Progression of ICT skills – College Road Primary School Ilearn2.co.uk Login – Username

Linked to activities from ilearn2.co.uk	EYFS and KS1		
	Understanding the World: Children recognise that a range of technology is used in places such as home and schools Interact with age appropriate computer software (40-60+ months) Health and Self Case: Understands that equipment needs to be used safely (30-50 months). Explore how sounds can be changed (30-50 months) Explore different sounds of instruments (40-60 months) They select and use technology for a particular purpose (Early Learning Goals) Represent own ideas through music (Early Learning Goals) Uses simple tools and techniques competently and appropriately (40-60+ months) Selects appropriate resources and adapts them where necessary (40-60+ months) Explores how colours can be changed (30-50 months) Chooses particularly colours to use for a purpose (40-60 months) ??? Check with Nic	NC – KS1 -understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions -create and debug simple programs -use logical reasoning to predict the behaviour of simple programs-use technology purposefully to create, organise, store, manipulate and retrieve digital content -recognise common uses of information technology beyond school -use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies	
	EYFS	Year 1	Year 2
Computer Science	Computer Discovery Early Programming	Introduce Programming (5-7 hours) -understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions -create and debug simple programs -use logical reasoning to predict the behaviour of simple programs Place instructions into the correct order (sequence) to make something work. (Activity 1) Use direction arrows to move an on-screen object (character/sprite) to achieve an objective. (Activity 2) Predict a route and sequence direction commands (algorithm) to achieve an objective. Correct the errors if necessary (debug). (Activity 3) Predict a route and sequence distance commands to program an on-screen object to achieve an objective. (Activity 3 challenge) Predict and sequence movement and pen commands to program the drawing of different 2D shapes. (Activity 4) Sequence code blocks, including movements and execute (start program) blocks to write a program to achieve an objective. (Activity 5)	Programming with Scratch Jr (3-4 Hours) Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. Create and debug simple programs. Use logical reasoning to predict the behaviour of simple programs. Program movements – activity 1 Program outputs for audio or text – activity 1 Find errors in a program – debug task in activity 1 Program Inputs (touch or clicking) – activity 2 and 3 Program selection/conditions (if one sprite hits another) – activity 3

Information Technology	Mouse and Keyboard Skills Digital Literacy and Numeracy Digital Art and Design Digital Photos and Video	Mouse and Keyboard Skills (4-6 Hours) Use technology purposefully to create, organise, store, manipulate and retrieve digital content. Move the mouse or trackpad and left click to select an object. (Activity 1 and 2) Drag and drop with mouse or trackpad to move objects around the screen. (Activity 3) Find letters or numbers on keyboard. (Activity 5) Begin touch typing with home row keys. (Activity 6) Text and Images (3-4 Hours) Use technology purposefully to create, organise, store, manipulate and retrieve digital content. Change the background colour of a page. (Activity 1) Add, resize and position images (pictures) on a page. (Activity 1 and 2) Type and position text on a page, if possible using capital letters and punctuation. (Activity 1 and 2) Label pictures with text. (Activity 2) Use word-banks for writing sentences about pictures. (Activity 3) Comic Creation (1-2 Hours) Y1 are doing an alternative to this but following the same skills. Use technology purposefully to create, organise, store, manipulate and retrieve digital content. Add, resize and organise colour or picture backgrounds. Add, resize, organise characters/objects to different panels. Add narration using text and direct speech using speech bubbles. Save comic with name and title. Add audio recordings (optional). Music Creation (1-2 Hours) 3D Design (1-2 Hours) Use technology purposefully to create, organise and manipulate digital content. Understand the advantages and disadvantages of making music on a computer. Understand that different instruments make their own sound and that instruments can be divided into groups Create a rhythm using a pattern of beats	Introduce Data Handling (2-3 Hours) Use technology purposefully to create, organise, store, manipulate and retrieve digital content. Understand what data is and collect it as a tally. Use software to label a pictogram and add data to each column. Edit a table with correct titles and numbers. Use software to create a bar chart/pie chart/line chart suitable for the data. Interpret a pictogram/bar chart/line chart. Ebook Creation (4 Hours) Use technology purposefully to create, organise, store, manipulate and retrieve digital content. Add a book cover with title, author, colour and image. Add multiple pages based on a theme. Add text on different pages. Add images on different pages to match the theme/text Add voice recordings to match the text and theme. Introduction to Animation (2-4 Hours) Use technology purposefully to create, organise, store, manipulate and retrieve digital content. Add a background and objects to a frame (including text) Copy/clone a frame and move objects to create an animation, including flipping objects. Create an animation with multiple objects moving simultaneously. Create screen-recording animation (optional, requires iPad). Create stop-motion animation with photos (optional, requires iPad). Create animated drawings of characters by cropping photos and adjusting points of movement. Typing (Could be taught for 10-20 minutes per week) IT30. Begin touch typing with home row. Digital Art (3-4 hours)

