Curriculum Overview Document ICT

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	Using the mouse (left-click) Navigating menus using buttons and arrows. Colouring and painting on-screen. Using drag and drop. Weekly discussion of how ICT is used in the outside world - **Maddie's Do You Know (YouTube) & Grace's Amazing Machines (BBC iPlayer).**		**Matching key words in ICT by moving to a chosen side of the room (left of the board or right of the board).** Expanding use of the mouse (right-click, double click) when playing games. Using buttons and arrows to move around between screens. Spot the difference and matching on-screen. **Maddie's Do You Know (YouTube) & Grace's Amazing Machines (BBC iPlayer).**		Giving instructions using ICT (using arrows). What to do if you get "lost" online. Sorting & ordering items using ICT. Using simple simulations. Making a music composition using a pattern. **Maddie's Do You Know (YouTube) & Grace's Amazing Machines (BBC iPlayer).**	
Year 1	Different ways to control toys. Using 2Count to create a pictogram to show the results of a vote (such as eye colour or school dinner choice). Sorting on-screen items by grouping. Building and strengthening virtual structures. Using paint tools to create a symmetrical picture (poppy in 2Paint Split). Using copy and paste to create their own pizza design. How can we communicate online without words? Creating our own emojis.		Exploring how to give instructions in different software and on different devices. Considering how we treat each other when using ICT. Using 2Publish to consider our 5 senses in Winter. Manipulating images (resize, rotate, move) to "dress up" a character for winter. Sorting on-screen items using a Venn diagram. **Exploring key words in ICT by using paint pens to connect ICT vocabulary to the correct picture.** What is personal information? (Hectors World E-Book creation).		Why is it important to give clear instructions when programming? Drawing a picture of a plant using vague and specific instructions. Comparing different software that can be used to create similar outcomes (CBBC Creation Station vs. 2Simple). How do computers make pictures? Exploring pixels using CBBC pixel painter. Using brushes and stamps to create a scene linked summer. **Using ICT to sort and total digital money.**	
Year 2	Using brushes and stamps to create a stop motion animation of the Great Fire of London (2Animate) + Finding and saving an image using Google. Who should you tell if you find something bad online? Using Publisher to create a poster. Creating a landscape of poppies by altering brush size, shape and colour. What harm can photos do online? Explore how photos and comments can share too much information (OK to Share Scarf Activity). Creating a unique firework display by making choices in a simulation. Creating a virtual island on Kodu with cold and hot features. Program an avatar to explore it. Capture an image then label the key features. **Exploring key words in ICT, inserting and sorting vocab cards to the correct definition.**		Combine images, shapes and paint tools to create the Australian flag in MS Paint. Use Excel to collect information on Australian animals and use the data to answer questions. Sorting Australian animals using a branching database. How can we keep ourselves safe when going online? Using Google Earth to locate and explore specific locations. Create a slide to share one of Superhero Sid's top tips (Lee & Kim: Animal Magic animation by CEOP). Exploring the use of communicating without text (creating our own emojis & Memes and comparing the two methods). Giving text-based instructions using Code Monkey. Sorting on screen using a venn and carrol diagram. **Introducing BBC Microbits: Programming LEDs to create a digital name badge.**		What is a simulation and why should we use them? Growing virtual plants and discussing the advantages and disadvantages of doing so. Using stamps and tools in 2Paint to create an original plant/flower. Use MS Publisher to create a time line to show key communication inventions. Explore Food Chains in different habitats using BBC Bitesize: Food Chain Challenge. Creating a UK map that shows human and physical features (copy, pasting and formatting images in Microsoft). Should your Software Speak. Create a multimedia slide (text, images, audio, animation and button) to educate others about a piece of communication technology. Training a virtual AI to recognise the difference between trash and fish (code.org – hour of code).	
Year 3	Creating a multimedia PowerPoint on the topic of Usworth Colliery and Jackie Bassett. Turning ourselves into miners by adding image effects and transparent images. Sending & replying to emails, downloading and uploading attachments. Collecting and sorting data (Excel) about Birthstones Using a branching database to sort Birthstones. Using Kodu to create a virtual river, mountain and valley. Capture an image and label using Publisher.		Writing a program in Scratch to collect Easter eggs using IF statements. What is the difference between hardware and software? What is a variable and how does it affect simulations? Making choices to investigate how Colin likes his coffee. Creating tips to stay safe online (based on the SMART crew resources). Using effects for emphasis in PowerPoint. What is cyber-bullying and how can it take place (sorting types of bullying using a Venn diagram).		Use repeat in instructions to create 2D shapes (Logo). Create a branching database to sort 2D shapes using appropriate questions. Create a map (reformatting shapes and text boxes) to show Egypt's location in Africa. Use Google Earth to explore Egypt, identify & capture images of key land types and geological and historical features (The Nile, The Pyramids, Cairo). Use Egyptian based games to capture images in a variety of ways (right click, download, print screen).	

