WHOLE SCHOOL ICT OVERVIEW

When teaching ICT, there are 3 mains strands.

- **Computer Science:** pupils learn the principles of information and computation; how digital systems work and how to put this knowledge to use through programming.

- **Digital Literacy:** pupils are equipped with the knowledge to help them stay safe online and use technology sensibly and discernibly.

- **Information Technology:** Pupils are able use, express themselves and develop their ideas through information and communication technology including different software and devices.

Throughout each term, pupils complete a range of tasks that are designed to revisit previous skills and build and extend this understanding.

Throughout the year children will learn about the following themes.

- **Algorithms and computer programming**
- **Simulations**
- **Media Production**
- **Data Handling**
- **Using the internet**
- **Search Engines**
- **E-Safety**
- **E-Communication**
- **The key parts of a network (upper KS2)**

Objectives were created by initially breaking down the strands of the national curriculum. These were later expanded using content from Focus Education. Objectives and content are reviewed annually and changes are made, if necessary, to reflect technological changes.




EYFS

Autumn Term	
Task/Unit Content	**Mouse Skills – Left-Click** CBeebies game – children to develop the ability to select items and characters on screen using left click.
Disciplinary Knowledge	• Uses peripherals in a variety of ways to follow onscreen and audio instructions. • Uses ICT hardware to interact with age appropriate computer software. • Uses internet services and software to fulfil given goals (including staying on a selected site).
Substantive Knowledge	• Uses and understands technical language.
Task/Unit Content	**Navigating on screen menus.** Navigating on screen menus – use of buttons and arrows to move around screens/windows.
Disciplinary Knowledge	• Uses peripherals in a variety of ways to follow onscreen and audio instructions. • Uses ICT hardware to interact with age appropriate computer software. • Uses internet services and software to fulfil given goals (including staying on a selected site).
Substantive Knowledge	• Uses and understands technical language.
Task/Unit Content	**Painting** Using the mouse to alter brush size and colour to decorate/colour and create recognisable pictures.
Disciplinary Knowledge	• Uses peripherals in a variety of ways to follow onscreen and audio instructions. • Uses ICT hardware to interact with age appropriate computer software. • Uses internet services and software to fulfil given goals (including staying on a selected site).
Substantive Knowledge	• N/A
Task/Unit Content	**Drag and Drop** Using the mouse to drag and drop items to create scenes and sort items.
Disciplinary Knowledge	• Uses peripherals in a variety of ways to follow onscreen and audio instructions. • Uses ICT hardware to interact with age appropriate computer software. • Uses internet services and software to fulfil given goals (including staying on a selected site).
Substantive Knowledge	• Uses and understands technical language.
Task/Unit Content	**What are the advantages of using ICT?** Do You Know or Grace's Amazing Machines – Watch a weekly half episode and discuss, as class, how ICT helps us to perform unexpected tasks and the advantages of using it.
Disciplinary Knowledge	• N/A
Substantive Knowledge	• Uses and understands technical language. • Children recognise that a range of technology is used in places such as homes and schools.

Spring Term	
Task/Unit Content	**Keyboard Skills** Develop ability to locate specific keys on the keyboard to control on screen avatars and to type.
Disciplinary Knowledge	• Uses peripherals in a variety of ways to follow onscreen and audio instructions. • Uses ICT hardware to interact with age appropriate computer software.
Substantive Knowledge	• N/A
Task/Unit Content	**Consolidation of Mouse Skills** Consolidation of left and right click and using the mouse to drag and drop.
Disciplinary Knowledge	• Uses peripherals in a variety of ways to follow onscreen and audio instructions. • Uses ICT hardware to interact with age appropriate computer software. • Uses internet services and software to fulfil given goals (including staying on a selected site).
Substantive Knowledge	• N/A
Task/Unit Content	**Navigating on screen menus.** Consolidating navigating on screen menus – use of buttons and arrows to move around screens/windows.
Disciplinary Knowledge	• Uses peripherals in a variety of ways to follow onscreen and audio instructions. • Uses ICT hardware to interact with age appropriate computer software. • Uses internet services and software to fulfil given goals (including staying on a selected site).
Substantive Knowledge	• N/A
Task/Unit Content	**Spot the Difference** Using on screen games to spot and identify differences.
Disciplinary Knowledge	• Uses peripherals in a variety of ways to follow onscreen and audio instructions. • Uses ICT hardware to interact with age appropriate computer software. • Uses internet services and software to fulfil given goals (including staying on a selected site).
Substantive Knowledge	• N/A
Task/Unit Content	**What are the advantages of using ICT? (continuous throughout the year)** Do You Know or Grace's Amazing Machines – Watch a weekly half episode and discuss, as class, how ICT helps us to perform unexpected tasks and the advantages of using it.
Disciplinary Knowledge	• N/A
Substantive Knowledge	• Uses and understands technical language. • Children recognise that a range of technology is used in places such as homes and schools.
Task/Unit Content	**Exploring key words in ICT** Physically match the picture to the key word (keyboard, window, mouse, cross off) by moving to a chosen side of the room (left of the board or right of the board).
Disciplinary Knowledge	• Uses peripherals in a variety of ways to follow onscreen and audio instructions.
Substantive Knowledge	• Uses and understands technical language.

Summer Term	
Task/Unit Content	**Sorting on Screen** Using drag & drop to sort & sequence items on screen based on statements e.g. goes in the Kitchen (CBeebies Pablo's Art Adventure).
Disciplinary Knowledge	• Uses peripherals in a variety of ways to follow onscreen and audio instructions. • Completes a simple program on a computer. • Uses ICT hardware to interact with age appropriate computer software. • With support, uses ICT to store information. • With support, uses ICT to present Information. • Uses internet services and software to fulfil given goals (including staying on a selected site).
Substantive Knowledge	• Knows that information can be retrieved from computers. • Uses and understands technical language.
Task/Unit Content	**What happens if I get lost online?** Reading Penguin Pig and discussing the concept of "getting lost" online. Introduce the concept of browsing and personal data. Use a Zoo website to try and locate a Penguin Pig and introduce the idea that we can't trust everything we find online.
Disciplinary Knowledge	• Uses internet services and software to fulfil given goals (including staying on a selected site).
Substantive Knowledge	• Uses and understands technical language. • Children recognise that a range of technology is used in places such as homes and schools.
Task/Unit Content	**What are the advantages of using ICT?** Use My Pet and Me and Down at the Farm games (CBeebies) to care for virtual animals and discuss the advantages of doing this in comparison to doing this in the real world.
Disciplinary Knowledge	• Uses internet services and software to fulfil given goals (including staying on a selected site).
Substantive Knowledge	• Uses and understands technical language. • Children recognise that a range of technology is used in places such as homes and schools.
Task/Unit Content	**Making Music on Computers** Use 2Compose to create a simple music composition that repeats sounds/instruments. Children to create a Christmas tune using appropriate instruments.
Disciplinary Knowledge	• Completes a simple program on a computer. • Uses ICT hardware to interact with age appropriate computer software.
Substantive Knowledge	• N/A
Task/Unit Content	**Controlling characters** Use the Beebots to play I-Spy (buttons to control). Control others toys using different methods (pull back, remote control, push) to move them around the Beebot mats. Control on-screen avatars using different methods i.e. arrows, left click, drag and drop.
Disciplinary Knowledge	• Uses peripherals in a variety of ways to follow onscreen and audio instructions. • Completes a simple program on a computer.
Substantive Knowledge	• Uses and understands technical language.
Task/Unit Content	**What are the advantages of using ICT?** Do You Know or Grace's Amazing Machines – Watch a weekly half episode and discuss, as class, how ICT helps us to perform unexpected tasks and the advantages of using it.

Disciplinary Knowledge	• N/A
Substantive Knowledge	• Uses and understands technical language. • Children recognise that a range of technology is used in places such as homes and schools.

Y1

Autumn Term	
Task/Unit Content	**Control Technology – Exploring how ICT and control is used in the toys that we have.** Examine different toys and discuss how they are controlled (e.g. remote-control train, pull back car, bop it, Bee Bots). Draw a picture of one of their toys and label on how it is controlled – introduce the concept of control technology and algorithms.
Disciplinary Knowledge	• Uses technology purposefully to create digital content. (IT1.2a)
Substantive Knowledge	• Understands what algorithms are. (IT1.1a)
Task/Unit Content	**How can we use ICT to communicate online without words?** Emoji Quiz – explore how different emojis can connote different emotions. Discuss how we can tell how each emoji is "feeling". Use tools to alter a shape (circle) and add details (mouth & eyebrows) within Paint3D. Insert stickers, resize and reposition (eyes).
Disciplinary Knowledge	• Uses ICT to communicate as part of a group. (IT1.3d) • Uses technology safely and sensibly (IT1.3a).
Substantive Knowledge	• N/A
Task/Unit Content	**Creating symmetrical pictures** Use 2Paint Split to create a symmetrical poppy. Use Google images to explore the key features of a poppy. What do they all have (in common)?
Disciplinary Knowledge	• Uses technology purposefully to create digital content. (IT1.2a)
Substantive Knowledge	• N/A
Task/Unit Content	**Using brushes and stamps to create a scene.** Linked with seasonal change using tools & brushes to create a weather picture or firework display in the night sky in 2Paint by altering brush size, colour and direction.
Disciplinary Knowledge	• Uses technology purposefully to create digital content. (IT1.2a)
Substantive Knowledge	• N/A
Task/Unit Content	**Using ICT to store and present data.** Use 2Simple infant tool kit to create a simple pictogram to show the result of a vote (e.g. school dinner choice, eye colour). Name to be added as title. Create a Venn diagram in PowerPoint to sort items linked with Christmas – including inserting (online pictures), resizing and moving images.
Disciplinary Knowledge	• Uses technology purposefully to store digital content. (IT1.2b) • **Uses technology to present simple data. (IT1.2c)**
Substantive Knowledge	• N/A
Task/Unit Content	**Using ICT to sort and total on-screen**

