ICT

(Including computing)

ICT/Computing - Whole School Topic Overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	**Multimedia** Graphics	**Data** Pictograms	**Coding** Beebots	**Coding** Daisy Dino	**Multimedia** Book Creator	**Coding** Espresso
Year 2	**Multimedia** Photostory	**Coding** Move the Turtle	**Multimedia** Video	**Online** Email	**Coding** Daisy Dino	**Data** Branching Database
Year 3	**Coding** Logo	**Online** Blogging	**Online** Internet Research	**Coding** Hopscotch	**Multimedia** EBooks	**Data** Spreadsheets
Year 4	**Multimedia** Animation	**Data** Branching Database	**Coding** Scratch	**Online** **Emails**	**Multimedia** Presentation	**Coding** Kodu
Year 5	**Multimedia** Sound Recording	**Coding** Scratch	**Online** Internet Research	**Coding** Scratch	**Multimedia** Ebook	**Data** Spreadsheets
Year 6	**Multimedia** Animation	**Data** Spreadsheets	**Multimedia** Imovie	**Coding** Scratch	**Online** Blogging	**Multimedia** Presentation

It is important that we understand how ICT skills progress throughout the primary phase, taking into account children's use of technology both in and beyond school.

The application of ICT skills across the wider curriculum provides opportunities for learners to use ICT to support communication and collaboration, enquiry, creative and critical thinking. The aim is for children to become proficient, independent and discerning users of technology who recognise when and where ICT can enhance their learning and employ appropriate strategies to stay safe.

