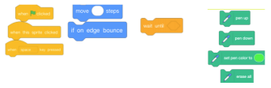
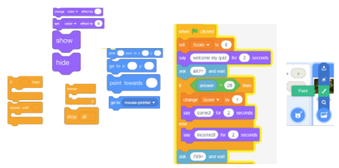
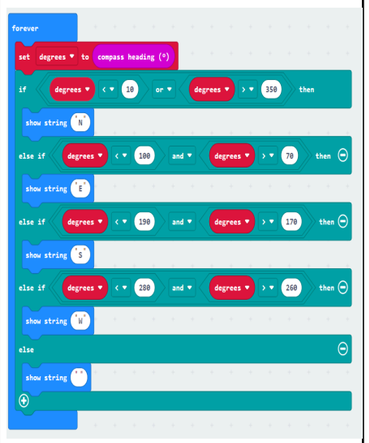
Year 3 Computing Medium Term Overview						
Topic	**Autumn 1** **Perfect Pets**	**Autumn 2** **Home and Away**	**Spring 1** **A Peachy Adventure**	**Spring 2** **A Step Back In Time**	**Summer 1** **What Lies Beneath**	**Summer 2** **Raiders and Invaders**
Unit and Outcome	**BBC Dancemat** - touch typing skills and digital fluency.	**Word Processing** – Use 'Google Docs' to edit an information poster on Mousehole.	**Scratch** - learn to use algorithms for a purpose. Program a car in a game	**Presentation Media** – to show information on the Stone Age to Iron Age.	**Animations** - use Google Slides to show a scene from Krindlekrax	**Scratch** – design, write and debug a maze game using their own Roman Soldier.
Topic Specific Vocabulary	Tab Key	Cursor	Sprite	Slide	Stop motion	Code
Subject Specific Vocabulary	Shift Key	Insert	Decomposition	Graphics	Format	Import
General Specific Vocabulary	Internet	Informative	Direction	Presentation	Animation	Control
Prior Learning	In KS1 children were taught to 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.	In KS1 children were taught to use technology purposefully to create, organise, store, manipulate and retrieve digital content.	In KS1 children were 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 and use logical reasoning to predict the behaviour of simple programs. Children did scratch Junior in Year 2.	In KS1 children were taught to recognise common uses of information technology beyond school.	In KS1 children were taught to recognise common uses of information technology beyond school.	In KS1 children were 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 and use logical reasoning to predict the behaviour of simple programs. Children did scratch junior in Year 2.
Later Learning	In Year 4 pupils will use these skills in Google Docs to create fact files and in Google Slides to create a presentation.	In Year 4 pupils will use these skills in 'Google Docs' to create fact files and posters on the Titanic.	In Year 4 pupils will use these skills in Scratch- Use coding skills to design, write and debug a maths quiz as well as use micro:bits to further their understanding of computer robotics.	In Year 4 pupils will use these skills to produce a documentary on 'Google Slides'.	In Year 4, pupils will learn further skills relating to presentation media on 'Google Slides'. In Year 5 pupils will further their animations - children create an animation using webcams and Lego models linked to space.	In Year 4 pupils will use these skills in Scratch- Use coding skills to design and write a maths quiz as well as using 'MakeCode' to program micro:bits to further their understanding of computer robotics.
Year 3 National Curriculum Objectives	Focus upon the skill of logging on, using the computer and digital fluency. Recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	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 use search technologies effectively. appreciate how results are selected and ranked, and be discerning in evaluating digital content	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	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	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,	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

Essential Knowledge	**Online Safety** Know how to stay safe online. **Digital Fluency** Know how to log-on to a Google Chromebook using the school username and password on their QR Code Card. Know how to use the keys on a keyboard to type and create words and sentences. Know which button to press when an error is made. Know how to use the 'Shift' key to create capital letters. Know how to use a wider variety of special keys such as 'space', 'backspace' etc.	**Digital Fluency** Know to use the 'Google Waffle' to log into 'Google Drive'. Information Technology Know the function of 'Google Search'. Know how to create a text-box on 'Google Docs' by using the 'Insert' menu. Know how to insert a picture into a 'Google Doc' using the 'Insert' Menu. Know how to format font properties. A mouse has a 'left click' and 'right click'.	**Computer Science** Know that an algorithm is a sequence of instructions that are followed to complete a task. Know that 'debugging' is the skill of checking for and amending errors. Know that 'decomposition' is the skill of breaking complicated problems and tasks down into smaller, easier to manage sections. Know how to move and direct a sprite using 'Scratch' by creating an algorithm from coding blocks.	**Information Technology** Purpose of 'Google Slides' to create presentations. Know how to edit the colour and font of a text ,using the toolbar, so that it is legible. Know how to insert a picture into a slide using the 'Insert' menu so that it is placed in an appropriate position. Know how to create a clear presentation, using fonts, background and images effectively, to engage the viewer.	**Information Technology** To know how to create a background on Google Slides by importing images. To know how to add speech bubbles, using the toolbar, to show interaction between characters To know how to create a stop-frame animation using Google slides by showing character movement and duplicating slides. To know how to export a Google Slides presentation as a video file using the 'File-Share' function.	**Computer Science** Know that 'decomposition' is the skill of breaking complicated problems and tasks down into smaller, easier to manage sections. Know how to move and direct a sprite using 'Scratch' by creating an algorithm from coding blocks. Know how to create a new background in 'Scratch' using the 'Backdrop' icon. Know how to make the sprite react to obstacles by using 'touching colour' and 'move steps' blocks.