	Use TopMarks interactive game to sort different items e.g. coins and create totals using drag and drop. https://www.topmarks.co.uk/money/coins-game
Disciplinary Knowledge	• Uses technology purposefully to store digital content. (IT1.2b)
Substantive Knowledge	N/A

Spring Term	
Task/Unit Content	**Giving instructions to a programmable toy. Exploring different ways to give instructions using ICT.** Use Beebots – Treasure Island Map – to program the robots to reach the X avoiding hazards. Pupils to work in small groups (differentiated) and decide on an appropriate way to record their instructions. When not working with the Beebots, children spell key words using the Beebot simulation game (flash file ran through ruffle).
Disciplinary Knowledge	• Creates simple programs by giving instructions. (IT1.1b) • Use simple on-screen games and simulations. (IT1.1c)
Substantive Knowledge	• Understands what algorithms are. (IT1.1a)
Task/Unit Content	**To consider carefully how we treat others online and to think before sharing.** As a class, read and discuss Digi-Duck's Big Decision (E-Book from Child.net) – including how others feel because of his actions, how the internet helps to spread content without control and solutions for if similar things happen.
Disciplinary Knowledge	• Is beginning to use technology safely and sensibly. (IT1.3a) • Recognises advertising and learns to ignore it. (IT1.3c)
Substantive Knowledge	• Keeps personal information private. (IT1.3b) • Is beginning to understand the importance of using technology safely and sensibly. (IT1.3a)
Task/Unit Content	**What are personal details and why shouldn't we share them?** Watch Hector's World Episode: Details, Details, Details. Discuss what is meant by personal details. As a class, retell the story in our own words (including advice). Use brushes and fill to colour a scene from the story and record audio explaining that scene. Best examples are then combined to create our own audio book retelling the narrative.
Disciplinary Knowledge	• Uses technology safely and sensibly. (IT1.3a) • Recognises advertising and learns to ignore it. (IT1.3c)
Substantive Knowledge	• Keeps personal information private. (IT1.3b)
Task/Unit Content	**Manipulating images to dress a manakin** Import, resize & rotate transparent pngs to dress a character in appropriate clothes for the weather. Decide which images to use and delete unused ones. Add WordArt.
Disciplinary Knowledge	• Uses technology purposefully to create digital content. (IT1.2a)
Substantive Knowledge	• N/A
Task/Unit Content	**What do we sense when the seasons change?** Use 2Publish to combine text (altering font, size and colour) and images (importing photos and using brushes to create our own) to explore what we smell, hear, taste and feel when the seasons change.
Disciplinary Knowledge	• Uses technology purposefully to create digital content. (IT1.2a)
Substantive Knowledge	• N/A

Summer Term	
Task/Unit Content	**Why is it important to give clear instructions when programming a computer?** Draw a picture on paper following vague instructions. Discuss as a class how none of the pictures look like what I want. Redraw the picture using more specific instructions. Discuss that a computer can only follow clear instructions or a clear algorithm and will determine what you program literally.
Disciplinary Knowledge	• Use simple on-screen games and simulations. (IT1.1c)
Substantive Knowledge	• Understands what algorithms are. (IT1.1a)
Task/Unit Content	**Comparing Methods (Software Comparison)** Discuss the idea that computer offer use many different ways to complete similar tasks with similar results. Create a spring scene using BBC Creation Station and then create a scene using Simple City. Discuss which method was easier and which was preferred and why?
Disciplinary Knowledge	• Uses technology purposefully to create digital content. (IT1.2a)
Substantive Knowledge	• N/A
Task/Unit Content	**How do computers make pictures?** Introduce the concept of Pixels and use CBBC Creation Station – Pixel Painter to gradually build up an image using coloured dots.
Disciplinary Knowledge	• Uses technology purposefully to create digital content. (IT1.2a)
Substantive Knowledge	• N/A
Task/Unit Content	**Exploring key words in ICT** Use 2Paint to connect key vocabularly (Folder, Pictogram, Avert/Popup, Webpage, Keyboard, Font, Left-Click, Right-Click, Copy & Paste) using different coloured pens.
Disciplinary Knowledge	• Uses technology to present simple data. (IT1.2c) • Uses technology purposefully to create digital content. (IT1.2a) • Recognises advertising and learns to ignore it. (IT1.3c)
Substantive Knowledge	• N/A
Task/Unit Content	**Building and strengthening virtual structures.** Explore how to position materials to strengthen simple on-screen structures using Base Builder from PBS Kids. https://pbskids.org/readyjetgo/games/base-builder
Disciplinary Knowledge	• Use simple on-screen games and simulations. (IT1.1c) • Suggest ways to make material/product stronger.
Substantive Knowledge	• N/A
Task/Unit Content	**Sort items on-screen by grouping** Consider what can be recycled and what is waste. Sort recycling using Simple City & Tiny Pop PJ Masks Pick Up Power Up game: https://www.tinypop.com/game/pj-masks-pick-up-power-up-game/ Expand to sorting using Venn diagrams.
Disciplinary Knowledge	• Uses technology purposefully to store digital content. (IT1.2b) • Uses technology to present simple data. (IT1.2c)

Substantive Knowledge	N/A

Y2

Autumn Term	
Task/Unit Content	**Using brushes and tools to create a stop motion animation.** Use Google Images to locate an appropriate background of London and save using right click. Use 2Animate to gradually build up flames, with the fire growing cell by cell. Adjust speed and export completed animations as a GIF.
Disciplinary Knowledge	• Use 2Animate to gradually build up a stop motion fire on top of the image using brushes and spray. • Alter tempo then export as an animated GIF. • Uses a combination of technology purposefully to create digital content. (IT2.2a) • Uses technology purposefully to manipulate digital content. (IT2.2b) • Uses technology (and internet services) to retrieve digital content. (IT2.2d)
Substantive Knowledge	• N/A
Task/Unit Content	**Can you create a unique firework display using algorithms? Why are clear steps important?** Use flash game to alter variables to create a firework display on screen (altering size, angle, height, shape and colour). Introduce key term: variable. Predict what will happen when we alter the variables. Discuss the need for instructions within algorithms to be clear and precise. Consolidate the concept of simulations & their advantages.
Disciplinary Knowledge	• Tests and changes programs. (IT2.1c) • Uses logical reasoning to predict the behaviour of simple programs. (IT2.1d)
Substantive Knowledge	• Recognises some common uses of information technology beyond school such as simulations. (IT2.3f) • Understands that algorithms are implemented as programs on digital devices. (IT2.1a) • Understands that programs execute by following precise and unambiguous instructions. (IT2.1b)
Task/Unit Content	**Creating our own virtual island.** Use Kodu to build up a virtual island that include hot and cold features (e.g. snow, beach, palm trees, icebergs). Add an avatar and program it to move using the keyboard.
Disciplinary Knowledge	• Tests and changes programs. (IT2.1c) • Uses logical reasoning to predict the behaviour of simple programs. (IT2.1d) • Uses technology purposefully to manipulate digital content. (IT2.2b) • Uses a combination of technology purposefully to create digital content. (IT2.2a)
Substantive Knowledge	• Understands that algorithms are implemented as programs on digital devices. (IT2.1a) • Understands that programs execute by following precise and unambiguous instructions. (IT2.1b)
Task/Unit Content	**What's the harm in sharing photos online?** OK to Share SCARF activity – work through examples of images and decide as a class if it is OK to share them and why. Expand this to include recognising what cyber-bullying is and what to do if it happens (via a kahoot quiz).
Disciplinary Knowledge	• Uses technology respectfully. (IT2.3a)
Substantive Knowledge	• Recognises cyber-bullying and what to do if it happens. (IT2.3d) • Recognises some common uses of information technology beyond school such as simulations. (IT2.3f)
Task/Unit Content	**Who can we tell if something bad happens online?** Use Publisher to create a poster to demonstrate who we can tell if we find something inappropriate. Mind map then add WordArt. Insert images and add effects.
Disciplinary Knowledge	• Uses a combination of technology purposefully to create digital content. (IT2.2a) • Uses technology purposefully to manipulate digital content. (IT2.2b)
Substantive Knowledge	• Identifies where to go for help and support when they have concerns about content or contact on the internet or other online technologies. (IT2.3b)
Task/Unit Content	**Using brushes and stamps to create a field of poppies (consolidation of Y1 & pre-cursor to designing own flower).** Use 2Simple Paint Advanced to select and alter brushes, stamps and tools to create a scene.
Disciplinary Knowledge	• Uses a combination of technology purposefully to create digital content. (IT2.2a)

Substantive Knowledge	• N/A
Task/Unit Content	**How can we use ICT to communicate without text?** Discuss different ways to communicate without typing online. Identify different emojis. https://www.bbc.co.uk/cbbc/quizzes/bp-tricky-emoji-quiz Create their own emoji and Meme Emoji Maker: https://www.bbc.co.uk/cbbc/quizzes/emoji-generator Meme Maker: https://www.bbc.co.uk/games/embed/cbbc-tier1-creative-tool-creative?exitGameUrl=https%3A%2F%2Fwww.bbc.co.uk%2Fcbbc%2Fgames%2Fcbbc-creative-lab-fun-art-game Different ways of saving images – Emoji (printscrn) & Meme Right Click (pre-cursor to Y3). KQ: What is the difference between a Meme and Emoji? Compare the two methods via a table.
Disciplinary Knowledge	• Uses ICT to communicate with a partner. (IT2/1.3e) • Uses technology safely and respectfully. (IT2/1.3a) •
Substantive Knowledge	• Recognises some common uses of computers outside of the classroom, such as simulations. (IT2/1.3f) • Is beginning to understand the importance of using technology safely and sensibly. (IT2.3g)
Task/Unit Content	**Exploring key words in ICT** • Card match activity, inserting and sorting vocabulary and definition based on key words related to multimedia (Font, Stamp, Copy & Paste, Load, Digital, Tool, Brush)
Disciplinary Knowledge	• Uses technology purposefully to organise and sort digital content. (IT2.2c) • Uses technology purposefully to manipulate digital content. (IT2.2b)
Substantive Knowledge	• N/A

