Overview Computing Year 2

	-Computational Thinking		-Digital Literacy and Online Safety		-Computers and Hardware	
	Autumn Term		**Spring Term**		**Summer Term**	
Big Question	Fire; Friend or Foe?		How can we look after our world?		What does it take to be a hero?	
Other Subject links	Tudors, Great Fire of London		Kenya, VISIT to APPLE store,		Florence Nightingale	
	Autumn 1 - What is a Computer?	Autumn 2 - Word Processing	Spring 1 - Algorithms and Debugging	Spring 2 - Programming Scratch JR	Summer 1 - International Space Station	Summer 2 - Stop Motion
National Curriculum	-Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. -Recognise common uses of information technology beyond school. -Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns	-Use technology purposefully to create, organise, store, manipulate and retrieve digital content. -Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.	-Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. -Create and debug simple programs. -Use logical reasoning to predict the behaviour of simple programs. -Use technology safely and respectfully, keeping personal information private; identify where to go for help	-Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. -Create and debug simple programs. -Use logical reasoning to predict the behaviour of simple programs. -Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	-Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. -Use technology purposefully to create, organise, store, manipulate and retrieve digital content. -Use technology safely and respectfully, keeping personal information private; identify where to go for help	-Use technology purposefully to create, organise, store, manipulate and retrieve digital content. -Recognise common uses of information technology beyond school -Use technology safely and respectfully, keeping personal information. private; identify where to go for help and support when they have concerns about content or contact on the internet or other

	about content or contact on the internet or other online technologies.		and support when they have concerns about content or contact on the internet or other online technologies.	-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.	and support when they have concerns about content or contact on the internet or other online technologies.	online technologies.
Knowledge	**Identify** ways of staying safe when talking to people online. **Explain** how other people's identity online can be different to their identity in real life. **Identify** and **explain** that a computer is made up of different components. **Know** that buttons cause effects. **Know** that technology follows instructions and we can see what it is doing via outputs. **Know** the basics of touch typing (using 2 hands and all fingers.) **Know** how to alter text by coping,	**Identify** what they should so if they see or hear something online that makes them feel upset or uncomfortable. **Know** examples of how we might use technology to communicate with others we don't know well (e.g. email) **Explain** that we can use word processing software to type and format text. **Know** how to collect, input and interpret data into a spreadsheet.	**Identify** examples of bullying behaviour and how it could look online. **Explain** how we can use decomposition to predict the algorithms used to create simple games and stories. **Know** that abstraction means removing unnecessary detail to help solve a problem. **Explain** what an algorithm is. **Know** how to create a clear and precise algorithm (digital and unplugged.) **Know** that computers use algorithms to make predictions.	**Know** not to share personal information online. **Explain** how information put online can last for a long time. **Explain** how we can use decomposition to predict the algorithms used to create simple games and stories. **Know** that abstraction means removing unnecessary detail to help solve a problem. **Explain** what an algorithm is. **Know** how to create a clear and precise algorithm (digital and unplugged.)	**Explain** why some information found online may not be true. **Know** that content on the internet may belong to other people. **Explain** how we can use decomposition to predict the algorithms used to create simple games and stories. **Know** that abstraction means removing unnecessary detail to help solve a problem. **Explain** what an algorithm is. **Know** how to create a clear and precise algorithm (digital and unplugged.)	**Explain** simple guidance for using technology in different environments and settings. **Explain** what passwords are and can use passwords for accounts and devices. **Know** how to use software to create animations and images.

	pasting and using keyboard shortcuts.		**Know** that programs execute by following precise instructions. Begin to **know** what loops are and how they can make code more efficient.	**Know** that computers use algorithms to make predictions. **Know** that programs execute by following precise instructions. Begin to **know** what loops are and how they can make code more efficient.	**Know** that computers use algorithms to make predictions. **Know** that programs execute by following precise instructions. Begin to **know** what loops are and how they can make code more efficient. **Identify** some ways computers are used in the wider world.	
Skills	Online Safety a) I can explain how other people's identity online can be different to their identity in real life. b) I can describe ways in which people might make themselves look different online. c) I can give examples of issues online that might make me feel sad, worried, uncomfortable or frightened; I can give examples of how I might get help. a) Understanding	Online Safety a) I can use the internet to communicate with people I don't know well (e.g. email a penpal in another school/ country). b) I can give examples of how I might use technology to communicate with others I don't know well. a) Developing word processing skills, including altering	Online Safety a) I can give examples of bullying behaviour and how it could look online. b) I understand how bullying can make someone feel. c) I can talk about how someone can/would get help about being bullied online or offline. a) Using logical thinking to explore software, predicting, testing	Online Safety a) I can explain how information put online about me can last for a long time. b) I know who to talk to if I think someone has made a mistake about putting something online. a) Using logical thinking to explore software, predicting, testing	Online Safety a) I can use keywords in search engines. b)I can demonstrate how to navigate a simple webpage to get to information I need (e.g. home, forward, back buttons; links, tabs and sections). c) I can explain what voice activated searching is and how it might be used (e.g. Alexa, Google Now, Siri). d) I can explain the difference between things that are imaginary, 'made up' or 'make believe' and	Online Safety a) I can explain simple guidance for using technology in different environments and settings. b) I can say how those rules/guides can help me. a) Using software to create story animations.