Year 3 Skills	-Fine motor skills for holding hands over the keyboards -Fine motor skills to use individual fingers independently -Understanding input surface layout (keyboard keys location on different devices)	-Locate their saving area -Learn how to open documents from their saved area -Learn to insert pictures / clip art / graphics -Changing font style, size and colour - How to use a mouse with a left and right click.	-Create code that changes sprite direction, moves sprite and draws. -Add message at the end of the game. 	-How to access Google Slides using the waffle -Create a new document -Save the document -Locate their saving area -Learn how to open documents from their saved area -Learn to insert pictures / clip art / graphics -Changing font style, size and colour -Learn how to start a slide show -Introduce transitions between slides including sounds	Insert Pictures Format Picture - change position and size. Insert and format text box.	Change sprite direction, Choose Background and Sprite Create code to instruct sprite. 
Online Safety Objectives (Educated for a Connected World) **(Revisited from PSHE)**	**Mini-Plenary: Self image and identity** *What is different about our offline and online identity?* **Mini-Plenary: Online bullying** *What is an example of online bullying?* **Mini-Plenary: Privacy and security** *Why is using a password online important?*	**Mini-Plenary: Online relationships** *How is knowing someone offline different from knowing someone online?* **Mini-Plenary: Online reputation** *Who could we ask for help if we are not sure about what to put online?*	(No PSHE objective that term - mini plenaries refer to e-safety objectives covered across the year) **Mini-Plenary: privacy and security** *What information should we share online?* **Mini-Plenary: Managing online information** *What can we do if we see content online that makes us sad or worried?*	**Mini-Plenary: Managing online information** *Are only facts shared online?* *Use to remind that facts, opinions and beliefs are shared online.* **Mini-Plenary: Online relationships** *How is 'trusting' someone online different from 'liking' someone offline?*	**Mini plenary: Health, well-being and lifestyle** *Why are there age restrictions on some online games?* **Mini plenary: Health, well-being and lifestyle** *Tell your partner a possible positive about using technology and a possible negative.*	(No PSHE objective that term - mini plenaries refer to e-safety objectives covered across the year) **Mini-Plenary: privacy and security** *How can we protect our information online?* **Mini-Plenary: Online bullying** *Where could someone get help if they experienced bullying online?*

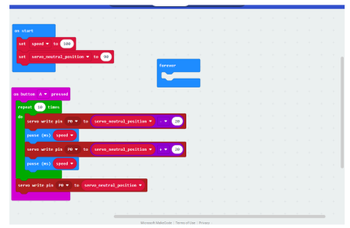
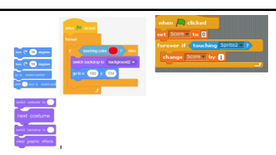
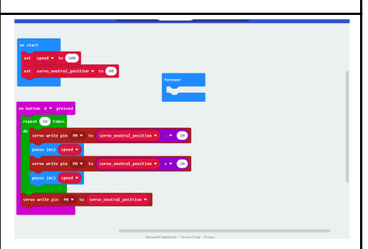
Inspirational People	Barbara Blackburn – She holds the title of the World's Fastest Typer for her ability to maintain a speed of 150 wpm for almost an hour and had a top record speed of 212 wpm.	Mitchell Kapor - Founder of Lotus 123. First commercially available word processor.	Ada Lovelace - First known computer programmer.	Robert Gaskins - Inventor of 'Powerpoint'. David Byrne - best known as the lead singer for the '80s rock band Talking Heads, has collected his PowerPoint art into a book and DVD with original songs Since the 1990s, Georges Sauvet at the University of Toulouse-Jean Jaurès, France, has been compiling a database of European Stone Age	Walt Disney	Larry Page and Sergey Brin - Creators of Google.
