Computing Yearly Overview -Bowerham Primary and Nursery School

Computer Science Computational Thinking Information Technology Digital Literacy	'Implicit Skills'. These should be taught across a range of subjects, embedded into learning and across a range of digital devices. Saving documents and pieces of work, how to use Showbie and MS Teams will also be taught so that resources and programmes in school are used effectively and efficiently. E safety (Digital Literacy) should be taught implicitly as well as during Internet Safety week. Other software, apps and websites may need new logins setting up, please make a record of these.

National Curriculum	YEAR	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
KS1 **Pupils should be taught to:** • **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**	1	**Key board and mouse skills** Duration of unit 4-6 hours Skills: Move and left click to select Click and drag to move items Find letters on a keyboard and begin touch typing https://www.ilearn2.co.uk/eyfsyear-1-mouse-and-keyboard-skills.html **Information Technology** *Implicit Year 1 skills including but not limited to locating, opening, closing, files and folders, programs or apps. Effective use of devices. Use of touch screen (swipe, drag and drop, pinch to enlarge etc.)* *Use of keyboard and mouse, identification of purpose of different keys (space, return, delete, num lock etc.)* *Basic MS Office skills* *How to use the internet safely and responsibly.* *Effective use of remote learning software Showbie and MS Teams when appropriate.*	**Introducing programing** Duration of unit 4-6 hours Skills: Understand sequence and algorithms Sequence instructions (commands) to achieve and objective Predict, write, execute and debug a simple program https://www.ilearn2.co.uk/year-1-programming.html other linked software/websites/apps: https://www.bt.com/codeacake/sequencing https://studio.code.org/users/sign_in (requires sign in) **Computer Science Computational Thinking** *Implicit Year 1 skills including but not limited to locating, opening, closing, files and folders, programs or apps. Effective use of devices. Use of touch screen (swipe, drag and drop, pinch to enlarge etc.)* *Use of keyboard and mouse, identification of purpose of different keys (space, return, delete, num lock etc.)* *Basic MS Office skills*	**Text & Images** Duration of unit 3-4 hours Skills: Add, move and resize images then add text and adjust size and placement Add, resize and place images on a page then add and position text to label and describe images Use word banks to write sentences about images https://www.ilearn2.co.uk/year-1-text--images.html **Information Technology** *Implicit Year 1 skills including but not limited to locating, opening, closing, files and folders, programs or apps. Effective use of devices. Use of touch screen (swipe, drag and drop, pinch to enlarge etc.)* *Use of keyboard and mouse, identification of purpose of different keys (space, return, delete, num lock etc.)* *Basic MS Office skills* *How to use the internet safely and responsibly.* *Effective use of remote learning software Showbie and MS Teams when appropriate.*	**Comic creation** Duration of unit 1-2 hours utilising skills from text & images unit Skills: Add a suitable background to panels Use different controls to move around a comic and make space, e.g. zoom, minimise menus Add, resize, move and rotate objects including characters Add and resize text boxes and speech bubbles https://www.ilearn2.co.uk/year-1-comic-creation.html other linked software/websites/apps: http://biomediaproject.com/bmp/files/LEGO/gms/online/City/ComicBuilder/FramePage.html cross curricular for literacy or presenting topic or science information **Information Technology** *Implicit Year 1 skills including but not limited to locating, opening, closing, files and folders, programs or apps. Effective use of devices. Use of touch screen (swipe, drag and drop, pinch to enlarge etc.)*	**Design** Duration of unit 1-2 hours Skills: Change the colour and pattern of elements Position and rotate objects on a design Position objects in relation to each other https://www.ilearn2.co.uk/year13ddesign.html **Information Technology** **Using KidRex – Research animals** **Digital Literacy** *Implicit Year 1 skills including but not limited to locating, opening, closing, files and folders, programs or apps. Effective use of devices. Use of touch screen (swipe, drag and drop, pinch to enlarge etc.)* *Use of keyboard and mouse, identification of purpose of different keys (space, return, delete, num lock etc.)* *Basic MS Office skills* *How to use the internet safely and responsibly.* *Effective use of remote learning software Showbie and MS Teams when appropriate.*	**Music Creation** Duration of unit 1-2 hours Skills: Create a rhythm using a pattern of beats Create digital sounds using patterns and shapes Create a simple melody Using patterns and adjust tempo https://www.ilearn2.co.uk/4400.html cross curricular music links but not to replace items in the music curriculum **Information Technology** *Implicit Year 1 skills including but not limited to locating, opening, closing, files and folders, programs or apps. Effective use of devices. Use of touch screen (swipe, drag and drop, pinch to enlarge etc.)* *Use of keyboard and mouse, identification of purpose of different keys (space, return, delete, num lock etc.)* *Basic MS Office skills* *How to use the internet safely and responsibly.* *Effective use of remote learning software Showbie and MS Teams when appropriate.*