From September 2019 we are following Rising Stars 'Switched on' scheme

SWITCHED ON Computing KS1 and KS2 units

Suggestions of apps also provided for every unit

Unit	Title	Unit summary	Computing Programme of Study focus	Suggested software/hardware
1.1	We are treasure hunters	Using programmable toys	Programming	Programmable toys/Bee-Bot and Blue-Bot apps
1.2	We are TV chefs	Filming the steps of a recipe	Computational thinking	Paint/Fresh Paint/Movie Maker/iMovie
1.3	We are painters	Illustrating an eBook	Creativity	Tux Paint/Paint/2Paint A Picture/Fresh Paint/IWB software/ Word
1.4	We are collectors	Finding images using the web	Computer networks	Web browser/PowerPoint/IWB software/Explain Everything
1.5	We are storytellers	Producing a talking book	Communication/Collaboration	PowerPoint/2Create A Story/IWB software/Explain Everything
1.6	We are celebrating	Creating a card electronically	Productivity	PowerPoint/Word/Clicker 7/Fresh Paint/2Paint A Picture
2.1	We are astronauts	Programming on screen	Programming	Scratch/Kodu/Scratch Jnr/Pyonkee
2.2	We are games testers	Exploring how computer games work	Computational thinking	Scratch/Screencast-O-Matic/Pyonkee
2.3	We are photographers	Taking, selecting and editing digital images	Creativity	Picasa/Pixlr.com/Snapseed
2.4	We are researchers	Researching a topic	Computer networks	FreeMind/web browser/PowerPoint
2.5	We are detectives	Communicating clues	Communication/Collaboration	Email system/Excel/Google Sheets
2.6	We are zoologists	Recording bug hunt data	Productivity	Excel/Google Sheets/Picasa/Photo Gallery/Snapseed/ Google Maps/Google Earth
3.1	We are programmers	Programming an animation	Programming	Scratch/Scratch Jr/Pyonkee
3.2	We are bug fixers	Finding and correcting bugs in programs	Computational thinking	Scratch/Snap!/Pyonkee
3.3	We are presenters	Videoing performance	Creativity	Movie Maker/iMovie
3.4	We are vloggers	Making and sharing a short screencast presentation	Computer networks	Google/PowerPoint/QuickTime Player/screencast-o-matic/ Explain Everything/Adobe Voice
3.5	We are communicators	Communicating safely on the internet	Communication/Collaboration	Email system/Skype/Google Hangouts/PowerPoint/ Google Slides
3.6	We are opinion pollsters	Collecting and analysing data	Productivity	Google Forms/j2Data/Google Sheets and Google Slides/ InspireData/Excel/Word
4.1	We are software developers	Developing a simple educational game	Programming	Scratch/Snap!/Pyonkee
4.2	We are toy designers	Prototyping an interactive toy	Computational thinking	Scratch/Snap!/Pyonkee
4.3	We are musicians	Producing digital music	Creativity	Isle of Tune/Audacity/LMMS/GarageBand/MuseScore
4.4	We are HTML editors	Editing and writing HTML	Computer networks	Firefox/Chrome/Brackets
4.5	We are co-authors	Producing a wiki	Communication/Collaboration	Learning platform/MediaWiki/Google Sites
4.6	We are meteorologists	Presenting the weather	Productivity	Excel/Google Sheets/PowerPoint/IWB software
5.1	We are game developers	Developing an interactive game	Programming	Scratch/Snap!/Pyonkee/Kodu
5.2	We are cryptographers	Cracking codes	Computational thinking	Scratch/Snap!/Pyonkee/The Black Chamber
5.3	We are artists	Fusing geometry and art	Creativity	Inkscape/Adobe Illustrator/CorelDRAW/Scratch/Scribble/ TurtleArt/Terragen
5.4	We are web developers	Creating a web page about cyber safety	Computer networks	Google/Google Sites/learning platform/WordPress/ Adobe Slate
5.5	We are bloggers	Sharing experiences and opinions	Communication/Collaboration	WordPress/learning platform/GIMP/Audacity/Movie Maker
5.6	We are architects	Creating a virtual space	Productivity	Trimble SketchUp/Screencast-O-Matic
6.1	We are adventure gamers	Making a text-based adventure game	Programming	Python (using the IDLE editor)/Trinket.io/Pythonista
6.2	We are computational thinkers	Mastering algorithms for search-ing,sorting and mathematics	Computational thinking	'Unplugged' resources/Scratch/Snap!/Pyonkee
6.3	We are advertisers	Creating a short television advert	Creativity	MovieMaker/iMovie
6.4	We are network engineer	Exploring computer networks including the internet	Computer networks	command prompt/Scratch/open visual traceroute
6.5	We are travel writers	Using media and mapping to docu-ment a trip	Productivity	Google Maps/Google Earth/Pixlr/Snapseed/MovieMaker/ iMovie/Audacity/Garage Band/TrackRec
6.6	We are publishers	Creating a year book	Communication/collaboration	Publisher/Scribus/iBook Author/Pages/Book Creator/ Google Drive

Progression of Skills in Computing/ICT

Year	Computer Science	Information Technology	Digital Literacy
Year 1	Understand what algorithms are Create simple programs	Use technology purposefully to create digital content Use technology purposefully to store digital content Use technology purposefully to retrieve digital content	Use technology safely Keep personal information private Recognise common uses of information technology beyond school
Year 2	Understand that algorithms are implemented as programs on digital devices Understand that programs execute by following precise and unambiguous instructions Debug simple programs Use logical reasoning to predict the behaviour of simple programs	Use technology purposefully to organise digital content Use technology purposefully to manipulate digital content	Use technology respectfully Identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies
Year 3 / 4	Write programs that accomplish specific goals Use sequence in programs Work with various forms of input Work with various forms of output	Use search technologies effectively Use a variety of software to accomplish given goals Collect information Design and create content Present information	Use technology responsibly Identify a range of ways to report concerns about contact
Year 5	Design programs that accomplish specific goals Design and create programs Debug programs that accomplish specific goals Use repetition in programs Control or simulate physical systems Use logical reasoning to detect and correct errors in programs Understand how computer networks can provide multiple services, such as the World Wide Web Appreciate how search results are selected	Select a variety of software to accomplish given goals Select, use and combine internet services Analyse information Evaluate information Collect data Present data	Understand the opportunities computer networks offer for communication Identify a range of ways to report concerns about content Recognise acceptable/unacceptable behaviour
Year 6	Solve problems by decomposing them into smaller parts Use selection in programs Work with variables Use logical reasoning to explain how some simple algorithms work Use logical reasoning to detect and correct errors in algorithms Understand computer networks, including the internet Appreciate how search results are ranked	Combine a variety of software to accomplish given goals Select, use and combine software on a range of digital devices Analyse data Evaluate data Design and create systems	Understand the opportunities computer networks offer for collaboration Be discerning in evaluating digital content