Linked Texts **Purple – Fiction** **Blue – Non-Fiction**	Using Digital Technology by Ben Hubbard The extraordinary life of Steve Jobs The extraordinary life of Katherine Johnson Pioneers of science and technology. Titans of Business - Steve Jobs Artificial Intelligence	What A Waste: Trash, Recycling, and Protecting Our Planet Wreck it Ralph Breaks the Internet Online Safety by Sam Thompson, Dan Scase Safe social networking - Heather E Schwartz Golidilocks - a Hashtage cautionary Tale Jeanne Willis and Tony Ross - Chicken Clicking	Coding for Kids: Scratch: Learn Coding Skills, Create 10 Fun Games, and Master Scratch by Matthew Highland How to Code a Rollercoaster by Josh Funk, Sara Palacios secret Coders: Paths & Portals by Gene Luen Yang The Adventures of Nooby Norman: Book 1 - Phantom Forces Agent Asha Mission Shark Bytes Grace Hopper- The woman behind computer programming	All of Twinkl's own published books are on PowerPoint. Frankie and Matilda learn PowerPoints Stig of the dump Stone Age Boy An introduction to PowerPoint	Wall-E (Disney/Pixar Wall-E) by Random House Disney Shaun the Sheep (animation) Lego Movie Animation Lab for Kids: Fun Projects for Visual Storytelling and Making Art Move The Lego Animation Book: Make Your Own Lego Movies	Coding for Kids: Scratch: Learn Coding Skills, Create 10 Fun Games, and Master Scratch by Matthew Highland Harry Potter – Goblet of fire maze part. Computer Coding Projects for Kids: A unique step-by-step visual guide, from binary code to building games by Carol Vorderman Adot Lovelance - technology Pioneer. Great with Code - Build your own website Kids get Coding - Coding in the real world.

Year 4 Computing Medium Term Overview						
Topic	**Autumn 1** **Into the Woods**	**Autumn 2** **Villagers and Pillagers**	**Spring 1** **The Nowhere Emporium**	**Spring 2** **Tragic Titanic**	**Summer 1** **Mission: Survival**	**Summer 2** **S.O.S Save Our Species**
Unit and Outcome	**Scratch** - Use coding skills to design, write and debug a maths quiz.	**Word processing -** create a comparison table looking at the subject 'Pillaging Pirates' v 'Misunderstood Migrants'. Extend with creating speech bubbles	**Presentation Media** – create a presentation on a 'Wonder'.	**Google Search** - Use internet search functions to research information on the Titanic.	**Make Code/Micro:bits** - use coding skills to create a compass to navigate to 'points of safety' and create a step counter	**Animations** - Google Slides to create a stop motion of an endangered animal.
Topic Specific Vocabulary	Debug	Word-Processing	Media	Natural Language	micro:bit	Frame
Subject Specific Vocabulary	Output	Format	Audio recording	Search Engine	programming	Sequence
General Vocabulary	Design	Layout	Transition	Bookmark	Microprocessor	Motion
Prior Learning	In Year 3 pupils were introduced to scratch and coding. They also designed their own maze/game and became familiar with key vocabulary and the coding software.	In Year 3 pupils explored BBC Dancemat touch typing skills and digital fluency. They learnt the names and functions of the Tab, Shift, Backspace, Return and Space Bar keys. They learned how to format font and text boxes in Google Docs and how to use search functions to insert pictures.	In year 3 pupils learnt to use Google Slides to show information on the Stone Age to Iron Age.	In Year 3 pupils were taught Word Processing to make an E-safety poster. They also looked at BBC Dance mat touch typing skills and digital fluency. This was also explored earlier in Year 4 whilst creating an informative poster about the digestive system.	In Year 3 pupils were introduced to scratch and coding. They also designed their own maze/game and became familiar with key vocabulary and the coding software. Children revisited this at the start of Year 4. This is the first time they are introduced to micro: bits and spend time learning the robotics behind coding. This is also children's first use of 'Make Code'.	In Year 3 pupils were taught the BBC Dance mat touch typing skills and digital fluency skills.
Later Learning	In Year 5 pupils will be taught how to develop more complex games with more in-depth algorithms. They will work with micro:bits using the Make Code program.	In Year 5 pupils will use Google Slides to make a factfile.	In Year 5 pupils will use Animate it to create animations.	In Year 5 pupils will use these skills to further their information collection in Google Slides to create Egyptian Fact Files.	In Year 5 pupils will be re familiarised with the robotics micro:bit and create a scrolling display on the micro:bit. They use other functions of the button to control a character.	In Year 5 pupils will use Animate it to create animations.