		Create digital sounds using patterns and shapes Create a simple melody using patterns and adjust tempo Change the colour and pattern of elements. Position and rotate objects on a design. Position objects in relation to each other. Resize, rotate, flip and arrange objects behind/in front of each other. Digital Art Use technology purposefully to create, organise and manipulate digital content. Change the colour of individual pixels to accurately re-create basic artwork. Make changes where required. Change the colour of individual pixels to accurately re-create detailed artwork. Use zoom controls to help fill small shapes.	Use technology purposefully to create, organise, store, manipulate and retrieve digital content. Use lines and fill tools to make interesting patterns and mimic an artist's style (Mondrian). Add a variety of shapes (outlines and fill) and label them with text. Re-create graphics using pixels with different colours. Recognise uses of ICT (1-2 hours) recognise common uses of information technology beyond school Recognise common uses of information technology beyond school; - Understand computers store and follow instructions. - Spot digital technology in school or at home (Pupil Activity 1 and 2) - Understand how different technology helps us. (Pupil Activity 3 and 4) - Find a piece of computer equipment amongst day to day objects and choose the correct definition. (Pupil Activity 4)
E-Safety	Early Year - E-Safety	E-Safety 5-7 year olds (1 Hour) use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies ES1. Keep personal information private. **(Activity 1)** ES2. Why do websites want personal information. **(Activity 2)** ES3. Identify when and where to go for help when concerned. **(Activity 3)**	Internet Research Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. Understand how a web-page displays information in different ways; text, images, videos and interactive elements. Use a web-page to answer questions using keywords E-safety 5-7 years old (1 Hour) (Resources 4-7) -use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies What are the dangers of sharing photos online? **Activity 5** People are not always who they say they are online. **Activity 6**

			Trusting information online. Activity 7 Using the Internet responsibly. **Activity 8** (Book Purchased…Ask Lucy) ES11. Being respectful. **Activity 9** (Book Purchased…Ask Lucy)

Linked to activities from ilearn2.co.uk	KS2			
	KS2 -1 design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts **KS2 -2** use sequence, selection, and repetition in programs; work with variables and various forms of input and output **KS2 -3** use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs **KS2 -4** understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration **KS2 -5** use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content **KS2 -6** select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and -content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information **KS2 -7** use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact			
	Year 3	Year 4	Year 5	Year 6
Computer Science	Programming in Scratch (4-6 Hours) Design, write and debug programs that accomplish specific goal, including simulating physical systems. Use sequence and repetition in programs; work with various forms of input. Design, write and debug programs that accomplish specific goals. (Including outputs) Use repetition in programs. (Activity 2) Work with various forms of inputs; keyboard, mouse and touch screen (Activity 3 and 4 below) + identify input/output devices (optional activity) Write programs that simulate physical systems (Activity 5)	Programming in Scratch (6-8 Hours) Design, write and debug programs that accomplish specific goals. Use sequence, selection, and repetition in programs; work with various forms of input and output. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. 1. Program inputs with loops, selection and sensing for interactions. 2. Work with variables and various forms of input and output. 3. Debug programs that accomplish goals. (correcting errors) 4. Use selection, data variables and operators. 5. Program a virtual robot using Scratch blocks. Inside a Computer 1 hour Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.	Programming in Scratch (5-7 Hours) Design, write and debug programs that accomplish specific goals; solve problems by decomposing them into smaller parts. Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. 1. Program inputs for control, selection (conditions) and sensing for interaction and data variables for scoring and a game timer. (Activity 1) 2. Program distance sensing and movement. (Activity 2) 3. Program Inputs, outputs, loops, selection, sensing and variables. (Activity 3) 4. Program list variables that chooses randomly. (Activity 4)	Programming in Scratch (7-9 hours) Design, write and debug programs that accomplish specific goals; solve problems by decomposing them into smaller parts. Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. 1. Program inputs, selection, loops and random variables (operators) for unpredictability. (Scratch Skiing Activity 1 and Scratch Space Activity 2) 2. Program inputs, selection (conditions), sensing, random variables, operators for direction and data variables for scoring. (Scratch Tennis Activity 3) 3. Use inputs, selection (conditions), loops, sensing, costume changes and broadcasts. (Scratch Paint Activity 4) 4. Work with multiple sprites to send broadcast messages between them. (Scratch Phone Simulator Activity 5)