Spring Term	
Task/Unit Content	**Combining Paint tools and brushes to create something new** Use Google images to explore how the Australian flag is set out. Use brushes and shapes in MS Paint to mimic the main section. Use the fill tool to accurately (using zoom) colour the union flag. Combine the two elements and save as a new image.
Disciplinary Knowledge	• Uses technology purposefully to manipulate digital content. (IT2.2b) • Uses a combination of technology purposefully to create digital content. (IT2.2a) • Uses technology (and internet services) to retrieve digital content. (IT2.2d)
Substantive Knowledge	• N/A
Task/Unit Content	**Using Excel to collect & store data** Collect data on Australian animals and enter it into a pre-prepared Excel spreadsheet (introduce key terms: database, field and record). Answer questions based on the data and discuss the advantages of using ICT to store data. Use 2Count to create a bar chart to present data from 1 field from the database.
Disciplinary Knowledge	• Uses technology purposefully to organise and sort digital content. (IT2.2c) •
Substantive Knowledge	• Recognises some common uses of information technology beyond school such as simulations. (IT2.3f)
Task/Unit Content	**What is a Branching Database and how does it work?** Use a branching database to sort Australian animals.
Disciplinary Knowledge	• Uses technology purposefully to organise and sort digital content. (IT2.2c)
Substantive Knowledge	• N/A
Task/Unit Content	**Using Satellite Maps to locate a specific location** Use Google Earth to search and locate a specific location on the earth (comparing Mugurmareno, Zambia, and Sulgrave). Copy the image and add text – a title and name (altering font, size and colour).
Disciplinary Knowledge	• Uses technology purposefully to manipulate digital content. (IT2.2b) • Uses a combination of technology purposefully to create digital content. (IT2.2a) • Uses technology (and internet services) to retrieve digital content. (IT2.2d)
Substantive Knowledge	• Recognises some common uses of information technology beyond school such as simulations. (IT2.3f)
Task/Unit Content	**Introducing BBC Microbits: Programming LEDs to create a digital name badge.** Alter “Show LED” commands to display their initials. Loop the commands using a forever loop. Predict what will happen now we have made this change. Add waits between commands. Explore adding an icon (pre-programmed) Programming to be tested at each stage.
Disciplinary Knowledge	• Tests and changes programs. (IT2.1c)
Substantive Knowledge	• Understands that algorithms are implemented as programs on digital devices (IT2.1a).

Task/Unit Content	**Giving text-based instructions to control an avatar** Consolidate the concept of algorithms. BBC Bitesize: What is an algorithm? https://www.bbc.co.uk/bitesize/topics/z3tbwmn/articles/z3whpv4 Use Code Monkey resources to introduce the difference between controlling characters in games and using text-based coding. Coding Adventures: https://www.codemonkey.com/hour-of-code/coding-adventure Space Adventure: https://www.codemonkey.com/hour-of-code/space-adventure/ Discuss example coding as a class and predict what will happen.
Disciplinary Knowledge	• Tests and changes programs. (IT2.1c) • Uses logical reasoning to predict the behaviour of simple programs. (IT2.1d) •
Substantive Knowledge	• Understands that programs execute by following precise and unambiguous instructions. (IT2.1b) • Understands that algorithms are implemented as programs on digital devices. (IT2.1a)

Summer Term	
Task/Unit Content	**Creating a Strawberry Plant with Augmented Reality** What is a simulation & why do we use them? Label & colour Chromeville strawberry plant activity. Chromeville app used to create a simulation then explore actions to make it grow (pruning, adding soil, watering, sunlight, pest control). BBC Bitesize used to consolidate key parts of a flower: https://www.bbc.co.uk/bitesize/articles/z2vhxbk SciShow Kids (YouTube video) used to explore different ways seeds are spread: https://www.youtube.com/watch?v=WqgVks9NViQ
Disciplinary Knowledge	• Uses technology purposefully to manipulate digital content. (IT2.2b) • Uses a combination of technology purposefully to create digital content. (IT2.2a)
Substantive Knowledge	• Recognises some common uses of information technology beyond school such as simulations. (IT2.3f)
Task/Unit Content	**Can you create an original new flower?** Consolidation of using brushes and stamps within 2Paint.
Disciplinary Knowledge	• Uses technology purposefully to manipulate digital content. (IT2.2b) • Uses a combination of technology purposefully to create digital content. (IT2.2a)
Substantive Knowledge	• N/A
Task/Unit Content	**How did people communicate before Smartphones?** Use MS Publisher to a time line to show key communication inventions.
Disciplinary Knowledge	• Uses technology purposefully to manipulate digital content. (IT2.2b) • Uses a combination of technology purposefully to create digital content. (IT2.2a)
Substantive Knowledge	• N/A
Task/Unit Content	**How do food chains change in different habitats?** What is a foodchain (BBC Bitesize: https://www.bbc.co.uk/bitesize/topics/zx882hv/articles/z3c2xnb) Create their own foodchains from a Woodland, Tundra & Savannah - https://www.bbc.co.uk/bitesize/topics/z6wwxnb/articles/z93vdxs
Disciplinary Knowledge	• Uses technology (and internet services) to retrieve digital content. (IT2.2d)
Substantive Knowledge	• N/A
Task/Unit Content	**Should your software speak? (linked to DT) – creating a multimedia presentation.** Explore existing software (e.g. 2Simple, CBeebies) and discuss what they have in common. Select an communication invention and use PowerPoint to create a multimedia slide that includes text, images, audio, a next button and animations.
Disciplinary Knowledge	• Uses technology purposefully to manipulate digital content. (IT2.2b) • Uses a combination of technology purposefully to create digital content. (IT2.2a) • Uses technology (and internet services) to retrieve digital content. (IT2.2d)
Substantive Knowledge	• N/A
Task/Unit Content	**Creating a map that shows human and natural features.** Use the BBC website to label the countries and capitals of the UK. Right click to save a labelled image. Insert key features in Publisher based on those covered in the BBC video (I.e., The houses of parliament, the tower of London, The Giant's Causeway, Mount Snowden, Loch Ness). Inserted labels to show the English Channel, North Sea and Irish Sea.

Disciplinary Knowledge	• Uses technology purposefully to manipulate digital content. (IT2.2b) • Uses a combination of technology purposefully to create digital content. (IT2.2a) • Uses technology (and internet services) to retrieve digital content. (IT2.2d)
Substantive Knowledge	• N/A
Task/Unit Content	**Training AI to tidy the ocean** Introduce the concept of machine learning (Hour of Code video) Train virtual AI to differentiate between trash & fish (Hour of Code Activity). AI for Oceans: https://studio.code.org/s/oceans/lessons/1/levels/1
Disciplinary Knowledge	• Tests and changes programs. (IT2.1c) • Uses logical reasoning to predict the behaviour of simple programs. (IT2.1d)
Substantive Knowledge	• Understands that programs execute by following precise and unambiguous instructions. (IT2.1b) • Understands that algorithms are implemented as programs on digital devices. (IT2.1a)
Task/Unit Content	**Sorting food groups** Sort food into groups using the Sheppard software game. https://www.sheppardsoftware.com/health/nutrition/food-groups-game/ Once complete, save an image using right click. Alternatives available in the Science menu (e.g. sorting types of animals).
Disciplinary Knowledge	• Uses technology (and internet services) to retrieve digital content. (IT2.2d) • Uses technology purposefully to organise and sort digital content. (IT2.2c)
Substantive Knowledge	• N/A
Task/Unit Content	**Using ICT to store and present data.** • Create a Venn and Carrol diagram in PowerPoint to sort items – including inserting online pictures, inserting shapes, resizing & moving images and adding effects for emphasis.
Disciplinary Knowledge	• Uses technology purposefully to manipulate digital content. (IT2.2b) • Uses a combination of technology purposefully to create digital content. (IT2.2a) • Uses technology purposefully to organise and sort digital content. (IT2.2c) • Uses technology (and internet services) to retrieve digital content. (IT2.2d)
Substantive Knowledge	• N/A

Y3

Autumn Term	
Task/Unit Content	**Creating of a multimedia presentation (topic: Mining)** Read Jackie Bassett article as a class and highlight key information – use these to create clear bullet points in PowerPoint. Use Google to research information about an Anthracasuarus and copy and paste into a slide (introduce keyboard shortcuts). Insert an online picture of the dinosaur. Using Durham Mining Museum to save maps of the Usworth Colliery and insert into new slides (altering layout).
Disciplinary Knowledge	• Create buttons & add transitions and design sets. • Uses search technologies effectively. (IT3.2a) • Uses a variety of software to accomplish given goals. (IT3.2b) • Creates and improves digital content. (IT3.2d)
Substantive Knowledge	• N/A
Task/Unit Content	**Turning ourselves into a miner (Image Manipulation)** Load selfies into PowerPoint and add transparent PNGs of a helmet, beard, pickaxe & frame to the image. Resize, move and reorder (using Format) the images to "dress up" the image. Use format to alter the colour of each image (black and white or sepia) and export as a JEPG.
Disciplinary Knowledge	• Uses a variety of software to accomplish given goals. (IT3.2b) • Creates and improves digital content. (IT3.2d)
Substantive Knowledge	• N/A
Task/Unit Content	**What is E-Communication and how do we use it?** Use McWizard email resources to send an email to the character, reply and attach an image (discuss the dangers and advantages of doing so). Discuss how we use ICT to communicate (and the advantages of doing so). Break down the different parts of an email address and discuss what makes a strong password.
Disciplinary Knowledge	• Uses technology responsibly. (IT3.3a) • Identifies a range of ways to report concerns. (IT3.3b) • Uses ICT to communicate clearly with another person. (IT3.3f)
Substantive Knowledge	• Recognises the importance of staying safe and methods achieve this. (IT3.3c) • Recognises some advantages of using ICT. (IT3.3e)
Task/Unit Content	**How can we use Branching Databases to store information and answer questions?** Use Publisher to sort a range of birthstones (images). Insert text boxes and reformat to make them more readable, insert arrows (rotate and resize) & insert and resize images.
Disciplinary Knowledge	• Collects and sorts data in different ways to answer questions. (IT3.2c)
Substantive Knowledge	• N/A
Task/Unit Content	**Using Sort and Filter in Excel to answer questions.** Add data based on different birthstones into a pre-prepared Excel sheet. Apply custom sort and filter to answer questions (including questions created by a partner).
Disciplinary Knowledge	• Collects and sorts data in different ways to answer questions. (IT3.2c)
Substantive Knowledge	• N/A
Task/Unit Content	**Creating a 3D model using Computer Aided Design** Use satellite maps (Google Earth, Street view & maps) to investigate key features of local rivers. Use Kodu game lab to create a virtual river, mountain & valley using tools and brushes. Capture images and label using appropriate software.