Year 4 National Curriculum Objectives	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 contact.	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	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 use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	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 Microbits is form of robotics to help programme a device. It gives children real life experiences in a relatable context – EG gaming. use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs contact.	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

Essential Knowledge	**Computer Science** To create a 'welcome' block of code using 'looks' blocks. To create an algorithm that calculates a correct answer using 'sensing' blocks To create a score chart using 'variables' blocks. To alter the variables of the game using 'variables blocks'.	**Digital Literacy** Know how to move a document to a specific folder on 'Google Drive' by navigating through folders. **Information Technology** Know how to confidently use the shift key to access punctuation symbols and the effect the use of punctuation has on the viewer. Know to use spell-check to ensure spelling is accurate using the 'Tools' Menu. Know how to edit content for effect by using different fonts, colours and text size.	**Information Technology** To know that 'Google Slides' is software that can be used to create presentation media - a visual presentation that provides information to an audience. To know how to create a background for a slide in 'Google Slides' using 'Change Background' or the 'Insert Menu'. To know how to create titles and text using a text box To know how to create and insert a voice recording into a presentation using the 'Insert' menu in 'Google Slide' and 'Cloud Audio Recorder' on the 'Google Waffle'.	**Information Technology** To bookmark a new page in Google Chrome by using the 'book mark' in the menu. Click this icon to access ⋮ 4 To use natural language by asking To use actual questions in a search engine to improve reliability. To be able to cross reference information across several sources by using alternative search engines (e.g. Ask Jeeves, Bing etc..) To know how to copy and paste information from a website into Google Docs by using the mousepad to highlight text and pressing 'ctrl and c'.	**Computer Science** To know that a micro:bit is a tiny-sized computer which can be programmed to achieve a particular function. To know how to download a pattern onto a micro:bit by creating a pattern using the show leds block and dragging the pattern into the micro:bit drive. To know how to create a code using make:code using the blocks to create a specific function. To know how to create a code to program the buttons of the micro:bit the using make:code the blocks	**Information Technology** To know how to ensure that slides are linked in sequence through planning and analysing the position within each slide. To know how to make characters interact to add realism to the piece through inserting pictures and planning their direction of motion. To know how to create a movie from Google Slides using File - Share - Publish to Web. Click 'Start Slideshow' Box and then press the publish button.
Year 4 Skills	 Plan a game with a group. Change and alter sprite and background to make it original. Understand a learned code and why it works. Changing variables to make game original.	Create a new document Save the document Use of file management in Google Drive. Using Spell-Check Cut and Paste to move pictures. Insert Pictures Think about the presentation of the document for effect.	Recap Year 3 Skills Use of file management in Google Drive Create, edit and evaluate content. Voice Recording	Use a search engine to provide child-friendly results. Navigate around a website effectively. Search for information using natural language. Create relevant content. Create links for more information.	 Create code using Make Code Download Code Use programmed device Program Buttons Programme device using a number of different variables.	Design backgrounds and objects. Plan order of slides to create a journey. Character Interaction. Configure animation to run as a video.

Online Safety Objectives (Educated for a Connected World) **(Revisited from PSHE)**	**Mini-Plenary: Self image and identity** *Are there any risks in only knowing someone through their online identity?* **Mini-Plenary: Online relationships** *What can you do if you are worried about contact made online?*	**Mini-Plenary: Online relationships** *What would a healthy online relationship include?* **Mini-Plenary: Online reputations** *How can information about someone online be shared?*	**Mini-Plenary: Online bullying** *What different media can be used in online bullying?* *e.g. text, video, chat, image* **Mini-Plenary: Managing online information** *Is all content online accurate and truthful?*	**Mini-Plenary: Managing online information** *Can technology be used to act like living things? Can you give any examples?* **Mini-Plenary: Managing online information** *What is a pop-up and what is it used for?*	**Mini-Plenary: Managing online information** *What is 'fake news'?* **Mini-Plenary: Health, well-being and lifestyle** *How can using technology be a distraction?* *Give a positive and negative example.*	**Mini-Plenary: Privacy and Security** *What does 'monitoring' mean? Is the internet private or monitored?* **Mini-Plenary: Privacy and Security** *What is the digital age of consent in the UK?* *(13)*
Inspirational People	Dr Katie Bouman – algorithm development which took a picture of the first black hole.	Evelyn Berezin - creator of the first computer driven word processor.	David Burn uses PowerPoints as his medium in art. He creates showrooms with art displayed on PowerPoints.	Tim Berners-Lee Inventor of the World Wide Web	Cerys Griffiths - Creative Direct BBC Learning. Influence of use of microbit: wanted to teach real-world computing as opposed to games.	William Hanna and Joseph Barbera Creators of Hanna-Barbera Animations (Tom and Jerry)
Linked Texts **Purple – Fiction** **Blue – Non-Fiction**	Runaway Robot Maze Runner - only the maze part. Dolly E 1.0 If you give a mouse an iPhone Computers in coding – lift the flap. Adot Lovelance - technology Pinoeer. Great with Code - Build your own website Kids get Coding - Coding in the real world.	Whizz kids word power Human body: your digestive system. Using Digital Technology by Ben Hubbard The extraordinary life of Steve Jobs	All of twinkle's own published book are on PowerPoint. Frankie and Matilda learn PowerPoints An introduction to PowerPoint	If you were a kid abroad the Titanic (if you were a kid) National Geographic Readers: Titanic Titanic Survivor: The Memoirs Of Violet Jessop, Stewardess How does a network work work - High tech science - Matt Anniss.	The Official BBC micro:bit User Guide by Gareth Halfacree Ezra Jack Keats – A letter to Amy Emu Mail Cyberbullying by Heather E. Schwartz The Technology tail – the impact of digital footprint	Maze Runner - only the maze part. Secret coders Trapped in a video game The Adventures of Nooby Norman: Book 1 - Phantom Forces Agent Asha Mission Shark Bytes Grace Hopper- The woman behind computer programming Adot Lovelance - technology Pinoeer. Great with Code - Build your own website Kids get Coding - Coding in the real world.