			How to use the internet safely and responsibly. *Effective use of remote learning software Showbie and MS Teams when appropriate.*		*Use of keyboard and mouse, identification of purpose of different keys (space, return, delete, num lock etc.)* *Basic MS Office skills* *How to use the internet safely and responsibly.* *Effective use of remote learning software Showbie and MS Teams when appropriate.*	
	2	**Digital Art** Duration of unit 2-3 hours Skills: Use lines and fill tools to create interesting patterns Add a variety of shapes (outline and fill) and label them with text https://www.ilearn2.co.uk/year-2-digital-art.html other linked software/websites/apps: https://www.pixilart.com/ <mark>Information Technology</mark> *Implicit Year 2 skills as year 1 above*	**Introduction to Animation** Duration of unit 3-4 hours Skills: Add a background and object to a frame Copy/clone a frame and move objects to create an animation Create screen recording animation (requires iPad) Create stop motion animation with photos (requires iPad) https://www.ilearn2.co.uk/year-2-animation.html other linked software/websites/apps: https://www.j2e.com/jit5#animate https://www.abcya.com/games/animate https://apps.apple.com/gb/app/i-can-animate-lite/id950631539 cross curricular opportunities for story telling or sharing/presenting information <mark>Information Technology</mark> *Implicit Year 2 skills as year 1 above*	**Introducing Data Handling & Typing** Duration of unit 3-4 hours Skills: Understand what data is and collect it as a tally Label a pictogram and add data to each column Edit a table with correct titles and numbers Create a bar chart/pie chart/line chart suitable for the data Explain what a pictogram/bar chart/line chart shows https://www.ilearn2.co.uk/year-2-data-handling.html other linked software/websites/apps: https://www.j2e.com/jit5#chart https://www.j2e.com/jit5#pictogram https://www.j2e.com/jit5#chart Cross curricular opportunities for presenting data in maths or topic <mark>Information Technology</mark> **Typing** Duration of unit ongoing (suggest weekly 20 mins as a skill within other subjects or as a explicit skill)	**E-book Creation** Duration of unit 4 hours Skills: 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 them/text Add voice recordings to match the text/theme https://www.ilearn2.co.uk/eboookcreationks1.html other linked software/websites/apps: https://www.writereader.com/en cross curricular opportunities for presenting information in topic or science, story telling in literacy, RE <mark>Information Technology</mark> *Implicit Year 2 skills as year 1 above*	**Develop Programming & Programming with Scratch Jr** Skills: Create and debug simple programs Use logical reasoning to predict the behaviour of simple programs Simplify a program by using a loop https://www.ilearn2.co.uk/year-2-programming.html other linked software/websites/apps: https://apps.apple.com/us/app/lightbot-code-hour/id873943739https://studio.code.org/users/sign_in (requires sign in) Scratch Jr Duration of unit 3-4 hours Skills: Program movements Program outputs for audio or text Find errors in a program (debug) Program inputs (touching or clicking) Program conditions (if statements) https://www.ilearn2.co.uk/year-2-scratch-jr.html other linked software/websites/apps: https://apps.apple.com/us/app/scratchjr/id895485086?ls=1 <mark>Computer Science Computational Thinking</mark>	**Recognise uses of IT** Duration of unit 1-2 hours Skills: Understand what makes a computer a computer Spot digital technology in school Recognise common use of information technology in school and beyond https://www.ilearn2.co.uk/year-2-uses-of-it.html <mark>Digital Literacy</mark> *Implicit Year 2 skills as year 1 above*