Disciplinary Knowledge	• Understands the importance and advantages of using simulations. (IT3.1d) • Uses a variety of software to accomplish given goals. (IT3.2b) • Creates and improves digital content. (IT3.2d)
Substantive Knowledge	• Recognises some advantages of using ICT. (IT3.3e)
Task/Unit Content	**Using cut, paste, drag & drop to reorder text based on the story of Guy Fawkes.** Use pre-prepared statements in Word to tell the story of Guy Fawkes. Cut, paste, drag and drop to reorder the text. Reformat and add punctuation using SHIFT.
Disciplinary Knowledge	• Creates and improves digital content. (IT3.2d) • Uses a variety of software to accomplish given goals. (IT3.2b)
Substantive Knowledge	• N/A
Task/Unit Content	**Staying SMART Online (sharing tips and creation of an avatar)** Discuss good practice when going online in order to stay safe (revisit Child net SMART tips). Create an avatar and add a Smart tip in their own words. Create an appropriate nickname (discuss as a class how to create appropriate nicknames and passwords).
Disciplinary Knowledge	• Uses technology responsibly. (IT3.3a) • Identifies a range of ways to report concerns. (IT3.3b)
Substantive Knowledge	• Recognises the importance of staying safe and methods achieve this. (IT3.3c).

Spring Term	
Task/Unit Content	**Writing an algorithm to collect items.** Gradually build up instructions within scratch the move sprites randomly (loops and angles of turn) and remove them when the mouse touches them (IF statements) to collect items (e.g. Easter Eggs).
Disciplinary Knowledge	• Writes programs that accomplish specific goals. (IT3.1a) • Debugs simple programs. (IT3.1b)
Substantive Knowledge	• N/A
Task/Unit Content	**What is the difference between hardware and software?** Use a Seesaw template to research and present examples of hardware and software. Match the examples collected by a partner.
Disciplinary Knowledge	• Uses ICT to communicate clearly with another person. (IT3.3f)
Substantive Knowledge	• Recognises some advantages of using ICT. (IT3.3e)
Task/Unit Content	**What is a variable and how does it affect the outcome of simulations?** Use Colin's Coffee & Flight Simulator games (Flash games played through Ruffle) to experiment with making choices to investigate (what combination Colin likes in his coffee) and alter the outcome of simulations. Consolidate what a simulation is and the advantages of using them (class discussion).
Disciplinary Knowledge	• Explores the effect of variables on simulations. (IT3.1c) • Controls or simulates physical systems. (IT3.1e)
Substantive Knowledge	• Understands the importance and advantages of using simulations. (IT3.1d) • Recognises some advantages of using ICT. (IT3.3e)
Task/Unit Content	**Sharing tips to stay safe online (using effects for emphasis in PowerPoint).** Explore SMART tips and consolidate with Kara and the SMART crew resources (child net). Add a tip for staying safe online into PowerPoint. Use format to alter background, line and add effects for emphasis. Export the completed tips as a JPEG.
Disciplinary Knowledge	• Identifies a range of ways to report concerns. (IT3.3b) • Uses technology responsibly. (IT3.3a)
Substantive Knowledge	• Recognises the importance of staying safe and methods achieve this. (IT3.3c)
Task/Unit Content	**What is Cyber-Bullying and what are the consequences of taking part?** Discuss bullying and mind map examples on Seesaw template. Use a Venn diagram to sort the examples into real-world bullying, cyber-bullying or both. Use the comment tool to add a consequence of taking part once template is submitted.
Disciplinary Knowledge	• Uses technology responsibly. (IT3.3a) • Collects and sorts data in different ways to answer questions. (IT3.2c)
Substantive Knowledge	• Recognises the importance of staying safe and methods achieve this. (IT3.3c) • Recognises cyber-bullying and the consequences of taking part. (IT3.3d)
Task/Unit Content	**Creating a 2D design by reformatting autoshapes** Use Publisher to create a 2D model of a house & reformat the shapes to show which materials will be used for the floor, roof, window & walls. Add text boxes to explain why each material is suitable (linked to rocks & soils topic).
Disciplinary Knowledge	• Uses a variety of software to accomplish given goals. (IT3.2b) • Creates and improves digital content. (IT3.2d)
Substantive Knowledge	• N/A
Task/Unit Content	**Creating a suitable vehicle for forest school using Computer Aided Design.**

	Discuss the requirements for a forest school vehicle (bright colours for safety, large, steady wheels, a large boot space). Use Sketch up to create a 3D model of their vehicle.
Disciplinary Knowledge	• Uses a variety of software to accomplish given goals. (IT3.2b) • Creates and improves digital content. (IT3.2d)
Substantive Knowledge	• Recognises some advantages of using ICT. (IT3.3e) • Understands the importance and advantages of using simulations. (IT3.1d)

Summer Term	
Task/Unit Content	**Can you create 2D shapes without having to draw them? (Logo Programming)** Use 2Simple Logo to give commands to draw common 2D shapes (including using different angles of turn). Extend this to include the use of repeat – test instructions and adjust where necessary.
Disciplinary Knowledge	• Writes programs that accomplish specific goals. (IT3.1a) • Debugs simple programs. (IT3.1b)
Substantive Knowledge	• N/A
Task/Unit Content	**Using a Branching Database to store different shapes.** Use Ruffle Flash Player to sort 2D shapes using .swf file. Compare the layout the how we set out the branching database in Publisher. Class discussion - Which one was easier? Why?
Disciplinary Knowledge	• Collects and sorts data in different ways to answer questions. (IT3.2c)
Substantive Knowledge	• N/A
Task/Unit Content	**Creating a map and key** Use Paint.net to create a colour coordinated map of Africa (marking the main countries by altering tolerance when filling). Insert image into Microsoft and add a colour coordinated key (using the pipette tool).
Disciplinary Knowledge	• Uses a variety of software to accomplish given goals. (IT3.2b)
Substantive Knowledge	• N/A
Task/Unit Content	**Use Satellite Mapping to locate and identify key features** Investigate if all Africa is desert (linked to Geography) – capture examples of different land uses and label in Publisher.
Disciplinary Knowledge	• Uses search technologies effectively. (IT3.2a) • Uses a variety of software to accomplish given goals. (IT3.2b)
Substantive Knowledge	• Recognises some advantages of using ICT. (IT3.3e)
Task/Unit Content	**Capturing images in different ways (linked to Egypt).** Locate & play Mummy's Tomb from Liverpoolmuseums.org.uk (searching using key words). Capture images (including creating a Cartouche of their names) in the game using different methods (right click, download, print screen).
Disciplinary Knowledge	• Uses search technologies effectively. (IT3.2a) • Uses a variety of software to accomplish given goals. (IT3.2b) • Uses technology responsibly. (IT3.3a)
Substantive Knowledge	• N/A
Task/Unit Content	Painting the Pyramids of Giza Use paint tools and brushes in MS Paint to gradually build up a picture of the pyramids (building on creating an Australian flag – Y2). Follow along with Kids Art Hub How To Draw The Egyptian Pyramids Of Giza: https://www.youtube.com/watch?v=opE8XxsURtI. Load completed pictures into Paint3D. Create and insert a transparent sticker using magic select. Combine stickers to add their face into the sphinx (including altering image colour using filters).
Disciplinary Knowledge	• Creates and improves digital content. (IT3.2d) • Uses a variety of software to accomplish given goals. (IT3.2b)

Substantive Knowledge	• N/A
Task/Unit Content	**Creating a virtual marble run/roller coaster.** Discuss the advantages of using software compared to building a run with Y6 (look at pictures of completed runs). Use the PBS kids' website to create a virtual marble run - https://pbskids.org/catinthehat/games/marbleous-marvel-coaster Invention engine can be used to increase the challenge - https://pbskids.org/catinthehat/games/invention-engine
Disciplinary Knowledge	• Controls or simulates physical systems. (IT3.1e) • Uses a variety of software to accomplish given goals. (IT3.2b)
Substantive Knowledge	• Understands the importance and advantages of using simulations. (IT3.1d) • Recognises some advantages of using ICT. (IT3.3e)