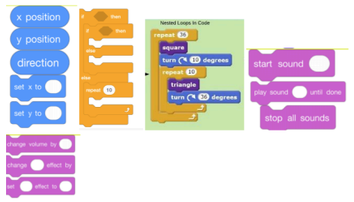
Year 5 Computing Medium Term Overview						
Topic	**Autumn 1** **A Land Faraway**	**Autumn 2** **Into the Darkness**	**Spring 1** **Walk Like an Egyptian**	**Spring 2** **The Golden Age**	**Summer 1** **A Twist in the Tail**	**Summer 2** **NEW COASTS TOPIC**
Unit and Outcome	**Graphics Package** - Use image processing skills to create an advertising poster. https://pixlr.com/	**Introduction to AI -** To understand what AI is and to use Google Gemini to complete a task.	**Google Search** – create Egyptian Fact File presentations on the pyramids.	**Scratch** – design, write and debug programs. Children create their own game for others to play.	**Google Sheets -** to collect information and mail merge to create animal top trump cards on Google Docs	**Make Code/Micro:bits** - Use coding skills to programme a micro:bit to control a crab.
Topic Specific Vocabulary	manipulate	Machine-Learning	URL	Algorithm	Data	Troubleshooting
Subject Specific Vocabulary	layering	Programme	Cross-Reference	Orient	Spreadsheet	Calibrate?
General Specific Vocabulary	crop	Artificial	Relevance	Logic	Merge	Physical controller
Prior Learning	First use of graphics package.	First use of AI	In Year 4 children used Google Docs and Google Slides to create fact files on a wonder and survivor in the Titanic.	In Year 4 pupils were taught Scratch/Micro:bits - Use coding skills to design, write and debug a maze for an animal to orientate (using micro:bits) as well as creating a quiz. They also used micro:bit to create a compass.	Children used Google Search to research information for the posters on the Titanic. Children have used Google Docs to create information posters about the Vikings.. First use of Google Sheets.	In Year 4 pupils were taught Scratch/Micro:bits - Use coding skills to design, create a compass to navigate to 'points of safety'.. (using micro:bits) as well as creating a quiz.
Later Learning	In Year 6 pupils will be taught: Graphics Package	In Year 6 pupils will be taught: New AI concepts.	In Year 6 pupils will be taught: Google Forms - Create web-based surveys linked to selling castles. Children to use internet search engines to gather information. **Enterprise Week** Google Sheets – Spreadsheets: collecting, analysing, evaluating and presenting data and information used for their business idea.	In Year 6 pupils will be taught: Scratch - Use coding skills to design, write and debug a maze for Torak's quest in 'Wolf Brother'. They will also use micro:bit to control the movement of a vehicle through a defined obstacle course.	In Year 6 pupils will be taught: Google Sites - Create a website with information about dragons using search technologies effectively. Children will also use Google Sheets to calibrate vehicle movements as part of a programming topic. **Enterprise Week** Google Sheets – Spreadsheets: collecting, analysing, evaluating and presenting data and information used for their business idea.	In Year 6 pupils will be taught: Scratch/Micro: bits – use coding skills to design, write and debug programs.

Year 5 National Curriculum Objectives	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.	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	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.	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.	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.	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.
Essential Knowledge	**Information Technology** Know how to create a new layer using the layers palette.. Know how to create and edit shapes using the shape tools function. Know how to add and merge multiple layers to their image by using the layers palette. Know how to manipulate images by straightening, resizing and cropping parts of the image.	Computer Science Know which programmes use AI. Know what the risks could be when using AI. (Mini Plenary) Know the importance of being critical when using the Internet. Know how to use AI to search for and generate information.	**Digital Fluency** Know how to use natural language e.g. 'Where is Egypt in Africa?' in Google Search to improve the quality of search results. Know how to cross reference 2 different searches to ensure accuracy and relevance of results - e.g. 'Which continent is Egypt in?' and 'Show Egypt on a world map.' Know how to use links to provide further information by copying a link into Google software.	**Computer Science** To know how to programme a sprite to move in all directions using motion and events blocks. To know how to create obstacles in a game using sprites. To create a variable to enhance the features of a game using variable blocks. To create links to multiple levels of a game.	**Information Technology** Know how to create a table in Google Sheets using cells and the toolbar. Know how to add a simple formula to the spreadsheet to combine 2 values using the formula function. To know how to mail merge an image via a link.	**Computer Science**  I can add extension blocks to Make:Code. I can code the micro:bit to control the server motor. I can control LED lighting using the micro:bit
Year 5 Skills	Explore new software.	Understanding different types of computer programmes. Online Safety - Safe AI use. Understanding the meanings of the words 'critical' and 'relevant' in an evaluative context.	Creating slide content through using background, sub-headings and copy and pasting pictures. Visual effects.	 Decompose a game into smaller parts. Programme sprite to move in all orientations. Identify bugs in coding. Create obstacles in the game. Create a variable to keep score. Sprite Dialogue.	Input data in columns – develop their understanding of why considered rows and columns are important to data Start to use simple formula All data to be labelled accurately Export data to the relevant media. Mail merge and transfer data.	