	Using cut, paste, drag & drop to reorder text based on the story of Guy Fawkes. Creating tips to stay safe on the computer (including creating our own avatar).	Reformatting auto shapes to create a house using suitable materials for the roof, walls, windows & floor. Designing a suitable vehicle, following a brief, to help in forest school using Computer Aided Design (Sketch Up).	Creating a virtual marble run (discussing the advantages of disadvantages) Using paint tools and brushes to gradually build up a picture of the pyramids (based on Kids Art Hub video).
Year 4	Creating postcards from Hadrian's Wall, including an image of themselves by creating transparent images (Paint3D) and reordering pictures. Using computer aided design (CAD) to create virtual mosaics and discuss the advantages of doing this. Recording Christmas jokes and altering the pitch and tempo in Audacity (exploring how the wave changes). Using text-based programming to create a poppy in Logo. Creating a blog post, sharing what we have done in the holidays, in Seesaw and discussing how to do this safely (including the difference between blogging at home and school). Using coordinates to locate key landmarks/tourist attractions in Newcastle (Google Earth), capturing images and recording locations in PowerPoint.	Use Raspberry Pi devices to create electrical circuits. Explore adding elements to a circuit using a simulation – what is the advantages of doing this. Create a graph to show the most popular pizza ingredients (including clear labelling) Who said what? Identifying fact & opinion by sorting statements (SCARF activity). What is cyber-bullying and what should you do if it happens? PowerPoint presentation using selective copy and paste. Discuss the websites used and if we trust them. **Using BBC Microbits to share an Easter message using LEDs Explore and assigning a physical input (e.g. shake, tilt, button) to play the message.**	How does ICT help us in our daily lives? Create a table in Publisher and consider how ICT helps us. Using inputs and outputs to control simulations in FlowGrid. Using text, images and animation to show the process of the Water Cycle in PowerPoint. Use IF statements and loops to solve problems in Scratch (Hour of code on Code.org). Using digital and satellite maps to explore the Himalayas. Using Excel to collect data to compare the weather in the Himalayas and Sulgrave. Creating an appropriate graph to effectively compare the data. Do you trust this website? Examining the Met Office website and exploring factors that effect if we trust it or not. **Step Counter using BBC Microbit.**
Year 5	Creating a firework display using text-based programming (Logo). What is a spreadsheet model and why is it useful? Using formulas to calculate weights on different planets. Using Paint.net to turn themselves into astronauts (building up and altering layers). Reformatting text and shapes and using animations to label the main Greek city states. Programming multiple outputs (Christmas decorations) in a simulation (FlowGrid). Use Paint3D to add shapes and crop images, remove the background and reorder to show the life cycle of an animal.	How do search engines work? Acting out how searches work and exploring ways to narrow our results. What is cyber-bullying and what should you do if it happens? Creation of a comic to show an example, solution and consequence. Do you trust everything your find online? Reality River from Google Interland. Programming a Lego robot to solve a problem (e.g. releasing a swing or pushing a lever). Independently selecting appropriate software and methods to sort images & label images to create an animal mood board for Art. Creation of a quiz in Scratch linked to a current topic. Researching quiz questions and providing sources (copyright).	Can we trust everything we find online? Exploring 2 websites linked to a current topic investigating factors that affect their validity. What is the effect of comments online? Share selfies using Seesaw and explore the effect of comments What are the key parts of a computer network? Map out a simple network and discuss & label some of the key components. Use Excel to calculate (using formulas) and present data from a Science experiment. Create a form using Office 365 to investigate what KS1 would like their toothbrush to be like. **Use a list variable to create a character that answers any question in Scratch (Barclays Magic Dinosaur Activity)**
Year 6	Creating "tweet" style messages to effectively and safely share a holiday memory. Creating a comic to effectively tell the story of Ran to a chosen audience. **Creating an AI inspired car in Scratch that uses sensing commands to avoid crashing and inserting a timer.** Using CAD to create a 3D model of a Viking Long ship. Creating a firework display by building up and altering layers. Creating a spreadsheet to compare costs of premium & budget ingredients (formulas and functions) when making a recipe for pumpkin soup. **Communicating our mood with BBC Microbits using radio broadcasts.**	**How do you make a strong password? Comparing how the length and make up of passwords effect how strong they are (comparing the time to crack passwords using a graph).** What threats do we face online? Research and present to the class information about and solutions to a selected online threat (software of their choice). **Revisiting how search engine's function and the impact AI has on our searches & how this is linked to Cloud storage.** Exploring how data is interpreted as binary code and how this effects the storage and speed of our devices. Considering if robotics is a positive or negative development (recording our observations on Seesaw). **Create a magic 8 ball using BBC Microbits (variables and 3-way IF statement).**	Use custom paths and animations in PowerPoint to show the journey of a blood cell around the heart. **Use broadcasts in Scratch Pi to program a message in Morse Code using LEDs. Replicate the result using a BBC Microbit – Which do you prefer and why?** Why do people lie in cyber-space? Exploring how others behave online and creating text art for display. Analysing an advert to explore how facts content is manipulated when advertising a product. Using extensions within Scratch to create a simple translator tool (using audio output rather than text). Sharing a tip for how to stay safe online by creating an appropriate poster by building up and altering layers (Paint.net).