Scheme of Work

YEAR 1

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	E Safety
Focus	**Graphics**	**Data**	**Coding**	**Coding**	**Text**	**Coding**	
Outcome	**Create a poster**	**Pictogram**	**Programming**	**Programming**	**Book**	**Programming**	
Hardware / Software	**Laptop / Textease** **Ipad / PicCollage**	**Laptop / 2Simple**	**Beebots**	**Ipad / Daisy Dino**	**Ipad / Book Creator**	**Laptop / Espresso Year 1 Units**	
Key Skills	Use ICT to generate ideas for their work. Use various tools including brushes, pens, lines, fill, spray and stamps. Use save, retrieve, amend and print.	Know that images give information. Say what a pictogram is showing them. Enter information into a template on a computer to make a graph. Put data into a program (pictogram). Sort objects and pictures in lists or simple tables.	Give and follow instructions, which include straight and turning commands, one at a time. Explore outcomes when instructions are given in sequence. Give a simple sequence of instructions. Work out why my programs does not work.	Discuss/explore what will happen when instructions are given in a sequence. Give a sequence of instructions to complete a simple task. Instructions use both movement commands and additional commands. Predict what will happen in a program based on what I know.	Use the spacebar, back space, enter, shift and arrow keys. Start to use two hands when typing. Word process short texts, rather than copying up written work. Explain what I have done and how I did it.	Understand forwards, backwards, up and down. Put together 2 instructions to control a programmable toy. Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.	Make decisions about whether or not statements or images found on the internet are likely to be true. Identify different devices that can go on the internet, and separate those that do not. Identify what things count as personal information. Identify when inappropriate content is accessed and act appropriately. Know how and why ICT is used in the home.

YEAR 2

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	E Safety
Focus	**Multimedia**	**Coding**	**Multimedia**	**Online**	**Coding**	**Coding**	
Outcome	**Presentation**	**Programming**	**Video**	**Email**	**Programming**	**Programming**	
Hardware / Software	**Laptop / Photostory**	**Laptop / Textease**	**Ipad / Movie Maker**	**Laptop / Email**	**Ipad / Daisy Dino**	**Laptop / Espresso Year 2 Units**	
Key Skills	Use sound recorders, at and away from, a computer to capture and playback sound. Use software to record music and sounds. Change sounds they have recorded. Save, retrieve and edit sounds.	Generate a sequence of instructions including 'right angle' turns. Create a sequence of instructions to generate simple geometric shapes (oblong /square). Discuss how to improve/change their sequence of commands. Know that a program will only work with detailed instructions. Create a program. Work out why my program does not work. Predict what will happen in a program based on what I know.	Capture video. Discuss which videos to keep and why. Arrange clips to make a short film that conveys meaning. Add simple titles and credits. Select text and make simple changes including bold, italic and underlined.	Recognise an email address. Find the @ key on a keyboard. Contribute to a class email. Open and select to reply to an email as a class.	Create and debug simple programs. Use logical reasoning to predict the behaviour of simple programs. Use the 'repeat' (loop) and 'when' (conditional statement) command within a series of instructions. Plan a short 'story' for a sprite and write the commands for this. Edit/refine a sequence of commands.	Place objects and pictures in a list or a simple table. Make a simple Y/N tree diagram to sort information. Create and search a branching database. .	Identify obviously false information in a variety of contexts. Recognise that a variety of devices (XBox, PSP etc as well as computers and phones) connect users with other people. Identify personal information that should be kept private. Consider other people's feelings on the internet. Create and use top safety tips.