Online Safety Objectives (Educated for a Connected World) **(Revisited from PSHE)**	**Mini-Plenary: Self-image and identity** *Imagine you are using an avatar to play an online game. Tell your partner two responsible things you would do with your online identity in the game.* e.g. use a nickname, have a cartoon image and not a photo	**Mini-Plenary: Online relationships** *If someone wanted to show you they were angry online, how might they do that without using words?* Use to talk about technology-specific forms of communication (e.g. emojis, memes & gifs)	**Mini-Plenary: Online reputation** *How can we use the internet to find out more about someone? Why might this be useful?* **Mini-Plenary: Online bullying** *Tell your partner one way to get support with online bullying at*	**Mini-Plenary: Managing online information** *How can you tell the difference between an advert online and search result?* **Mini-Plenary: Managing online information**	**Mini-Plenary: Health, wellbeing and lifestyle** *How can the internet help us learn about well-being?* *Why is it important to also talk to trusted adults and not only use the internet?*	**Mini-Plenary: Privacy and security** *What happens with some apps and online services if you 'like' the content?* Use to discuss that it shapes the resultant experience as it may share this information with other services.

	and not chat with unknown members. **Mini-Plenary: Self-image and identity** *Can online identities be changed?* Use to discuss that they can be copied, modified or altered.	**Mini-Plenary: Online relationships** *How can we help other people who are having difficulties online?*	*home and one way to get support with online bullying at school?* **Mini-Plenary: Online bullying** *How can you block abusive users online?*	*How can you tell if a vlogger has been sponsored by a company?* **Mini-Plenary: Managing online information** *What could be an example of an online 'hoax' and why might we need to be careful about sharing this?*	**Mini-Plenary: Health, wellbeing and lifestyle** *Whose permission should you get before purchasing an app or something in a game online?*	**Mini-Plenary: Privacy and security** *What is app permission? Give an example.* **Mini-Plenary: copyright and ownership** *What is copyright law?* Copyright law gives the creator/ copyright holder exclusive rights to publish, copy, distribute and sell their creation. No one else can use the work without permission.
Inspirational People	Joseph Nicéphore Niépce - creator of the first photograph in 1826.	Alan Turing (1912 - 1954) was a mathematician and computer scientist. He invented the Turing Test to try and distinguish between computer and human text response.	The Ancient Egyptians created mathematical systems.	Jack Dorsey - coder and founder of Twitter. (uses algorithms).	Dan Bricklin - co-creator of VisiCalc spreadsheet.	Microsoft - Creators of Make Code and other software systems. Created by Bill Gates and Paul Allen.
Linked Texts **Purple – Fiction** **Blue – Non-Fiction**	Adobe Photoshop Classroom in a Book 2024 Release: The Official Training Workbook from Adobe Design with Canva: A complete guide on how to use Canva. Eyes Open: 23 Photography Ideas for Curious Kids: 23 Photography Projects for Curious Kids Take a Picture of Me, James Van Der Zee.	What is AI?: The curious kid's guide to artificial intelligence by Neal Layton See Inside AI: by Alex Firth et al. Agent Asha: Mission Shark Bytes by Sophie Deen and Anjan Sarkar. The Wild Robot by Peter Brown	So You Think You've Got It Bad? A Kid's Life in Ancient Egypt Paperback – by Chae Strathie Pioneers of Science and Technology - Brilliant Women Artificial Intelligence Steve Jobs - the extraordinary life Safe Social Networking by Heather E Schwatrz.	Video Games: Design and Code Your Own Adventure (Build It Yourself) by Kathy Ceceri Kids get coding - coding in the real world. Create with Code - build your own website Grace Hopper: The woman behind Computer Programming. Agent Asha: Mission Shark Bytes The game is on, Travel with wonder - Jennifer Bell.	What is a Database? Kirsty Holmes Understanding Computer search and research. How does a network work?	The Official BBC micro:bit User Guide by Gareth Halfacree Coding for Minecrafters: Adventures for Kids Learning Computer Code: Unofficial Adventures for Kids Learning Computer Code by Ian Garland Kids get coding - coding in the real world. Create with Code - build your own website Grace Hopper: The woman behind Computer Programming. The game is on, Travel with wonder - Jennifer Bell.