Y4

Autumn Term	
Task/Unit Content	**What did the Romans think of Britain? (Postcards from Hadrian's Wall – Word Processing and Image manipulation)** Load selfies into Paint3D and add transparent PNGs of a helmet, armour and weapons. Resize, move and reorder (using Format) the images to "dress up" the image. Export the image as a JEPG (discuss the difference between PNGs and JPEGs). Add image to Publisher document and insert a second page in the format of the post card. Use AI to create a first-hand account of life on Hadrian's wall (based on previous learning in History).
Disciplinary Knowledge	• Uses and combines a variety of software to accomplish given goals and appeal to a familiar audience. (IT4.2a) • Presents digital content in a variety of ways. (IT4.2d)
Substantive Knowledge	• Understands how computer networks can provide multiple services, such as the World Wide Web. (IT4.1e)
Task/Unit Content	**Designing virtual mosaics – CAD (as part of DT)** Imagine you've won the lottery! Create 3 designs for the bottom of your swimming pool that say something about you. Use online resources to create computer aided designs of their mosaics (ready to create them in Art).
Disciplinary Knowledge	• Uses and combines a variety of software to accomplish given goals and appeal to a familiar audience. (IT4.2a) • Selects, uses and combines internet services. (IT4.2b)
Substantive Knowledge	• Recognises some advantages of using ICT both inside and outside of school. (IT4.3d) • Understands how computer networks can provide multiple services, such as the World Wide Web. (IT4.1e)
Task/Unit Content	**Recording and manipulating sound waves (linked to Science topic)** Record jokes into Audacity. Amplify, then alter the pitch and tempo, exploring how doing so alters the shape and size of the wave.
Disciplinary Knowledge	• Uses and combines a variety of software to accomplish given goals and appeal to a familiar audience. (IT4.2a)
Substantive Knowledge	• Recognises some advantages of using ICT both inside and outside of school. (IT4.3d)
Task/Unit Content	**Use text-based programming to create poppies (linked with Remembrance Sunday)** Discuss the difference between text and block-based programming. Use Logo to draw shapes (using repeat & angles of turn) and alter colour (fill and pen). At each step, test the programming and debug accordingly using feedback from the program (in red).
Disciplinary Knowledge	• Designs and creates programs to accomplish a variety of goals. (IT4.1a) • Debugs programs that accomplish a variety of goals. (IT4.1b) • Uses repetition in programs. (IT4.1c) • Uses logical reasoning to detect and correct errors in programs. (IT4.1d)
Substantive Knowledge	• N/A
Task/Unit Content	**Contributing to a class blog to communicate with others.** Upload content to a prep-prepared Seesaw template (text and image – saved from Google images using right click). Pupils to comment on each other's posts - discussing the need for positive comments and the effect negative comments can have. Examples to be blogged using Seesaw. Key questions: What is the difference between blogging in school and at home? How can we stay safe when communicating online?
Disciplinary Knowledge	• Uses ICT to communicate with multiple recipients. (IT4.3a) • Identifies a range of ways to report concerns about content. (IT4.3b) • Uses and combines a variety of software to accomplish given goals and appeal to a familiar audience. (IT4.2a)

	• Selects, uses and combines internet services. (IT4.2b) • Presents digital content in a variety of ways. (IT4.2d)
Substantive Knowledge	• Recognises acceptable/unacceptable behaviour and share tips and advice in order to stay safe. (IT4.3c) • Recognises some advantages of using ICT both inside and outside of school. (IT4.3d) • Understands how computer networks can provide multiple services, such as the World Wide Web. (IT4.1e)
Task/Unit Content	**Can you find landmarks using coordinates?** Use Google Earth to locate key landmarks/tourist attractions in Newcastle. Once located, use Edit > Copy Images to capture images from street view and paste into a pre-prepared PowerPoint. Pin tool to be used to display the coordinates of each location and these are then added to the slides. Key Question: What are coordinates? Discuss how coordinates are set out using longitude and latitude.
Disciplinary Knowledge	• Selects, uses and combines internet services. (IT4.2b) • Presents digital content in a variety of ways. (IT4.2d)
Substantive Knowledge	• Understands how computer networks can provide multiple services, such as the World Wide Web. (IT4.1e)
Task/Unit Content	**Using hybrid programming to solve problems.** Complete Anna and Elsa Activity from Code.org, using IF statements and loops to solve a range of on-screen problems such as navigating mazes and drawing shapes (snowflakes). Test programming at each stage and debug based on the "helpful tips" provided. How do computers understand instructions? What is the difference between physical and virtual? https://studio.code.org/courses/frozen/units/1/lessons/1/levels/1
Disciplinary Knowledge	• Designs and creates programs to accomplish a variety of goals. (IT4.1a) • Debugs programs that accomplish a variety of goals. (IT4.1b) • Uses repetition in programs. (IT4.1c) • Uses logical reasoning to detect and correct errors in programs. (IT4.1d)
Substantive Knowledge	• N/A

Spring Term	
Task/Unit Content	**Creation of a virtual and physical circuit (Raspberry Pi) (as part of DT)** Use flash game to create a circuit diagram, experimenting with different components to see the effects on the circuit. Use the Raspberry Pi devices to create a simple circuit to light up an LED. This may be extended to create a switch. *LEDs are to be used to light up models produced in DT.
Disciplinary Knowledge	• Presents digital content in a variety of ways. (IT4.2d) • Selects, uses and combines internet services. (IT4.2b) •
Substantive Knowledge	• Recognises some advantages of using ICT both inside and outside of school. (IT4.3d)
Task/Unit Content	**Using sort to present data more effectively (linked to the most popular pizza ingredients) (as part of DT)** Vote on which pizza toppings are the most popular and use ICT to create a simple bar chart to show this (including clear labelling).
Disciplinary Knowledge	• Uses technology purposefully to collect, organise, sort, search and present digital content and data. (IT4.2c) • Presents digital content in a variety of ways. (IT4.2d)
Substantive Knowledge	• N/A
Task/Unit Content	**Who said what?** Use online SCARF resource to identify face & opinion by sorting statements. Capture an image of the statements sorted, paste and crop before saving. Class discussion regarding the mixture of facts & opinions online and how to distinguish between them. https://www.coramlifeeducation.org.uk/bcyberwise/who-said-what
Disciplinary Knowledge	• N/A
Substantive Knowledge	• Recognises that some online sources more trustworthy & accurate than others. (IT4.3e)
Task/Unit Content	**What is cyber-bullying and what should you do if it happens? (Including exploration of validity of sources).** What is cyber-bullying? Create a class definition (stress the difference between technology and online). Add this to PowerPoint along with appropriate images - consolidate altering slide layout. Watch Newsround Cyber-Bullying special and discuss solutions to cyber-bullying – What are the consequences of taking part? Mind map as a class. Add extra information to the PowerPoint. Add design sets (altering using format) and transitions. Discuss the websites used for research and decide as a class if we can trust them and why.
Disciplinary Knowledge	• Identifies a range of ways to report concerns about content. (IT4.3b) • Presents digital content in a variety of ways. (IT4.2d)
Substantive Knowledge	• Recognises acceptable/unacceptable behaviour and share tips and advice in order to stay safe. (IT4.3c)
Task/Unit Content	**Do you trust this website:** As a class examine one of the websites used the presentation and analyse factors that affect how trustworthy it is (e.g. date it was updated, author, purpose and charity number)?
Disciplinary Knowledge	• N/A
Substantive Knowledge	• Recognises that some online sources more trustworthy & accurate than others. (IT4.3e) • Understands how computer networks can provide multiple services, such as the World Wide Web. (IT4.1e)

Task/Unit Content	**Using inputs and outputs to program a microcomputer** Use BBC Microbits tp share an Easter message using LED outputs. Explore and assign a physical input (e.g. shake, tilt, button) to play and loop the message.
Disciplinary Knowledge	• Designs and creates programs to accomplish a variety of goals. (IT4.1a) • Debugs programs that accomplish a variety of goals. (IT4.1b) • Uses repetition in programs. (IT4.1c) • Uses logical reasoning to detect and correct errors in programs. (IT4.1d)
Substantive Knowledge	• Understands how computer networks can provide multiple services, such as the World Wide Web. (IT4.1e)

Summer Term	
Task/Unit Content	**How does ICT help us?** Use Seesaw template to research and present a range of technology that help us perform daily tasks (e.g. an alarm clock, a cash machine, a house alarm). Discuss how technology facilitates the completion of tasks and compare to how the task was performed previously (e.g. alarm clock vs. knocker upper).
Disciplinary Knowledge	• Selects, uses and combines internet services. (IT4.2b)
Substantive Knowledge	• Recognises some advantages of using ICT both inside and outside of school. (IT4.3d)
Task/Unit Content	**Using inputs and outputs to program a simulation.** Use FlowGrid to program and loop inputs and outputs to effectively control a virtual mimic (e.g. traffic lights, a zebra crossing or a lighthouse). Experiment with altering settings and debug intentional errors (provided during teacher demonstration).
Disciplinary Knowledge	• Designs and creates programs to accomplish a variety of goals. (IT4.1a) • Debugs programs that accomplish a variety of goals. (IT4.1b) • Uses repetition in programs. (IT4.1c) • Uses logical reasoning to detect and correct errors in programs. (IT4.1d)
Substantive Knowledge	• N/A
Task/Unit Content	**Creating an animation using PowerPoint (The Water Cycle)** As a class, map out the key events within the water cycle. Insert appropriate images and labels into PowerPoint to show these then use the animation pane to time entry and exit animations to show to process of the cycle. Export the completed animation as a WMV.
Disciplinary Knowledge	• Uses and combines a variety of software to accomplish given goals and appeal to a familiar audience. (IT4.2a) • Selects, uses and combines internet services. (IT4.2b) • Presents digital content in a variety of ways. (IT4.2d)
Substantive Knowledge	• N/A
Task/Unit Content	**Using sort to present data more effectively (comparison of weather – Sunderland vs. Himalayas).** Use the Met Office to collect data showing the difference between the weather in Sunderland & the Himalayas. Enter the data into Excel and sort it to make it easier to interpret. Use the chart wizard to create a line graph that clearly compares the two sets of data. **Do you trust this website:** As a class examine the Met Office website and analyse factors that affect how trustworthy it is (e.g. date it was updated, author, purpose and links to other websites)?
Disciplinary Knowledge	• Uses technology purposefully to collect, organise, sort, search and present digital content and data. (IT4.2c) • Presents digital content in a variety of ways. (IT4.2d)
Substantive Knowledge	• Recognises that some online sources more trustworthy & accurate than others. (IT4.3e) • Understands how computer networks can provide multiple services, such as the World Wide Web. (IT4.1e)
Task/Unit Content	**Can you explore a remote location using satellites and digital maps?** Use Google maps to explore the start & end and key features of the Himalayas.
Disciplinary Knowledge	Selects, uses and combines internet services. (IT4.2b)
Substantive Knowledge	• Recognises some advantages of using ICT both inside and outside of school. (IT4.3d) • Understands how computer networks can provide multiple services, such as the World Wide Web. (IT4.1e)
	Step Counter: https://makecode.microbit.org/