				Touch typing https://www.ilearn2.co.uk/touch-typing.html other linked software/websites: https://www.bbc.co.uk/bitesize/topics/zf2f9j6/articles/z3c6tfr **Information Technology** *Implicit Year 2 skills as year 1 above*		*Implicit Year 2 skills as year 1 above*	
KS2 **Pupils should be taught to:** • **design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; 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** • **use search technologies effectively, appreciate how results are selected and ranked** • **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**	**3**	**Programming in Scratch** Duration of unit 4-6 hours Skills: Design, write and debug programs that accomplish specific goals (including outputs) Use repetition in programs Work with various forms of inputs: keyboard, mouse and touch screen Write programs to simulate physical systems https://www.ilearn2.co.uk/y3scratch.html other linked software/websites/apps: https://scratch.mit.edu/ **Computer Science Computational Thinking** **Game Creation (non coding)** Duration of unit 4-5 hours Skills: Design, add and animate backgrounds Design and add characters/objects Design and add platforms Create an app store listing with icon, effective description and screenshots	**Music Creation** Duration of unit 3-4 hours Skills: Create ascending and descending scales, add chords evenly across the scales Add arpeggios and melodies Add a steady and even rhythm Use sampled sounds to create an effective mix Build beats, melody (tones) and effects https://www.ilearn2.co.uk/year3music.html other linked software/websites/apps: https://musiclab.chromeexperiments.com/Song-Maker/ https://www.incredibox.com/demo/v4 http://www.isleoftune.com/ supplements music curriculum **Information Technology** *Implicit skills continue from KS1.* *Additionally: organisational skills managing folder and documents.*	**Comic Creation** Duration of unit 3-4 hours Skills: Add, resize and organise colour or picture backgrounds Add, resize, organise characters/objects to different panels Add narration using text and direct speech using bubbles https://www.ilearn2.co.uk/comiccreationteacherfree.html other linked software/websites/apps: https://www.makebeliefscomix.com/Comix/ **Information Technology** **Programming in Kodu** Duration of unit 3-5 hours Skills: Create a 3D place using various design tools Write a program to control using keyboard inputs Write a program with conditions Write a program with variables https://www.ilearn2.co.uk/year-3-kodu.html	**E Safety** E safety day plus use technology safely, respectfully & responsibly; recognise acceptable/unacceptable behaviour; identify ways to report concerns about content and contact https://www.ilearn2.co.uk/e-safety---key-stage-2.html **Digital Literacy** *Implicit skills continue from KS1.* *Additionally: organisational skills managing folder and documents.* *Effective, efficient and safe internet searching skills – improving and narrowing searches* *Interrogation of search results for reliability* *Enhanced keyboard skills to include CTRL + shortcuts* *Increased MS Office fluency* *Increased MS Teams Showbie familiarity*	**Document editing and Creation** Duration of unit 1-2 hours Skills: Copy and paste text and images Find and replace words Format text for a purpose https://www.ilearn2.co.uk/document.html other linked software/website/apps: Microsoft Word **Information Technology** **Digital Art** Duration of unit 4-6 hours Skills: Use various lines and fill tools plus copy/paste and rotation to create pattern effects Use shapes, fill, copy/paste zoom and flip to create reflective symmetry effects Use stamps, copy/paste, layers and multiple frames to create animated GIF computer graphics https://www.ilearn2.co.uk/year3digitalart.html other linked software/website/apps: https://www.pixilart.com/	**Typing** Develop correct hand and finger positions for touch typing https://www.ilearn2.co.uk/touch-typing.html **Digital Literacy** *Implicit skills continue from KS1.* *Additionally: organisational skills managing folder and documents.* *Effective, efficient and safe internet searching skills – improving and narrowing searches* *Interrogation of search results for reliability* *Enhanced keyboard skills to include CTRL + shortcuts* *Increased MS Office fluency* *Increased MS Teams Showbie familiarity*