YEAR 3

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	E Safety
Focus	**Coding**	**Online**	**Online**	**Coding**	**Multimedia**	**Data**	
Outcome	**Draw a shape**	**Personal reflection on topic**	**Internet Research**	**Hopscotch**	**EBooks**	**Survey and analysis**	
Hardware / Software	**Laptop / Textease**	**Laptop / text creator**	**Ipad / Websites**	**Programming**	**Ipad / Book Creator**	**Laptop / Excel (simple table)**	
Key Skills	Write a simple program in Logo to produce a line drawing. Use more advanced Logo programming, including pen up, pen down etc. Write a program to reproduce a defined problem, e.g. geometric shape/pattern.	Review the purpose of blogging. Understand that their class blog can be updated from a range of devices. Comment on their class blog. Write a blog based on topic and upload. Understand importance of respecting the opinions and views of others.	Type in a URL to find a website. Add websites to favorites. Use a search engine to find a range of media, e.g. images, text. Think of search terms to use linked to questions they are finding the answers for. Talk about the reliability of information on the internet, e.g. the difference between fact and opinion (link to E-Safety).	Use a variety of inputs Use the 'repeat' (loop) command within a series of instructions. Use the 'if… then' (conditional statement) command within a series of instructions 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.	Create a new eBook with a front cover and add or remove pages. Combine text and images within each page and embed sound clips. Add information about the author and title for publishing. Get quicker at typing using both hands. Use different fonts sizes, colours and effects to communicate meaning. Align text left, right and centre.	Choose information to put into a data table. Recognise which information is suitable for their topic. Design a questionnaire to collect information. Sort and organise information to use in other ways. Recognise the grid layout of a spread sheet program. Use the terms cells, rows, and columns. Know when it is not appropriate to use a computer. Share and exchange my ideas with others'.	Question the "validity" of what they see on the internet. Use a browser address bar not just search box and shortcuts. Think before sending and suggest consequences of sending/posting. Recognise online behaviours that would be unfair.

YEAR 4

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	E Safety
Focus	**Multimedia**	**Data**	**Coding**	**Online**	**Multimedia**	**Coding**	
Outcome	**Animation**	**Branching Database**	**Programming**	**Emails**	**Video**	**Programming**	
Hardware / Software	**Ipad / I can animate**	**Laptop / 2Simple**	**Laptop / Scratch**	**Laptop / Email**	**Ipad / Imovie**	**Kodu**	
Key Skills	Plan what they would like to happen in their animation. Take a series of pictures to form an animation. Move items within their animation to create movement on playback. Edit/improve their animation.	Create and search a branching database. Sort and organise information to use in other ways. Create a database from information I have selected.	Navigate the Scratch programming environment. Create a background and sprite for a game. Add inputs to control their sprite. Use conditional statements (if… then) within their game. Solve a problem by breaking it down into smaller parts. Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.	Log in to an email, open emails, create and send replies. Attach files to an email. Download and save files from an email. Email more than one person and participate in group emails by 'replying to all'. Use CTRL C to copy and CTRL V to paste Highlight text to copy and paste. Use ICT to capture still images.	Capture video for a purpose. Discuss the quality of videos and chose which to keep and which to re-shoot. Trim and arrange clips to convey meaning. Add titles, credits, slide transitions, special effects and talk about the effect these have on the audience.	Unit 2: Kodu *Single player - free to navigate and avoid danger* Create a 3D digital world for a game with land, water and scenery. Add a sprite to their world. Program their sprite to navigate their 3D world with an input. Use conditional statements ('if…then') to create dangerous items in their world. Write a program for a given task. Correct a program which does not work. Use what I already know to explain algorithms.	Recognise social networking sites and social networking features built into other things (such as online games and handheld games consoles). Make judgments in order to stay safe, whilst communicating with others online. Tell an adult if anything worries them online. Identify dangers when presented with scenarios, social networking profiles, etc. Articulate examples of 'good' and 'bad' behaviour online.