		1. Understand what important parts of inside a computer or mobile device do to help with the performance (CPU, Fan, Hard Drive, RAM, Graphics Card). 2. Understand that memory is measured in bytes and gigabytes. 3. Use search filters on websites to find suitable information. (Activity 5)		Machine Learning and AI (1-2 hours) Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 1. Understand how computers use information to learn by solving new problems and following new instructions. 2. Understand and use examples of machine learning. 3. Understand how artificial intelligence is used to perform tasks often only performed by humans. 4. Discuss and show awareness of potential dangers of AI.
Information Technology	Digital Storyboard Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals. Add and edit backgrounds. Add and edit characters, including changing posture, expression and clothing. Add narration and speech bubbles, including formatting text. Duplicate objects to match scenes. Search for objects to use. Document Editing and Creation (1-2 Hours) Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals. Copy and paste text and images Find and replace words Format text for a purpose Edit images inside documents Add bullet points to make lists Experiment with keyboard shortcuts	Animation (5-7 Hours) Select, use and combine a variety of software on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals. 1. Create a stop-motion video by duplicating slides that include backgrounds and shapes. (Activity 1) 2. Create animation using transition and animation effects (morph, motion paths, pulse etc), including taking and editing a screenshot. (Activity 2-4) 3. Animate individual elements of objects. (Activity 5) 4. Create animated GIF files by animating pixels. (Activity 6) Internet Research (3-4 Hours) Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Appreciate how search results are selected and ranked and show awareness of different strategies for finding specific information (Teacher input)	App Design (4-6 Hours) Select, use and combine a variety of software on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals. Use the tools in different presentation software (PowerPoint, Keynote, Google Slides) to design an app about your school with: - Slide size and background colour - Text and Images (including transparent images) on different pages Ebook Creation (3-5 Hours) Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals. Add page colour and style Add, position and format text on different pages Add and position images Add audio, including hiding it behind an object. Add hyperlinks to text and images	Computers: Past, Present and Future. (2-3 Hours) Design and create digital content to accomplish goals. Use search technologies effectively and be discerning in evaluating digital content. 1. Show awareness of how computers and digital technology helps us today. 2. Understand how technology has changed over time and represent it as an interactive timeline. 3. Understand the impact (positive/negative) technological changes have on society. 4. Predict how technology will change in the future. Image Editing (3-4 Hours) Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals. 1. Adjust the colours, brightness and contrast to improve a photo. 2. Create a before and after slide in presentation software.

	Music Creation (3-4 Hours) select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and -content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information Create ascending and descending scales. Add chords evenly across the scales. Add arepeggios and melodies. Add a steady and even rhythm. Use sampled sounds to create an effective mix. Build beats, melody (tones) and effects. **Digital Art (4-6 Hours)** Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals. Use various lines and fill tools plus copy/paste and rotation to create pattern effects. (Project 1) Use shapes, fill, copy/paste, zoom and flip to create reflective symmetry effects. (Project 2) Use stamps, copy/paste, layers and multiple frames to create animated GIF computer game graphics. (Project 3) **Infographic (1-2 hours)** Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals. Understand what an infographic is and why we use them.	Understand the features of an Internet Browser (Teacher Input and unplugged task) Use search technologies (different websites) to find specific pieces of information (Activity 1 and 2) Reference the correct source of information (Activity 3) Be discerning in evaluating digital content. (Activity 4) Check the internet for fake news by cross-referencing facts (Activity 5) **3D Design (6-8 Hours)** Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals. 3D Village Pupil Activity Pack skills: 1. Understand 3D spacial awareness. 2. Add 3D shapes, resize, adjust height, duplicate and use the different perspective. 3. Re-create different types of buildings using 3D shapes. 4. Create roads/paths by adjusting the height of 3D shapes. 5. Add windows and door shapes. Lego Modelling Pupil Activity Pack skills: 1. Add, move, change colour and duplicate a brick. 2. Rotate bricks. 3. Use sloping bricks and special bricks for a purpose. 4. Change the transparency of bricks. **Video Editing** Select, use and combine a variety of software (including internet services) on a range of digital devices to design and	Search for shapes Lock and arrange shapes (extension task) **Music Creation (1-2 Hours)** Select, use and combine a variety of software (including internet services) on a range of digital devices to design content that accomplish given goals. Layer tracks using sounds and effects. (BeepBox activity) **Understand Computer Networks and the World Wide Web (2-3 hours)** Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration. 1. Understand Computer Networks, Internet, Cloud Computing and Bluetooth and how they help us. 2. What is email and how can we use it safely? 3. Understand how and why we collaborate online (including blogging). **Computer Operating Systems (1-2 hours)** Select, use and combine a variety of software on a range of digital devices to create content that accomplish given goals. 1. Understand the importance of an operating system and its key features. (Introduction activity) 2. Demonstrate important operating system skills (organising files etc), if possible, across multiple operating systems.(Tasks 1-4) **Typing (Could be taught for 10-20 minutes per week)** Select, use and combine a variety of software (including internet services) on a range of digital devices to design and	3. Take and crop a screenshot. 4. Add drawing and text layers. 5. Import new images as layers and resize them to fit. 6. Add colour elements to a black and white photo using layers and eraser tools. **Web Design (5-8 Hours)** Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals. 1. Create a static homepage. 2. Choose a suitable theme for your website. 3. Change the site identity to a suitable title, tagline and website icon. 4. Upload a suitable header and/or background image. 5. Adjust the website sidebar and add suitable widgets. 6. Add text and images to a page and edit them. 7. Add multiple pages and edit the navigation, including sub-menus. 8. Provide constructive feedback for your classmates' websites. **Data Detectives (1 hour +)** Collecting, analysing, evaluating and presenting data and information. 1. Use comprehension skills to find clues that match the column headings of a spreadsheet. 2. Use spreadsheet tools (filters and conditional formatting) to find the specific data to match the clues.