presenting data and information (highlighted green) • **be discerning in evaluating digital content** • **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** • **use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.**		https://www.ilearn2.co.uk/year-3-game-creation.html other linked software/websites/apps: https://apps.apple.com/us/app/sketch-nation-create/id908470464 **Information Technology** (highlighted green) *Implicit skills continue from KS1.* *Additionally: organisational skills managing folder and documents.* *Effective, efficient and safe internet searching skills – improving and narrowing searches* *Interrogation of search results for reliability* *Enhanced keyboard skills to include CTRL + shortcuts* *Increased MS Office fluency* *Increased MS Teams Showbie familiarity*	*Effective, efficient and safe internet searching skills – improving and narrowing searches* *Interrogation of search results for reliability* *Enhanced keyboard skills to include CTRL + shortcuts* *Increased MS Office fluency* *Increased MS Teams Showbie familiarity*	other linked software/website/apps: http://www.microsoft.com/en-us/download/details.aspx?id=10056 **Computer Science Computational Thinking** (highlighted yellow) *Implicit skills continue from KS1.* *Additionally: organisational skills managing folder and documents.* *Effective, efficient and safe internet searching skills – improving and narrowing searches* *Interrogation of search results for reliability* *Enhanced keyboard skills to include CTRL + shortcuts* *Increased MS Office fluency* *Increased MS Teams Showbie familiarity*		Additional Microsoft Paint Project https://www.ilearn2.co.uk/paint.html Additional Google Drawing Project https://www.ilearn2.co.uk/googledrawstudents.html **Information Technology** (highlighted green) *Implicit skills continue from KS1.* *Additionally: organisational skills managing folder and documents.* *Effective, efficient and safe internet searching skills – improving and narrowing searches* *Interrogation of search results for reliability* *Enhanced keyboard skills to include CTRL + shortcuts* *Increased MS Office fluency* *Increased MS Teams Showbie familiarity*	
	4	**E book creation** Duration of unit 3-5 hours Skills: Add page colour and style, then position and format text Add and position images from camera/internet Add audio including hiding it behind an object Add hyperlinks to text and images Add and format shapes Use hyperlinks for navigation https://www.ilearn2.co.uk/year-4-ebook-creation.html other linked software/websites/apps: https://webqr.com/ **Information Technology** (highlighted green)		**3D design** Duration of unit 3-5 hours Skills: Using CAD (computer aided design) software to build a 3D town/village Understand 3D special awareness Add 3D shapes, resize, adjust height, duplicate and use the different perspective Recreating different types of buildings using 3D shapes Create roads/paths by adjusting the height of 3D shapes Add windows and door shapes https://www.ilearn2.co.uk/3ddesignteacher.html other linked software/websites/apps:	**Data Handling** Duration of unit 3-4 hours Skills: Find and present data as a table and suitable chart Give chart a suitable title and label axis correctly Select and use non adjacent cells and resize multiple cell widths https://www.ilearn2.co.uk/year4datahandling.html other linked software/websites/apps: Microsoft excel Children need to complete task one of this activity https://www.ilearn2.co.uk/year-4-research.html first	**Video Editing** Duration of unit 2-3 hours Skills: Add clips then order and resize them Add titles to clips and change themes Add voiceovers and music Add filters to clips Export a project https://www.ilearn2.co.uk/imovieteachers.html Other linked software/webistes/apps: iMovie for iPads https://spark.adobe.com/make/video-maker/ login setup required additional projects Green screen	**E book creation** Duration of unit 3-5 hours Skills: Add page colour and style, then position and format text Add and position images from camera/internet Add audio including hiding it behind an object Add hyperlinks to text and images Add and format shapes Use hyperlinks for navigation https://www.ilearn2.co.uk/year-4-ebook-creation.html other linked software/websites/apps: https://webqr.com/