YEAR 5

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	E Safety
Focus	**Multimedia**	**Coding**	**Online**	**Coding**	**Multimedia**	**Data**	
Outcome	**Sound Recording**	**Programming**	**Internet Research**	**Programming**	**Ebook**	**Spreadsheets**	
Hardware / Software	**Laptop / Audacity**	**Laptop / Scratch**	**Ipad / Websites**	**Laptop / Scratch**	**Laptop / Powerpoint**	**Laptop / Excel**	
Key Skills	Collect audio from a variety of sources including own recordings and internet clips. Create a multi-track recording using effects. Edit and refine their work to improve outcomes.	Unit 1: Scratch *The Ghostly woods.* Use external triggers and infinite loops to control sprites. Create and edit variables. Use conditional statements. Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. Use logical reasoning to explain how some simple algorithms work / detect and correct errors in algorithms.	Use advanced search functions in Google, e.g. quotations. Understand websites such as Wikipedia are made by users (link to E-Safety) Use strategies to check the reliability of information, e.g. cross checking with books. Use their knowledge of domain names to aid their judgment of the validity of websites.	Unit 2: Scratch Robot Wars. Use variables to configure external outputs within Scratch. Use external inputs to control external outputs. Use conditional statements and infinite loops.	Create a new ebook with a front cover and add/remove pages/sub pages. Produce a multimedia ebook combining video, pictures, text and audio. Attach author data for publishing and publish book.	Create data collection forms and enter data from these accurately. Know how to check for and spot inaccurate data. Know which formulas to use when I want to change my spreadsheet model. Make graphs from the calculations on my spreadsheet.	Judge what sort of privacy settings might be relevant to reducing different risks. Judge when to answer a question online and when not to. Be a good online citizen and friend, not a ‘digital bystander’. Articulate what constitutes good behaviour online. Find and cite the web address for any information or resource found online. Use different sources to double check information found.

YEAR 6

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	E Safety
Focus	**Multimedia**	**Data**	**Multimedia**	**Coding**	**Online**	**Coding**	
Outcome	**Animation**	**Spreadsheets**	**Video**		**Blogging**	**Presentation**	
Hardware / Software	**Ipad/ I can Animate**	**Laptop / Excel**	**Ipad / Imovie**	**Laptop / Scratch**	**Ipad / Website**	**Laptop / Python**	
Key Skills	Plan a multi-scene animation including characters, scenes, camera angles and special effects. Use stop-go animation software with an external camera to shoot the animation frames. Adjust the number of photographs taken and the playback rate to improve the quality of the animation. Publish their animation and use a movie editing package to edit/refine and add titles.	Create data collection forms and enter data from these accurately. Know how to check for and spot inaccurate data. Know which formulas to use when I want to change my spreadsheet model. Make graphs from the calculations on my spreadsheet. Sort and filter information. Understand that changing the numerical data effects a calculation.	Storyboard and capture videos for a purpose. Plan for the use of special effects/transitions to enhance their video. Transfer footage to iMacs for more advanced editing. Trim, arrange and edit audio levels of video to improve the quality of their outcome. Add titles, credits, transitions, special effects. Export their video in different formats for different purposes.	Temple Run Design their own game including sprites, backgrounds, scoring and/or timers. Their game uses conditional statements, loops, variables and broadcast messages. Their game finishes if the player wins or loses and the player knows if they have won or lost. Evaluate the effectiveness of their game and debug if required.	Blogging (kidblog.org) Register for a blog: selecting a url and navigate to their blog once it is created. Alter the theme and appearance of their blog, adding background images etc. Create a new post, save it as a draft and publish it. Embed photos, hyperlinks and videos into posts. Reorganise posts and remove posts they no longer want. Like/follow other blogs and build up their blog content over the year.	Unit 1: Introduction to Python Navigate Python programming environment Idle . Declare variables. Use a range of statements. Use selection algorithms. Use comparison and numerical operators.	Find *report* and *flag* buttons in commonly used sites and name sources of help (Childline, Cybermentors, etc) 'click-CEOP' button and explain to parents what it is for. Discuss scenarios involving online risk. State the source of information found on the internet. Act as a role model for younger pupils, including promoting *Sid's Top Tips*.