Year 6 Computing Medium Term Overview						
Topic	**Autumn 1** **Meet the Greeks**	**Autumn 2** **Born to Survive**	**Spring 1** **Dragonology**	**Spring 2** **Lest We Forget**	**Summer 1** **Lest We Forget**	**Summer 2** **Location, Location, Location**
Unit and Outcome	**Graphics Package** - Use image processing skills to create a mythical creature.	**Scratch** - Use coding skills to create a maze with treasures to collect for children to complete the maze successfully.	**Google Sites** - Create a website with information using search technologies effectively.	**Google Sheets** - Learn spreadsheet creation skills to produce an informative spreadsheet using collated data.	**Enterprise Week** Collect, analyse, evaluate data on spreadsheets and then present the results and information collated for their business idea. **Introduction to AI:** To understand what AI is and to use AI to complete a task.	**Tinker CAD -** Create a three dimensional castle using computer aided design.
Topic Specific Vocabulary	manipulate	Hat, Stack, Boolean, Reporter, C and Cap. (Scratch Blocks)	Subpages	Spreadsheet	Machine-Learning	Computer-Aided (CAD)
Subject Vocabulary	layering	Layering	Website	Cell	Programme	Procedural
General Vocabulary	crop	Complex	Collapsible (Text)	Formula	Artifical	Dimensions
Prior Learning	First use of graphics package.	In Year 5 pupils were taught: Scratch – design, write and debug programs. Children create their own game for others to play. Children also used Make Code to programme a micro:bit	In Year 5 pupils were taught: Google Sheets – Use databases to collect information and mail merge to create animal top trump cards.	In Year 5 pupils were taught: Use Google Sheets to collect information and mail merge to create animal top trump cards on Google Docs	First use of AI	In Year 5 and 6, children have begun to explore a graphics package to create a mythical creature.
Later Learning	In KS3, children will undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices.	In KS3, children will understand several key algorithms that reflect computational thinking. They will also use 2 or more programming languages and understand how instructions are stored and executed within a computer system.	In KS3, children will understand several key algorithms that reflect computational thinking, make appropriate use of data structures, understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits, undertake creative projects that involve selecting, using, and combining multiple applications,	In Year 6 pupils will be taught: To collect, analyse, evaluate data on spreadsheets and then present the results and information collated for their business idea. In KS3, children will understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits	In KS3, children will understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns.4 In KS3, children will understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be	In KS3, children will use using computer software to draw, design and model on screen. They will understand how these designs can be translated into physical objects through manufacturing processes.

			preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability, a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct, and know how to report concerns		represented and manipulated digitally, in the form of binary digits	
Year 6 National Curriculum Objectives	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..	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 and to detect and correct errors in algorithms and programs.	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.	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	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	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.
Essential Knowledge	**Information Technology** Know how to create a new layer using the layers palette.. Know how to create and edit shapes using the shape tools function. Know how to add and merge multiple layers to their image by using the layers palette. Know how to manipulate images by straightening, resizing and cropping parts of the image.	**Computer Science** Know the different types of blocks used for coding with 'Scratch' - Hat, Stack, Boolean, Reporter, C and Cap Know how to create an algorithm in 'Scratch' which creates a specific outcome by using different block categories in sequence Know the importance of iteration in computing code by realising that code can be repeated to give a repeated outcome. Know how to debug an algorithm which is coded inaccurately by using prior knowledge to understand broken code.	Information Technology To know how to produce a site which presents the information they want to present in a format that is accessible to their target audience. To know how to use simple text. To know how to use appropriate graphics. To know how to create sub pages in order to breakdown information.	**Information Technology** To understand that a spreadsheet is used to collect and display data. To know how to collate and display data by typing into cells and adding colour and heading to cells. To know how to add a simple formula to add up cells automatically by using the 'formula' function. To know how to create a formula to calculate an average value.	Computer Science Know which programmes use AI. Know what the risks could be when using AI. (Mini Plenary) Know the importance of being critical when using the Internet.	**Information Technology** To know how to create a three-dimensional shape and manipulate it. To know how to join shapes together and cut pieces out of shapes. To know how to create a three-dimensional castle using the shape tools. To know how to create texture on surfaces.