	Implicit skills as year 4 above		https://www.tinkercad.com/ Related projects Castle https://www.ilearn2.co.uk/castlesknightspreview-863287.html 3D solar system https://www.ilearn2.co.uk/science.html ==Information Technology== *Implicit skills as year 4 above*	http://www.uksafari.com/creepycrawlies.htm ==Information Technology== *Implicit skills as year 4 above*	https://www.ilearn2.co.uk/greenscreenstudents.html other linked software/websites/apps: Do ink app https://apps.apple.com/gb/app/green-screen-by-do-ink/id730091131 ==Information Technology== *Implicit skills as year 4 above*	

| 5 | E Book Creation

Duration of unit 3-5 hours

Skills:
Add page colour and style then position and format text
Add and position images from camera/internet
Add audio including hiding it behind an object
Add hyperlinks to text and images
Add and format shapes
Use hyperlinks for navigation
Embed content such as maps or videos

https://www.ilearn2.co.uk/year-5-ebook-creation.html

Other linked software/website/apps
https://app.bookcreator.com/sign-in
https://webqr.com/

==Information Technology==

Implicit skills as year 3 and 4 above, awareness of feedback on blogging activities and also effect of feedback on Showbie work

Internet safety to include awareness of footprint terms such as grooming, sexting | Music Creation

Duration of unit 3-4 hours

Skills:
Layer tracks using sounds and effects
Create effective instrument tracks
Edit tracks and effectively adjust volume and add effects
Build a song using Live Loops

https://www.ilearn2.co.uk/year-5-music-creation.html

other linked software/website/apps:
www.beepbox.co
also garage band on iPads

==Information Technology==

Implicit skills as year 3 and 4 above, awareness of feedback on blogging activities and also effect of feedback on Showbie work

Internet safety to include awareness of footprint terms such as grooming, sexting and how to manage risk online. | Programming in Scratch

Duration of unit 5-7 hours
Skills:
Program list variables that are chosen randomly
Program inputs, conditions and sensing for interaction, data variables for scoring and a game timer
Program inputs, outputs, loops, conditions, sensing and variables

https://www.ilearn2.co.uk/y5scratch.html

other linked software/website/apps:
https://scratch.mit.edu/

Additional microbit projects (CLHS use microbits in transition activity for Y6)

Links to Y5 physical devices unit

==Computer Science Computational Thinking==

Implicit skills as year 3 and 4 above, awareness of feedback on blogging activities and also effect of feedback on Showbie work

Internet safety to include awareness of footprint terms | Computer Networks and the Internet

Duration of unit 2-3 hours
Skills:
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

https://www.ilearn2.co.uk/year-5-computer-networks.html

==Digital Literacy==

Data Handling

Duration of unit 3-5 hours
Skills:
Select and use non adjacent cells plus resize multiple cell widths and copy/paste cells
Use formulae to find totals, averages and minimum/maximum numbers
Select the correct chart to present data
Answer 'what if…?' questions

https://www.ilearn2.co.uk/year5datahandling.html

other linked software/website/apps: | App Design

Duration of unit 4-6 hours
Skills:
Adjust slide to mimic a phone/tablet size
Add text and images to a slide
Add icons and text to use as navigation
Duplicate slides to create multiple pages of the app
Create hyperlinks for navigation

https://www.ilearn2.co.uk/appdesignteacher.html

other linked software/website/apps:
Microsoft PowerPoint
Google Slides

==Information Technology==

Implicit skills as year 3 and 4 above, awareness of feedback on blogging activities and also effect of feedback on Showbie work Internet safety to include awareness of footprint terms such as grooming, sexting and how to manage risk online. | |

and how to manage risk online.		*such as grooming, sexting and how to manage risk online.*	Microsoft excel https://www.google.co.uk/maps/ **Information Technology** *Implicit skills as year 3 and 4 above, awareness of feedback on blogging activities and also effect of feedback on Showbie work* *Internet safety to include awareness of footprint terms such as grooming, sexting and how to manage risk online.*	

