



Colgate Primary School Computing Learning Overview

Thread	EYFS	KS1		Lower KS2		Upper KS2
		Year 1	Year 2	Oak Year 3/4	Cedar Year 4/5	Year 6
Information Technology	<p>Computer Discovery</p> <p>Learn how to use computers and digital devices but also understand how computers help us, the differences between different types of digital technology and recognise basic components</p> <p>Mouse and keyboard skills</p> <p>Move cursor and left click to select.</p> <p>Click and drag to move items.</p> <p>Find letters on a keyboard and begin touch typing.</p> <p>Digital literacy to support early</p>	<p>Mouse and keyboard skills</p> <p>Move cursor and left click to select. Click and drag to move items. Find letters on a keyboard and begin touch typing.</p> <p>Digital Art</p> <p>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.</p> <p>Design</p> <p>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</p>	<p>Digital Art</p> <p>Use lines and fill tools to make interesting patterns. Add a variety of shapes (outlines and fill) and label them with text. Re-create graphics using pixels with different colours.</p> <p>Introduction to Animation</p> <p>Add a background and objects to a frame, including text. Copy/clone a frame and move objects to create an animation. Plus flip an object. Create screen-recording animation (optional, requires iPad). Create stop-motion animation with photos (optional, requires iPad).</p> <p>Data Handling</p>	<p>Digital Art</p> <p>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.</p> <p>Comic Creation</p> <p>Add, resize and organise colour or picture backgrounds. Add, resize, organise characters/object to different panels. Add narration using text and direct speech using speech bubbles.</p> <p>Storyboards</p> <p>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.</p> <p>Music Creation 1</p> <p>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.</p>	<p>App Design</p> <p>Adjust slide size 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 to create navigation.</p> <p>Data handling 1</p> <p>Change appearance of cells in a spreadsheet (fill colour and border) then add and align text. Find and add data to a spreadsheet, resize cells and use the software to create a suitable chart with a title.</p> <p>Data handling 2</p> <p>Select and use non-adjacent cells plus resize multiple cell widths and copy/paste cells. Use formulae to find totals, averages and maximum/minimum numbers. Find data and create a spreadsheet to suit it. Search a database to find specific information.</p> <p>EBook creation 1</p> <ol style="list-style-type: none"> 1. Choose a suitable page shape and add a title and subtitle. 2. Change the background colour/texture of a page. 3. Add, resize and change the colour of a shape then copy and paste it. 4. Search for and add suitable images then resize and position them. 5. Create another page with a background, image, shapes and text. 6. Add an audio recording of the page text. 	<p>Graphic Design</p> <p>Add, adjust and fill shapes. Group shapes to improve accuracy and speed. Add and customise gradient effects. Adjust transparency/opacity for a purpose. Use a colour picker correctly. Accurately rotate shapes.</p> <p>Computers Past Present and Future</p> <p>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.</p> <p>Image Editing</p>