Y5

Autumn Term	
Task/Unit Content	**Creating a firework display in Logo.** Gradually build up programming in FMS logo to create the following: A firework shape, Random movement of the turtle with pen up, Different pen colours & filling the background. Completed displays to be exported as an image. Key term introduced – nesting.
Disciplinary Knowledge	• Designs and create programs that accomplish specific goals. (IT5-6.1a) • Solves problems by decomposing them into smaller parts and using logical reasoning. (IT5-6.1b) • Works with variables. (IT5-6.1c)
Substantive Knowledge	• N/A
Task/Unit Content	**What is a spreadsheet model and why is it useful? – Calculating weights on different planets.** Introduce the advantages of using spreadsheet modelling (cell references) when performing calculations in Excel. Format the spreadsheet to enhance usability – filling cells, adding cell borders, altering cell width, using merge and centre and wrap text. Insert images of the planets. Enter multiplication formulas to calculate weights on different planets. Reformat the cells to display 1 decimal place. Using internet sources to check the accuracy of the calculations and discuss differences.
Disciplinary Knowledge	• Designs and creates systems to achieve a specific goal. (IT5-6.2b) • Check systems for accuracy and plausibility. (IT5-6.2c) • Analyses and evaluates data. (IT5-6.2e)
Substantive Knowledge	• N/A
Task/Unit Content	**Using a layered editing program to turn ourselves into Astronauts.** Use Google to source a space background – use advanced search to return large images only. Insert an image of themselves and remove the background (add as a new layer). Insert a spacesuit and reorder to layers to place themselves in the spacesuit. Alter the hue and saturation of their background. Flatten the image and export as a JPEG. Key Question: Why are we exporting as a JPEG and not as a PNG? Discuss the advantages and disadvantages of different image formats.
Disciplinary Knowledge	• Selects, uses and combines a variety of software to accomplish given goals. (IT5-6.2a)
Substantive Knowledge	• N/A
Task/Unit Content	**Using custom animations within PowerPoint** Load an image into the slide master and set as a fixed background. Label the key features of the image (e.g. planets or Greek City States) using text boxes and alter the font, size, colour and fill for emphasis. Introduce the use of the animation pane to insert entry and exit animations (animations for emphasis to be introduced as an extension).
Disciplinary Knowledge	• Selects, uses and combines a variety of software to accomplish given goals. (IT5-6.2a)
Substantive Knowledge	• N/A
Task/Unit Content	**Can you program the Christmas decorations to flash? (Inputs, Outputs & Processes)** Use FlowGrid to experiment with inputs and outputs to control lights in a Christmas Tree mimic. Completed flow diagrams to be print screened, pasted into Paint and saved as an image.
Disciplinary Knowledge	• Designs and create programs that accomplish specific goals. (IT5-6.1a) • Solves problems by decomposing them into smaller parts and using logical reasoning. (IT5-6.1b)

Substantive Knowledge	• N/A
Task/Unit Content	**Using formatting tools to effectively present (linked to life cycles).** Use formatting tools to create a diagram to show clearly the steps of a chosen life cycle. Custom animations used to add emphasis.
Disciplinary Knowledge	• Selects, uses and combines a variety of software to accomplish given goals. (IT5-6.2a) • Selects, uses and combines software on a range of digital devices. (IT5-6.2d)
Substantive Knowledge	• N/A
Task/Unit Content	**Can we trust everything we find online?** Use Interland Resources in Reality River by Google to answer a range of questions, analysing the validity of online content. Once the avatar has been guided across the river, download the certificate of completion.
Disciplinary Knowledge	• N/A
Substantive Knowledge	• Is discerning in evaluating digital content. (IT5-6.3b) • Recognises a range of e-threats and can share advice on how to avoid and combat them. (IT5-6.3c) • Appreciates copyright and can take measures to ensure it isn't broken. (IT5-6.3d) • Recognises the positives and negatives of ICT. (IT5-6.3e)

Spring Term	
Task/Unit Content	**How does a search engine work?** Physically act out how a search engine retrieves records of pages from servers. Introduce how servers are used to record, search and present information about websites using The Media Show. Introduce the use of Boolean operators and page rank to narrow the search results and apply using Google and Yahoo.
Disciplinary Knowledge	• Use search functions effectively to reduce the number of results returned.
Substantive Knowledge	• Understands computer networks, including the internet. (IT5-6.1e) • Appreciates how search results are selected and ranked. (IT5-6.1f)
Task/Unit Content	**What is cyber-bullying? What should you do if it happens to you? What are the consequences of taking part in it? (Comic)** Use Comic Life to create a comic showing an example of Cyber-bullying, a solution and a consequence. Discuss & mind map on the board. Use the points made to plan out a simple narrative on Seesaw (1 example, 1 solution and 1 consequence). Collect images to represent the story and insert into Comic Life. Add explanatory boxes, speech bubbles and titles. Extend to include added effects and filters and using ALT to layer images.
Disciplinary Knowledge	• Selects, uses and combines a variety of software to accomplish given goals. (IT5-6.2a) • Selects, uses and combines internet services in order to answer questions and teach others. (IT5-6.2f)
Substantive Knowledge	• Recognises a range of e-threats and can share advice on how to avoid and combat them. (IT5-6.3c) • Recognises the positives and negatives of ICT. (IT5-6.3e)
Task/Unit Content	**Programming a Lego Spike (or EV3) robot** As a class, create programming to solve a chosen problem (either swinging a wheel chair, operating a crane or releasing a spaceman on a track). Initial programming to be provided and students to analyse, predict and modify. Errors to be included – which are to be tested and debugged in order to solve the problem above. Once completed, programming to be print screened and annotated (explaining how it functions).
Disciplinary Knowledge	• Designs and create programs that accomplish specific goals. (IT5-6.1a) • Solves problems by decomposing them into smaller parts and using logical reasoning. (IT5-6.1b) • Works with variables. (IT5-6.1c)
Substantive Knowledge	• Uses logical reasoning to explain how some simple algorithms work. (IT5-6.1d)
Task/Unit Content	**Using ICT to highlight human and physical features** Collect images to show examples of human and physical features. Independently select appropriate software and methods to sort the images into human and physical features using, for example, effects & borders.
Disciplinary Knowledge	• Selects, uses and combines a variety of software to accomplish given goals. (IT5-6.2a) • Selects, uses and combines internet services in order to answer questions and teach others. (IT5-6.2f)
Substantive Knowledge	• Recognises the positives and negatives of ICT. (IT5-6.3e)
Task/Unit Content	**Creation of a quiz using Scratch programming (including copyright/validity of sources).** Research open questions about a current topic (recording sources) - consolidate the need to cross check to ensure accuracy). Build up programming in Scratch to allow user input & use IF ELSE statements to respond to correct and incorrect answers. Create a variable to keep score.
Disciplinary Knowledge	• Designs and create programs that accomplish specific goals. (IT5-6.1a) • Solves problems by decomposing them into smaller parts and using logical reasoning. (IT5-6.1b) Works with variables. (IT5-6.1c)
Substantive Knowledge	• Is discerning in evaluating digital content. (IT5-6.3b) Appreciates copyright and can take measures to ensure it isn't broken. (IT5-6.3d)
	Test understanding of programming vocabulary using Kahoot quiz.

Summer Term	
Task/Unit Content	**Can we trust everything we find on the internet? – Validity of sources** Using websites linked to the topic, complete website trust profiles for two websites, investigating who wrote the information, how old it is, the purpose of the website, which company owns the website and if it can be edited by users.
Disciplinary Knowledge	• N/A
Substantive Knowledge	• Is discerning in evaluating digital content. (IT5-6.3b) • Appreciates copyright and can take measures to ensure it isn't broken. (IT5-6.3d) • Recognises the positives and negatives of ICT. (IT5-6.3e)
Task/Unit Content	**What is the effect of online comments? (E-Communication)** Explore what is currently trending and what was trending in the past & expand discussion to discuss the concept of "public image" and the effect this has on people's perceptions. Take a selfie & upload into Seesaw. Complete "I am Great" activity from Scarf, highlighting a positive about a chosen partner anonymously. Discuss the effect of positive and negative comments and how ICT amplifies this – introduce the concept of trolling.
Disciplinary Knowledge	• N/A
Substantive Knowledge	• Understands the opportunities computer networks offer for communication and collaboration (IT5-6.3a) • Recognises a range of e-threats and can share advice on how to avoid and combat them. (IT5-6.3c) • Recognises the positives and negatives of ICT. (IT5-6.3e)
Task/Unit Content	**What are the key parts of our computer network and why is a server important?** Introduce & discuss the following key components of a network – workstations, router, server, printer, switch. Cut out images and arrange them in an appropriate layout (topology). Label components and add on annotation to show the Firewall and Proxy Settings (discuss the purpose of these).
Disciplinary Knowledge	• N/A
Substantive Knowledge	• Understands computer networks, including the internet. (IT5-6.1e)
Task/Unit Content	**Using Excel to calculate and present data (from a science experiment).** Create tables in Excel (using formatting tools) to present data from a science experiment. Use functions to calculate average and chart wizard to present the results in a clear graph (including use of appropriate chart elements).
Disciplinary Knowledge	• N/A
Substantive Knowledge	• Designs and creates systems to achieve a specific goal. (IT5-6.2b) • Check systems for accuracy and plausibility. (IT5-6.2c) • Analyses and evaluates data. (IT5-6.2e)
Task/Unit Content	**Use a list variable to create a character that answers any question (pre-cursor to the BBC Micro:Bit Magic 8-Ball)** Use Barclay's Digital Playground instructional video to complete the Magic Dinosaur task in Scratch 3. https://digital.wings.uk.barclays/code-playground/projects/ Use a list variable so that a character of their choice give an answer to any question entered – combine hybrid programming in the following areas: • Operators • Text input boxes, • List variables • Loops Games to be tested throughout. Downloadable workbook is also available.
Disciplinary Knowledge	• Designs and create programs that accomplish specific goals. • Works with variables

