describe ways that technology can affect health and wellbeing both positively and negatively. I can recognise the benefits and risks of accessing information about health and wellbeing online. I can assess and action different strategies to limit the impact of technology on health, e.g. night mode, regular breaks.</p> <p>Privacy and security - I can explain what a strong password is. I can explain what app permissions are and that they may read and share private information with others.</p>			

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Y6	<p>Internet communication Learn about the WWW as a communication tool. Learn how we find information on the WWW through learning how search engines work (including how they select and rank results) and what influences, searching and through comparing different search engines. Investigate different methods of communication, before focusing on internet-based communication. Evaluate which methods of internet communication to use for particular purposes. <i>Google Slides</i></p>	<p>Variables in games Exploring variables in programming through games in Scratch. Find out what variables are and relate them to real-world examples of values that can be set and changed. Use variables to create a simulation of a scoreboard. Experiment with variables in an existing project, then modify them, before they create their own project. <i>Scratch</i> Sensing Application of sequence, repetition, selection and variables using a physical device - micro:bit. Use a simple program to build in and test within the new programming environment, before transferring to micro:bit. Apply knowledge to own projects. <i>micro:bit and Microsoft MakeCode</i></p>	<p>Introduction to spreadsheets Introduction to spreadsheets. Organise data into columns and rows to create their own data set. Formatting data to support calculations, while also being introduced to formulas and will begin to understand how they can be used to produce calculated data. Applying formulas that include a range of cells and apply formulas to multiple cells by duplicating them. Use spreadsheets to plan an event and answer questions. <i>Google Sheets or Microsoft Excel</i></p>	<p>Webpage creation Introduction to creating websites for a chosen purpose. Identify what makes a good web page and use this information to design and evaluate their own website using <i>Google Sites</i>. Pay specific attention to copyright and fair use of media, the aesthetics of the site and navigation paths. <i>Google Sites</i> 3D modelling Develop knowledge and understanding of using a computer to produce 3D models. Familiarise selves with working in a 3D space, moving, resizing and duplicating objects. Create hollow objects using placeholders and combine multiple objects to create a model of a desk tidy. Examine the benefits of grouping and ungrouping 3D objects, then go on to plan, develop and evaluate their own 3D model of a building. <i>Tinkercad</i></p>
Online safety	<p>Copyright and ownership - I can assess and justify when it is acceptable to use the work of others. I can give examples of content that is permitted to be reused and know how this content can be found online.</p> <p>Managing online information - I can explain how to use search engines, how they work and how results are selected and ranked. I can describe how some online information can be opinion and can offer examples. I can evaluate digital content and can explain how to make choices about what is trustworthy. I can explain key concepts including: information, reviews, fact, opinion, belief, validity, reliability and evidence.</p> <p>Self-image and identity - I can identify and critically evaluate online content and explain why it is important to challenge and reject inappropriate representations online. I can describe issues online that could make anyone feel sad, worried, uncomfortable or frightened. I know and can give examples of how to get help, both on and offline. I can explain the importance of asking until I get the help needed.</p> <p>Online reputation - I can explain the ways in which anyone can develop a positive online reputation. I can describe ways that information about anyone online can be used by others to make judgements about an individual and why these may be incorrect.</p>			

Safer internet day rotation of key themes

2023	2024	2025	2026
- Online relationships - Managing online information	- Online bullying - Self-image and identity	- Health, wellbeing and lifestyle - Online reputation	- Privacy and security - Copyright and ownership