6	Programming in Scratch	Graphic design	Computers past present future	Virtual reality	Programming in Python	Image editing
	Duration of unit 6-8 hours Skills: Program inputs, conditions, random variables, for unpredictability, game timer Program inputs, conditions, sensing, random variables, operators for direction, and data variables for scoring Use inputs, conditions, loops, sensing, costume changes and broadcasts https://www.ilearn2.co.uk/y6scratch.html Other linked software/websites/apps: https://scratch.mit.edu/ **Computer Science Computational Thinking** *Implicit skills build on year 3, 4 and 5 above.* *Internet safety to include awareness of footprint terms such as grooming, sexting and how to manage risk online.*	Duration of unit 2-3 hours Skills: Add, adjust and fill shapes, group shapes to improve accuracy and speed Add ands customise gradient effects Adjust transparency/opacity for a purpose Use a colour picker correctly Accurately rotate shapes https://www.ilearn2.co.uk/year6graphicdesign.html other linked software/websites/apps: Microsoft PowerPoint Google Slides **Information Technology** *Implicit skills build on year 3, 4 and 5 above.* *Internet safety to include awareness of footprint terms such as grooming, sexting and how to manage risk online.*	Duration of unit 2-3 hours Skills: Design and create digital content to accomplish goals Use search technologies effectively and discerning in evaluating digital content Understand how technology has changed over time. Combine text and images to present ideas Understand the impact (positive/negative) technological changes have on society Predict how technology will change in the future https://www.ilearn2.co.uk/year-6-computers-past-present-future.html other linked software/websites/apps: MS Word, PowerPoint, Publisher http://www.readwritethink.org/files/resources/interactives/timeline_2/ https://apps.apple.com/gb/app/timeline-3d/id1015123311 **Information Technology**	Duration of unit 5-8 hours Skills: Understand what virtual reality is and how it can be used to help people Add, move and resize objects in a virtual reality environment Animate objects for realism Use code blocks to add movement (with grouping) and interactions (conditions) Create multiple scenes of VR environments https://www.ilearn2.co.uk/virtualrealityteacher.html other linked software/websites/apps: https://cospaces.io/edu/ https://cospaces.io/edu/tech-check.html#vr https://store.google.com/product/google_cardboard?utm_source=google-cardboard&utm_medium=MS&utm_campaign=Google_Cardboard https://apps.apple.com/us/app/cospaces-edu/id1224622426 https://www.ilearn2.co.uk/augmentedreality.html	Duration of unit 2-3 hours Skills: Program movements using Python Turtle Using the PRINT command for text Program a simple calculator in Python Program loops to repeat texts Program interactive inputs https://www.ilearn2.co.uk/year-6-python-programming.html other linked software/websites/apps: https://codecombat.com/ https://repl.it/languages/python_turtle https://repl.it/languages/python3 **Computer Science Computational Thinking** *Implicit skills build on year 3, 4 and 5 above.* *Internet safety to include awareness of footprint terms such as grooming, sexting and how to manage risk online.*	Duration of unit 2-3 hours Skills: Take and crop a screenshot and understand ratios Adjust the colours, brightness, contrast and filters Add drawing and text layers Import new images as layers and resize/add effects Save finished image to use in other projects https://www.ilearn2.co.uk/imageeditingteacher.html other linked software/websites/apps: https://pixlr.com/x/ https://www.google.com/maps **Information Technology** *Implicit skills build on year 3, 4 and 5 above.* *Internet safety to include awareness of footprint terms such as grooming, sexting and how to manage risk online.*

| | | | | *Implicit skills build on year 3, 4 and 5 above.*

Internet safety to include awareness of footprint terms such as grooming, sexting and how to manage risk online. | **Information Technology**

Implicit skills build on year 3, 4 and 5 above.

Internet safety to include awareness of footprint terms such as grooming, sexting and how to manage risk online. | | |