Year 6 Skills	Create images using free-hand drawing and shapes. Create and merge multi-layers. Change colour for effect. Manipulate images by straightening, cropping and resizing.	Create and plan a game. 	Design a theme. Create Subpages. Image Carousel Create Layouts	- Highlighting the key information - Create graphs from their inputted data - Label the graphs clearly and simplify for the audience - Develop their use of formula eg. =AVERAGE , =COUNT - Use the sort and filter tools to analyse their findings by different criteria - Extract data to create a new database (use =SUM answers to create new results eg. cost differences) Export data that is simple and clear to show their audience.	Understanding different types of computer programmes. Online Safety - Safe AI use. Understanding the meanings of the words 'critical' and 'relevant' in an evaluative context.	Manipulate 3D Shapes Add detail. Explore design options
Online Safety Objectives (Educated for a Connected World) **(Revisited from PSHE)**	**Mini-Plenary: Health, well-being and lifestyle** *Tell your partner an example of a pressure that technology can create.* e.g. peer pressure through social media **Mini-Plenary: Health, well-being and lifestyle** *What is the purpose of parental warnings?* **Mini-Plenary: Self-image and identity** *Why is it important to think carefully about any content we see online?* Use to discuss rejecting inappropriate representations online relating to gender, race, religion, disability, culture and other groups.	**Mini-Plenary: Online relationships** *How can we be kind and respectful online?* **Mini-Plenary: Online relationships** *Tell your partner one impact that sharing an image of someone online may have.* **Mini-Plenary: Online bullying** *How do you do a screen grab?* *How can using a screen grab of bullying content help?*	**Mini-Plenary: Privacy and security** *Give an example of a weak and a strong password.* *What can you do if a password is shared, lost or stolen?* **Mini-Plenary: Privacy and security** *Why are privacy settings on some apps helpful?* **Mini-Plenary: Privacy and security** *How might you spot that something is a scam?* Have an example of a phishing/ scam email for the pupils to unpick.	**Mini-Plenary: Online reputation** *How can we develop a positive online reputation and 'digital personality'?* **Mini-Plenary: Managing online information** *How can online content influence what we think?* e.g. adverts, ad targeting and fake news, persuasive design **Mini-Plenary: Managing online information** *How can we use a search engine effectively?*	**Mini-Plenary: Managing online information** *Why is it important to check the 'facts' and information we read online?* **Mini-Plenary: Managing online information** *How can we identify, flag and report inappropriate content?* **Mini-Plenary: Managing online information** *What is the difference between misinformation and dis-information?* Misinformation is fake news that is created and spread by a mistake – by someone who doesn't realise that it's false. Dis-information is when people deliberately spread or create fake news to cause trouble.	**Mini-Plenary: Health, well-being and lifestyle** *How are apps and online content designed to be persuasive?* Infinite scrolling - no next page button Auto play - goes into next video Colourful - appealing presentation Notifications - makes you want to know what you are missing Friend suggestions - peer pressure and draw of connections **Mini-Plenary: Health, well-being and lifestyle** *How can we limit the negative impact technology can have on our health?* (e.g. night mode, regular breaks, correct posture, diet and exercise) **Mini-Plenary: Copyright and ownership** *How can we find online content that can be reused?*

Inspirational People	Bill Atkinson - Creator of MacPaint	Andrew Griffin - Scratch coder	David Bohnett and John Rezner - creators of Geocities. Early website creator.	Leila Gharani - Excel & Microsoft Productivity Instructor	Alan Turing (1912 - 1954) was a mathematician and computer scientist. He invented the Turing Test to try and distinguish between computer and human text response.	Patrick J. Hanratty: American Computer Scientist - The 'Father of Cad'. Kai Backman and Mikko Mononen - Founders of Tinker CAD
Linked Texts **Purple – Fiction** **Blue – Non-Fiction**	Adobe Photoshop Classroom in a Book 2024 Release: The Official Training Workbook from Adobe Design with Canva: A complete guide on how to use Canva. Eyes Open: 23 Photography Ideas for Curious Kids: 23 Photography Projects for Curious Kids Take a Picture of Me, James Van Der Zee!	Friendship Code #1, The (Girls Who Code) by Deutsch, Stacia The Everything Kids' Scratch Coding Book: Learn to Code and Create Your Own Cool Games! by Jason Rukman Coding for kids scratch: a step-by-step beginner's guide to mastering coding and creating your own cartoons and games by Bill Baldwin Crayola (R) Art of Coding: A Celebration of Creative Mindsets (Nonfiction - Grades 4-8) by Kiki Prottsman Grace Hooper: The woman behind coding. Brilliant Women - Pioneers of Sicence and Technology The game is on, Travel with wonder - Jennifer Bell.	Learning Web Design - Jennifer Niederst Robbins Teach Your Kids Web Design - Angela Tonsin Understanding Computer Search and Research How does a network work? - Matt Annis	Excel for Kids: A fun and visual introduction to the fundamental spreadsheet application. Mastering Google Sheets: A Step-by-Step Handbook for Beginners to Simplify Data Analysis, Boost Productivity, and Unlock Your Full Spreadsheet Potential	What is AI?: The curious kid's guide to artificial intelligence by Neal Layton See Inside AI: by Alex Firth et al. Agent Asha: Mission Shark Bytes by Sophie Deen and Anjan Sarkar. Troofriend by Kirsty Applebaum	3D tour of Windsor Castle https://www.royal.uk/virtual-tours-windsor-castle Design, Animate and Create with Computer Graphics by Max Wainewright C is for CAD: An A-Z STEM Book about Computer-Aided Design for Little Makers and Future Engineers (Engineering Gifts for Kids, High-Contrast) Paperback – 6 Dec. 2024 by Jake Oliver Sugden (Author) National Geographic Kids books