	what a computer is and that it's made up of different components. b) Recognising that buttons cause effects and that technology follows instructions. c) Learning how we know that technology is doing what we want it to do via its output. d) Using greater control when taking photos with tablets or computers. e) Developing confidence with the keyboard and the basics of touch typing.	text, copying and pasting and using keyboard shortcuts. b) Using word processing software to type and reformat text.	and explaining what it does. b) Using an algorithm to write a basic computer program. c) Learning what loops are. d) Incorporating loops to make code more efficient.	and explaining what it does. b) Using an algorithm to write a basic computer program. c) Learning what loops are. d) Incorporating loops to make code more efficient.	things that are 'true' or 'real'. e) I can explain why some information I find online may not be true. a) Learning how computers are used in the Wider World. b) Collecting and inputting data into a spreadsheet. c) Interpreting data.	b) Creating and labelling images.
Vocabulary	Battery, buttons, computer, desktop, device, electricity, invention, keyboard, laptop, monitor, mouse, technology, wire, satellite, sensor, device, film, upload, username, password, log on, log off.	Backspace, delete, image, import, paste, redo, space bar, touch type, undo, word processing, device, film, upload, username, password, log on, log off, communicate.	Abstraction, algorithm, animation, artificial intelligence, bug, data, debug, decompose, code, error, instructions, input, output, loop, predict, repeat, sequence, bullying.	Abstraction, algorithm, animation, artificial intelligence, bug, data, debug, decompose, code, error, instructions, input, output, loop, predict, repeat, Scratch, sequence, device, film, upload,	Technology, wire, satellite, sensor, algorithm, artificial intelligence, data, debug, decompose, code, error, instructions, input, output, voice activated searching.	Animation, device, film, upload, loop, predict, repeat, sequence, copyright.

				username, password, log on, log off.		
Computer program/s and/or devices needed		Laptops/Computers Word or Google Docs	iPads/ Laptops/ Computers	Scratch JR iPads	iPads/ Computers Thermometers	iPads Post it notes

Planning Ideas

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Week 1	Online Safety - Self Image and Identity Project Evolve - Me and My Avatar Objective: I can explain how other people may look and act differently online and offline.	Online Safety - Online Relationships Project Evolve - Reaching Out Objective: I can give examples of how someone might use technology to communicate with others they don't also know offline and explain why this might be risky. (e.g. email, online gaming, a pen-pal in another school / country).	Online Safety - Online Reputation Project Evolve - Long Time Online Objective: I can explain how information put online about someone can last for a long time.	Online Safety - Online Bullying Project Evolve - Supporting Sunflower Objective:I can talk about how anyone experiencing bullying can get help.	Online Safety - Managing Online Information/Copyright and Ownership Project Evolve - Supporting Sunflower Objectives: I can explain what voice activated searching is and how it might be used, and know it is not a real person (e.g. Alexa, Google Now, Siri). I can explain the difference between things that are imaginary, 'made up' or 'make believe' and	Online Safety - Privacy and Security Project Evolve: Connected Homes Objective: I can explain how some people may have devices in their homes connected to the internet and give examples (e.g. lights, fridges, toys, televisions).