Substantive Knowledge	• N/A
Task/Unit Content	**Create a form using Office 365 to investigate what KS1 would like their toothbrush to be like (as part of DT)** Use Google images & physical examples to investigate key features of children's toothbrushes, including colour, use of caps and stands, characters, shape. Mind map questions for what information we would like to know from our target audience before designing. Use Office 365 to create a collaborative form with the questions from the mind map (KS1 to complete the form in ICT time).
Disciplinary Knowledge	• Selects, uses and combines internet services in order to answer questions and teach others. (IT5-6.2f)
Substantive Knowledge	• Understands the opportunities computer networks offer for communication and collaboration (IT5-6.3a)

Y6

Autumn Term	
Task/Unit Content	**What is e-communication and how can we use it? (Microblogging)** Discuss the different methods we can use to communicate using ICT (Mind map) Add their favourite holiday memory to an Office 365 Excel document (shared using collaborative document) Key Questions: What does collaborative mean? What are the advantages of using cloud base documents? Are there any disadvantages? Key Question: What makes Twitter different? Discuss the use of hashtags to group, netiquette, numbers of characters allowed, etc... Watch Common Craft Social Networking video - Physically act out how content moves across a social network – reiterate the effect ICT has on positive and negative actions.
Disciplinary Knowledge	• N/A
Substantive Knowledge	• Understands the opportunities computer networks offer for communication and collaboration (IT5-6.3a) • Recognises a range of e-threats and can share advice on how to avoid and combat them. (IT5-6.3c) • Recognises the positives and negatives of ICT. (IT5-6.3e)
Task/Unit Content	**Who was Ran and why was she important? (Comic creation).** Read the legend of Ran, Viking Goddess of the Sea and list the key parts of the story. Use Comic Life to create a comic showing the narrative. Collect images to represent the story and insert into Comic Life. Use ALT to layer some images. Add explanatory boxes, speech bubbles and titles. Add sound effects. Add appropriate effects and filters – discuss appropriate colour scheme.
Disciplinary Knowledge	• Selects, uses and combines a variety of software to accomplish given goals. (IT5-6.2a) • Selects, uses and combines internet services in order to answer questions and teach others. (IT5-6.2f)
Substantive Knowledge	• N/A
Task/Unit Content	**Using coordinates and variables to create a computer game.** Explore how machine learning is being used to create self-driving cars - "Putting an autonomous vehicle to the test in downtown London" on Bill Gates' YouTube channel (https://www.youtube.com/watch?v=ruKJCiAOmfg) Use Scratch to create a simple game where a car avatar follows the mouse and returns to the road if it hits the side – based on lane sensors. Use sensing commands to alter the Y coordinates if colour is touched & create a starting point using coordinates. Use a variable to create a timer. Print screen completed programming and upload into Seesaw. Use the text tool to annotate what is happening in each section.
Disciplinary Knowledge	• Designs and create programs that accomplish specific goals. (IT5-6.1a) • Solves problems by decomposing them into smaller parts and using logical reasoning. (IT5-6.1b) • Works with variables. (IT5-6.1c)
Substantive Knowledge	• Uses logical reasoning to explain how some simple algorithms work. (IT5-6.1d)
Task/Unit Content	**Using a layered editing program to create a firework display.** Use Google to source a local background – use advanced search to return large images only. Combine the background and fireworks as separate layers and alter accordingly (size, rotation). Alter layer settings to reduce the opacity of some of the fireworks. Flatten the image and export as a JPEG. Key Question: Why are we exporting as a JPEG and not as a PNG? Discuss the advantages and disadvantages of different image formats.
Disciplinary Knowledge	• Selects, uses and combines a variety of software to accomplish given goals. (IT5-6.2a) • Selects, uses and combines internet services in order to answer questions and teach others. (IT5-6.2f)
Substantive Knowledge	• N/A

Task/Unit Content	**Creating a spreadsheet model to calculate cost (linked to a recipe) (as part of DT).** Select a recipe from I Can Cook and use the internet to research the price of the ingredients. Using formatting tools to create a spreadsheet model to record the ingredients and prices (including reformatting cells). Use formulas (multiplication, addition, division and subtraction) to calculate costs & profit (if sold at the summer fayre). Use the SUM function to calculate overall cost. Alter individual prices and cross check with a calculator to test accuracy.
Disciplinary Knowledge	• Designs and creates systems to achieve a specific goal. (IT5-6.2b) • Check systems for accuracy and plausibility. (IT5-6.2c) • Analyses and evaluates data. (IT5-6.2e) • Selects, uses and combines internet services in order to answer questions and teach others. (IT5-6.2f)
Substantive Knowledge	• N/A
Task/Unit Content	**Communicating our mood with the Micro:Bit** Introduce the concept of radio broadcasts comparing SMS messages and MMS/WhatsApp messages on Smartphones. Highlight the fact that micro:bits understand assigned numbers rather than emotions (radio send number). As a class, work through the programming needed to send and receive a happy icon. Pupils then duplicate and modify the code to send an unhappy icon when a different input is triggered. Challenge: To modify the programming to change mood on shake. Explore completed hybrid programming and compare with text-based versions (Java Script and Python). Micro Chat project could be done to extend or as an alternative: https://www.youtube.com/watch?v=egTeIghYXak•
Disciplinary Knowledge	• Designs and create programs that accomplish specific goals. (IT5-6.1a) • Solves problems by decomposing them into smaller parts and using logical reasoning. (IT5-6.1b)
Substantive Knowledge	• Uses logical reasoning to explain how some simple algorithms work. (IT5-6.1d) • Understands computer networks, including the internet. (IT5-6.1e) • Recognizes the positives and negatives of ICT. (IT5-6.3e) • Understands the opportunities computer networks offer for communication and collaboration (IT5-6.3a)
Task/Unit Content	**Creating a 3D Viking ship (CAD) (as part of DT).** Use SketchUp to gradually build up a 3D model of a Viking ship using shapes, push and pull tool, cameras and fill. Key Question: Why should we use ICT to design? Class discussion.
Disciplinary Knowledge	Selects, uses and combines a variety of software to accomplish given goals. (IT5-6.2a)
Substantive Knowledge	Recognises the positives and negatives of ICT. (IT5-6.3e)
	Test understanding of programming vocabulary using Kahoot quiz.

Spring Term	
Task/Unit Content	**How do you make a strong password?** Use the internet to investigate how the length and make up of passwords effect how strong they are. Use Excel to create a line graph to compare the time to crack passwords of differing lengths. What else effects the strength of a password? Mind map (special characters, random words, mixed case).
Disciplinary Knowledge	• Analyses and evaluates data. (IT5-6.2e) • Selects, uses and combines internet services in order to answer questions and teach others. (IT5-6.2f)
Substantive Knowledge	• Recognises the positives and negatives of ICT. (IT5-6.3e)
Task/Unit Content	**What threats do we face when using ICT and how can we combat them?** Work in pairs to research a given threat (e.g., viruses, scams, spam) - create a document of their choice to explain to the class what it is, what to do if it happens and how to avoid it happening. Each group to present to the class (presentations to be filmed). Sources to be recorded and refenced within the presentations.
Disciplinary Knowledge	• Selects, uses and combines a variety of software to accomplish given goals. (IT5-6.2a) • Check systems for accuracy and plausibility. (IT5-6.2c) • Selects, uses and combines software on a range of digital devices. (IT5-6.2d) • Selects, uses and combines internet services in order to answer questions and teach others. (IT5-6.2f)
Substantive Knowledge	• Recognises a range of e-threats and can share advice on how to avoid and combat them. (IT5-6.3c) • Appreciates copyright and can take measures to ensure it isn't broken. (IT5-6.3d) • Recognises the positives and negatives of ICT. (IT5-6.3e)
Task/Unit Content	**What is a search engine and how does it work? (Consolidation from Y5)** Physically act out how a search engine retrieves records of pages from servers. Consolidate (from Y5) how servers are used to record, search and present information about websites. Use The Internet: How Search works by Code.org to explore how page rank functions & the use of AI within search engines to tailor searches based on user behaviour and to return relevant results by looking at combinations of words (e.g. Fast Pitcher = Baseball, Large Pitcher = Jug). Discuss how servers are used to provide cloud storage and the advantages and disadvantages of doing this. https://www.youtube.com/watch?v=LVV_93mBfSU
Disciplinary Knowledge	• Use search functions effectively to reduce the number of results returned.
Substantive Knowledge	• Understands computer networks, including the internet. (IT5-6.1e) • Appreciates how search results are selected and ranked. (IT5-6.1f)
Task/Unit Content	**What is binary code and how does it affect the technology we use?** Introduce the concept of binary code as a Base 2 number system. Use colours to demonstrate how computers assign a numerical value to each change/command. Use binary code to decode and create messages (each letter of the alphabet corresponding to a numerical values). Discuss how binary code is measured in bits and how these values effect the performance of the devices we buy (for example ROM & RAM).
Disciplinary Knowledge	• Selects, uses and combines a variety of software to accomplish given goals. (IT5-6.2a) • Selects, uses and combines internet services in order to answer questions and teach others. (IT5-6.2f)
Substantive Knowledge	• Understands computer networks, including the internet. (IT5-6.1e) • Understands the opportunities computer networks offer for communication and collaboration (IT5-6.3a)
Task/Unit Content	**Creating a magic ball with BBC Microbits (as part of DT)** Create a variable using BBC Microbits to randomly answer yes, no or maybe using a 3-way IF statement. https://makecode.microbit.org/. Consolidate what a variable is using BBC Teach: https://www.bbc.co.uk/teach/class-clips-video/computing-ks2-variables/zsd9r2p
Disciplinary Knowledge	• Designs and create programs that accomplish specific goals. (IT5-6.1a) • Solves problems by decomposing them into smaller parts and using logical reasoning. (IT5-6.1b) • Works with variables. (IT5-6.1c)
Substantive Knowledge	• N/A