	Search for and add suitable graphic elements. Add and format suitable titles and text. Label an image using arrows. Branching Databases (1 hour) Collect, classify and present data. Add and label objects. Ask questions to sort (classify) objects correctly. Typing(Could be taught for 10-20 minutes per week) Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and - content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information Develop correct hand and finger position for touch typing.	create a range of programs, systems and content that accomplish given goals. Add scene images. Add scripted voiceover audio, adjust the volume and crop clips (including splitting a clip). Add more clips and use transition effects. Add titles. Use elements such as shapes. Add music background music and adjust the volume. Export a project. Typing (Could be taught for 10-20 minutes per week) Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and - content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information Develop correct hand and finger position for touch typing.	create a range of programs, systems and - content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information Develop correct hand and finger position for touch typing.	
E-Safety	Esafety (1-2 Hours) Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 1. Understand what to do if something upsets you online. **(Video 1)** 2. Understand why and how people can be nasty online. **(Video 1 + questions)** *- What should you do if you see something that upsets you online? (Block a person if you receive a message, tell and trusted adult (teacher/parent)* *- Why do people post nasty words online? (Because people hide their identify and think no-one will find out)* 3. Describe the term 'sharing online' and why we need to get permission to share	Esafety (1-2 Hours) Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. NB – They will have watched Video 2 and 3 before – but the skill is different (So they are looking at it from a different question). 5. Understand why we only talk to people we know in the real world, when online. **(Video 2 and 3 + questions)** *- Who should you talk to online? (Only people you know in the real world – talk about the difference between the real world and the online world)* 6. Understand why we should not always trust what we read online and how to check **(Video 2 and 3 + questions)**	Esafety (1-2 Hours) Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. **Video 1 Jigsaw Video** 1. Understand to keep personal information private. 2. Respect and protect against online bullies. 3. Understand the consequences of sharing photo/videos online. 4. Understand the term digital footprint. 5. Check online content is trustworthy.	Esafety (1-2 Hours) Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact **Video 2 Caught in the Web** 1. Understand to keep personal information private. 2. Respect and protect against online bullies. 3. Understand the consequences of sharing photo/videos online. 4. Understand the term ***digital footprint.***

	photos and videos of other people. **(Video 2 and 3)** 4. Understand why people pretend to be someone else online. **(Video 2 and 3 + questions)** *What was wrong about the children sharing the photo at the beginning of episode 2 and who would see that photo? (They did not have permission of the person in the photo and anyone could see that photo because they made it public)* *- Why do people pretend to be someone else online? (To say and do naughty things without people finding out who they really are)* Recommended Books * Read in KS1 too, but a nice opportunity for sticky learning. **The Troll Stinks** book introduces cyber-bullying to younger pupils and respecting people's privacy. We have included this book in our KS1 section too but can cover both.	*- Should we always trust what we read online? (This is also covered in the fake news activity Year 4 Internet Research Activity Pack.* 7. Understand the importance of being kind in the real world and also online. **(Activity 3 Kindness Kingdom)** 8. Understand the importance of using avatars and how to make them. **(Activity 4)** Recommended Books **But It's Just A Game** is story that helps teaches pupils how to enjoy video games responsibly without becoming addicted. It also gives advice on when and where to play video games. **There is a video on the E-safety pack at the bottom of the 3/4 section that complements this story.** This video below talks about all the different ways the Internet is exciting and helps us but it also covers screen time and the importance of playing outside etc.	6. Understand how, where and who can we report concerns we have to. **Trusting the Internet Video and Activity** **https://www.commonsense.org/education/digital-passport** **The first 3 games** – Which cover Password Protection Putting down your technology (Phone) Sharing Information Online.	7. Understand the pitfalls of in-app purchases. **In App Purchasing Video** 8. Understand how and why companies/people track our online behaviour and how we can prevent it. **(Data Defenders activity)** **https://www.commonsense.org/education/digital-passport** **Last 3 Games** – Which Cover Responding to cyberbullying scenarios How to choose effective keywords for searching online Learn about copyright, credit, and plagiarism