					things that are 'true' or 'real'. I can explain why some information I find online may not be real or true.	
Week 2	**Prior Assessment Task** **To recognise the parts of a computer.** Children learn to name the different parts of a computer before creating an online drawing of a laptop, labelling the mouse, keyboard and screen and discussing the purpose of each.	**Prior Assessment Task** **To begin to learn to touch type.** Children learn about the setup and layout of a keyboard and exploring the basics of touch typing and understanding its importance when using computers of all types.	**Prior Assessment Task** **To decompose a game to predict the algorithms that are used.** Children play an unplugged version of a dinosaur-themed game where following instructions carefully will lead to successful programming outcomes.	**Prior Assessment Task** **To explore a new application.** Tinkering with ScratchJr independently, children build a program by dragging 'blocks' then running the code, learning that each block has a different attribute, predicting, exploring and explaining throughout.	**Prior Assessment Task** **To understand how computers can help humans survive in space.** Children learn that the International Space Centre (ISS) is a 'home' in space for astronauts who travel there and that computers are used to collect data to make sure that human needs are met on the ISS.	**Prior Assessment Task** **To understand what animation is.** Children explore what is meant by the word 'animation' to then design and create a simple animation with the use of a flip book template.
Week 3	**To recognise how technology is controlled.** Children learn how technology is controlled by labelling a robot that has been programmed for a specific purpose, focussing on which	**To understand how to use a word processor.** Following on from the introduction to touch typing, children learn about word processing and storing information in a text document as well as keyboard	**To understand that computers can use algorithms to make predictions (machine learning).** Children learn that computers can use algorithms, which are instructions, to make informed and calculated	**To create an animation.** Using the blue 'movement' blocks, children begin programming animals.	**To create a digital drawing of essential items for life in space.** Children develop mouse and keyboard skills by creating digital drawings of basic items that astronauts would need in space,	**To understand what stop motion animation is.** Children explore what is meant by the term 'stop motion animation' and create an animation using stop motion piece of software.

	forms of input it requires.	shortcuts.	predictions and help teach a computer program how to interpret different drawings.		learning about the basic survival needs of humans.	
Week 4	**To recognise technology.** Children learn about what a computer is and conduct a tour of the school, photographing the different examples of technology they spot.	**To understand how to add images to a text document.** Building upon basic word processing skills, the editing and formatting of images in a text document are explored within the context of newspaper writing.	**To plan algorithms that will solve problems.** Children build on an understanding of algorithms, explore activities on a programming piece of software: Google - Coding.	**To use characters as buttons.** Use the green 'sound' blocks to create animal sounds, selecting the microphone option to record sounds and the buttons to make it play.	**To understand the role of sensors on the ISS.** Children learn that sensor monitors are used onboard the ISS to collect data and ensure the astronauts are safe and healthy, discover how to read thermometers and design a display to show data.	**To create a stopmotion animation.** Using knowledge of the stop motion process, children create a superhero stop motion animation, using print out background and object templates.
Week 5	**To create a design for an invention.** Children design new inventions, which must include inputs and outputs, explaining how an idea works and how it is controlled using all the knowledge learnt so far.	**To create a poetry book using sources from the internet.** Children search the internet to find text that can be copied and pasted into a poetry book that will be created and learn to understand the importance of referencing copied work.	**To understand what abstraction is.** Children develop an understanding of the idea of 'abstraction' by creating a simplified map and view of part of the school.	**To follow an algorithm.** Children follow an algorithm to program a joke by designing a background, adding one or two relevant characters and using the green sound blocks to record voices.	**To create an algorithm for growing a plant in space.** Children learn what plants need to grow that will help to create an algorithm for growing a plant in space, including the use of sensors to collect vital data.	**To plan a stopmotion animation.** Using a variety of different backgrounds and objects, children plan an animation focussing on the stop motion skills acquired so far.

Week 6	To understand the role of computers. Children explore and understand the different types of computers that are used in the real world and the roles that they play	To create a digital poster using word processing skills. Children create digital posters about fire safety.	To understand what debugging is. Using their knowledge of debugging, robots are physically constructed via an unplugged algorithms activity.	To plan and use code to create an algorithm. Children put into practice all they have learnt, using a mixture of blocks to programme the story of the 'Three Little Pigs'.	To interpret data. Using an understanding of what is required to support human life by exploring a range of both real and fictitious planets, children interpret data to decide whether they might be habitable.	To create my own stopmotion animation. Children work in pairs to produce a stop motion animation, with Partner A in charge of filming the animation and Partner B in charge of moving the objects in the frame.
Week 7	How does technology work today if there is a fire etc?					
Evidence	In books or SeeSaw (QR codes in books)	Books, saved with name of corresponding lesson in children's shared drive folders, labels in books to direct to these.	Books, seesaw and QR Codes	Screenshots on Seesaw and QR codes in books	Saved in student share folders, Seesaw QR codes and labels in books	Seesaw and QR codes in books
How does it link to the big question?	How technology improves response to a fire. Comparing then/now.	Digital posters about fire safety.		Programming Kenyan animals in Scratch.	Heroes on the ISS researching about space.	Superhero themed stop motion movies.
Any other explicit computing						

links in other subjects?						