Summer Term	
Task/Unit Content	**Journey of a red blood cell around the heart (animation).** Explore the journey a red blood cell takes from the lungs and through the heart (using AboutKidsHealth). Locate an appropriate image of the heart in Google images (using settings to return large images). Label the diagram in PowerPoint (ventricles and atriums). Add an oxygenated and unoxygenated blood cell (using shapes) and move around the heart using custom animation paths. Insert audio and adjust animation timing (using the animation pane).
Disciplinary Knowledge	• Selects, uses and combines a variety of software to accomplish given goals. (IT5-6.2a) • Selects, uses and combines internet services in order to answer questions and teach others. (IT5-6.2f)
Substantive Knowledge	• N/A
Task/Unit Content	**Why do people lie in cyber-space? Exploration of how others behave online & in advertising.** Class discussion on reasons why people lie online. Mind map. Create text art for display, displaying one reason why people lie in cyber space. Fontmeme.com
Disciplinary Knowledge	• Selects, uses and combines a variety of software to accomplish given goals. (IT5-6.2a) • Selects, uses and combines internet services in order to answer questions and teach others. (IT5-6.2f)
Substantive Knowledge	• Is discerning in evaluating digital content. (IT5-6.3b)
Task/Unit Content	Analyse L'Oreal advert and discuss how language is used to sell the product. Using a Seesaw template, record the adjectives and other devices (such as tag lines) used to sell the product. Locate a record the small print and discuss the implications this has on whether we trust the advert more or less. Mind map why individuals may lie online and create a label to present one of these reasons (for use on display).
Disciplinary Knowledge	• Selects, uses and combines a variety of software to accomplish given goals. (IT5-6.2a)
Substantive Knowledge	• Is discerning in evaluating digital content. (IT5-6.3b) • Recognises the positives and negatives of ICT. (IT5-6.3e)
Task/Unit Content	**How can we stay safe online? (Photo editing).** Discuss & mind map good practice for staying safe when using technology. Use Google images to locate an appropriate background image (using settings). Load saved image into Paint.net and add images on top of the background (reorganising layers). Alter the opacity of selected layers. Expand the canvas and use the text tool to share one of the pieces of good practice from the mind map. Flatten layers and export in an appropriate format.
Disciplinary Knowledge	• Selects, uses and combines a variety of software to accomplish given goals. (IT5-6.2a) • Selects, uses and combines internet services in order to answer questions and teach others. (IT5-6.2f)
Substantive Knowledge	• Recognises a range of e-threats and can share advice on how to avoid and combat them. (IT5-6.3c) • Recognises the positives and negatives of ICT. (IT5-6.3e)
Task/Unit Content	**How do adverts manipulate the viewer?** Watch L'Oreal Advert: https://www.youtube.com/watch?v=y3EEIcPkcO4 Pupils complete a Seesaw template considering their initial response to the shampoo, the language used to sell the product, the use of brand recognition/slogans and the positioning of key statistics and facts within the advert. Following examination, discuss if we trust the advert.
Disciplinary Knowledge	•
Substantive Knowledge	• Recognises the positives and negatives of ICT. (IT5-6.3e) • Is discerning in evaluating digital content. (IT5-6.3b)
Task/Unit Content	**Using Extensions in Scratch to create a translator** Insert a stage & sprite of their choice from the library.

	Enable text to speak and translate extensions (start with green flag). Create a text input box to respond to "What is your name" Add extensions to say a word in a selected language, responding to a second text input box (start "when space key is pressed". • https://scratch.mit.edu/projects/editor/?tutorial=getStarted
Disciplinary Knowledge	• Designs and create programs that accomplish specific goals.(IT5-6.1a). • Solves problems by decomposing them into smaller parts and using logical reasoning. (IT5-6.1b)
Substantive Knowledge	• N/A
Task/Unit Content	**Creating Morse Code using electrical (as part of DT)** Use Raspberry Pi's to create a simple electrical circuit (consolidation of Y5). Using MakeStuffNE, incorporate programming to make the LED flash in order to send a message in Morse Code. Replicate the programming to produce a similar result using a BBC Microbit (different method, same result). Which did you prefer and why? • Morse Chat alterative also available on https://makecode.microbit.org/
Disciplinary Knowledge	• Selects, uses and combines a variety of software to accomplish given goals. (IT5-6.2a) • Designs and creates systems to achieve a specific goal. (IT5-6.2b) • Selects, uses and combines software on a range of digital devices. (IT5-6.2d) • Designs and create programs that accomplish specific goals. (IT5-6.1a) Solves problems by decomposing them into smaller parts and using logical reasoning. (IT5-6.1b)
Substantive Knowledge	• N/A
Task/Unit Content	**Are all developments in ICT positive? (Critical thinking activity)** Explore developments in robots using Boston Engineering resources. Discuss what the robot is able to do and how this could help people – discussion points to be recorded in Seesaw. Using a Seesaw template, consider how people might feel about robots completing these tasks and if there are any dangers/negatives to this. https://www.youtube.com/watch?v=qgHeCfMa39E
Disciplinary Knowledge	• Selects, uses and combines internet services in order to answer questions and teach others. (IT5-6.2f)
Substantive Knowledge	• Recognises the positives and negatives of ICT. (IT5-6.3e)

The Base & Thrive

Pupils within the provisions follow the equals curriculum so the objectives based on the national curriculum are not appropriate. Alternatively, pupils develop their skills and understanding as part of wider topics & content. iPads are also used within class and the ICT suite is available for pupils on a Monday and Tuesday morning. Furthermore, where appropriate, some children from Blue & Yellow Base provision and Thrive access ICT with their peers and are provided with supportive materials to access projects.

Semi-Formal Equals Curriculum – ICT Links

1. **Problem Solving within ICT and Social Media**
    - Teaching learners to independently charge devices like iPads, tablets, and phones.
    - Encouraging recognition of low battery and taking action to charge without prompts.
    - Promoting discussion on planning ahead, such as charging devices at the end of the day.
    - Extending skills to generalization, such as identifying the correct charger for different devices.
2. **Use of Mobile Technology for Communication**
    - Taking photos and sending them home to share school activities.
    - Using Augmentative and Alternative Communication (AAC) apps like Proloquo2Go and Grid3.
    - Engaging in social media, emails, FaceTime, and messaging to enhance communication.
    - Downloading and sharing music, using emojis, and voice messages to express emotions.
    - Blogging and vlogging as a means of digital expression.
3. **Digital Media in Art**
    - Using digital programs like 2Paint and 2Draw to create artwork.
    - Exploring digital photography and photomontage techniques.
    - Encouraging learners to recreate famous images using digital tools.
    - Experimenting with animation, including stop-motion and 3D computer-generated techniques.

These sections highlight the role of ICT in problem-solving, communication, and creative expression across different learning activities.

Formal Equals Curriculum – ICT Links

EQUALS Formal Curriculum – The World About Us

1. **Digital Photography as a Learning Tool**
    - Emphasizes that all learners, including those with Global Learning Difficulties (GLD), can effectively use digital photography to support their learning and communication.
    - Highlights the importance of repetition in learning digital skills.
    - Encourages the use of personal cameras/devices in school.
2. **Creating, Reviewing, and Modifying Work Using ICT**
    - Encourages learners to engage with ICT tools to create, edit, and store their work.
    - Highlights the importance of systematic storage and creative decision-making.
3. **Thinking and Problem Solving with ICT**
    - Identifies common technological issues such as charging devices, storage management, and troubleshooting.
    - Suggests that learners should be exposed to and taught how to overcome these challenges.
4. **Social Media and Online Safety**
    - Discusses the potential of social media for learners with GLD.
    - Advocates for controlled access to platforms like Facebook while ensuring privacy and online safety.

EQUALS Formal Curriculum – English

5. **Use of Mobile Technology in Communication**
    - Encourages the use of smartphones for taking and sharing photos, using communication apps (e.g., Proloquo2Go, Clicker Communicator, Grid3).
    - Supports small group activities using social media, Facetime, emails, and voice messages.
    - Discusses the importance of smartphones for students with severe reading, writing, and communication difficulties.
6. **EyeGaze Technology for Communication**

- Introduces EyeGaze technology as a communication and assessment tool for learners with visual or motor impairments.
- Explains its applications in social media, messaging, and communication software.

7. **Digital Storytelling and Multimedia Narratives**
   - Recommends using digital books, video recording, and apps like Clicker7 and Book Creator for narrative development.
   - Encourages learners to create and share their own digital stories.

EQUALS Formal Curriculum – Independence

8. **Online Shopping and Digital Transactions**
   - Warns against online shopping for students with GLD due to safety concerns.
   - Discusses the complexity of navigating online transactions and recommends in-person shopping as a safer alternative.

These references indicate that within the Equals documentation ICT plays a crucial role in communication, learning, and independence, while also emphasizing the need for digital safety and structured support for learners with GLD.