	<p>Mathematics and Literacy –Early Years</p> <p>Interact with age appropriate software</p> <p>Early Music creation pack</p> <p>Explore how sounds can be changed (30-50 months)</p> <p>Explore different sounds of instruments (40-60 months)</p> <p>They select and use technology for a particular purpose (Early Learning Goals)</p> <p>Represent own ideas through music (Early Learning Goals)</p> <p>Digital photos and videos</p> <p>Knows how to operate simple equipment.</p> <p>Choose particular colours for a purpose</p>	<p>behind/in front of each other.</p> <p>Text and Images</p> <p>Add, move and resize images the add text and adjust size and placement.</p> <p>Add, resize and place images on a page then add and position text to label and describe images.</p> <p>Use word banks to write sentences about images.</p> <p>Comic Creation</p> <p>Add, resize and organise colour or picture backgrounds.</p> <p>Add, resize, organise characters/object to different panels.</p> <p>Add narration using text and direct speech using speech bubbles</p> <p>Music Creation</p> <p>Create a rhythm using a pattern of beats.</p> <p>Create digital sounds using patterns and shapes.</p> <p>Create a simple melody using patterns and adjust tempo.</p>	<p>Understand what data is and collect it as a tally.</p> <p>Label a pictogram and add data to each column.</p> <p>Edit a table with correct titles and numbers.</p> <p>Create a bar chart/pie chart/line chart suitable for the data.</p> <p>Interpret a pictogram/bar chart/line chart.</p> <p>EBook creation</p> <p>Add a book cover with title, author, colour and image.</p> <p>Add multiple pages based on a theme.</p> <p>Add text on different pages.</p> <p>Add images on different pages to match the theme/text.</p> <p>Add voice recordings to match the text and theme.</p> <p>Typing</p>	<p>Build beats, melody (tones) and effects.</p> <p>Music Creation 2</p> <p>Layer tracks using sounds and effects.</p> <p>Create effective instrument tracks.</p> <p>Document Editing and creation</p> <p>Copy and Paste text and images.</p> <p>Find and replace words.</p> <p>Format text for a purpose.</p> <p>Add bullet points to make lists.</p> <p>Experiment with keyboard shortcuts.</p> <p>3D design 1</p> <p>Understand and use 3D space on a grid.</p> <p>Re-create or design familiar 3D models using cubes, such as tables and chairs.</p> <p>Use chisel tool to improve and adapt models.</p> <p>Colour individual blocks or whole models.</p> <p>3D design 2</p> <p>3D Village Pupil Activity Pack skills:</p> <p>Understand 3D spacial awareness.</p> <p>Add 3D shapes, resize, adjust height, duplicate and use the different perspective.</p> <p>Re-create different types of buildings using 3D shapes.</p> <p>Create roads/paths by adjusting the height of 3D shapes.</p> <p>Add windows and door shapes.</p> <p>Typing</p>	<p>7. Use hyperlinks for navigation between the pages.</p> <p>EBook Creation 2</p> <p>Add page colour and style</p> <p>Add, position and format text on different pages</p> <p>Add and position images</p> <p>Add audio, including hiding it behind an object.</p> <p>Add hyperlinks to text and images</p> <p>Search for shapes</p> <p>Lock and arrange shapes (extension task)</p> <p>Branching Databases</p> <p>Add and label objects within a branching database.</p> <p>Ask questions to sort (classify) objects.</p> <p>Animation</p> <p>Create a stop-motion video by duplicating slides (frames) using background colour, shapes and images.</p> <p>Create animation using transition effects (motion paths, pulse etc).</p> <p>Animate individual elements of objects.</p> <p>Create animated GIF files by animating pixels.</p> <p>Video Editing</p> <p>Add clips then order and resize them.</p> <p>Add titles to clips and change themes.</p> <p>Add voiceovers and music.</p> <p>Add filters to clips.</p> <p>Export a project.</p> <p>Typing</p>	<p>Take and crop a screenshot and understand ratios.</p> <p>Adjust the colours, brightness, contrast and filters.</p> <p>Add drawing and text layers.</p> <p>Import new images as layers and resize/add effects.</p> <p>Save finished image to use in other projects.</p> <p>Web Design</p> <p>Add and format text within a website.</p> <p>Organise sections of web-pages and multiple page with relevant titles.</p> <p>Add and edit images.</p> <p>Include other features such as hyperlinks, buttons and files.</p> <p>Evaluate other websites and provide constructive feedback.</p> <p>Make necessary changes to the website based on feedback.</p>
Computer Science	<p>Programming-early years</p> <p>Knows how to operate simple equipment.</p>	<p>Introducing Programming</p> <p>Understand sequence and algorithms.</p>	<p>Develop programming</p> <p>Create and debug simple programs by selecting code blocks, placing</p>	<p>Programming in Scratch 1</p> <p>Design, write and debug programs that accomplish specific goals. (Including outputs)</p> <p>Use repetition in programs.</p> <p>Work with various form of inputs; keyboard, mouse and touch screen.</p>	<p>Text based programming</p> <p>Change the variables of text-based commands.</p> <p>Write text-based commands accurately.</p> <p>Write text-based commands to program digital art.</p>	<p>Scratch</p> <p>Program inputs, conditions, random variables for unpredictability, game timer.</p>

	<p>Give explanations.</p>	<p>Sequence instructions (commands) to achieve an objective. Use distances in commands. Predict, write, execute and debug a simple program.</p>	<p>them in the correct sequence and executing a program. Use logical reasoning to predict the behaviour of simple programs. Simplify a program by using a loop.</p> <p>Programming with Scratch Understand sequence and algorithms. Sequence instructions (commands) to achieve an objective. Predict, write, execute and debug a simple program.</p>	<p>Write programs to simulate physical systems.</p> <p>Scratch 2 Program list variables that chooses randomly. Program inputs, conditions and sensing for interaction, data variables for scoring and a game timer. Program Inputs, outputs, loops, conditions, sensing and variables.</p>	<p>Write text commands/functions to program keyboard inputs in a game.</p> <p>Physical devices Understand that computers use physical inputs and outputs and give examples. Program physical inputs and outputs (e.g program LED lights). Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems.</p>	<p>Program inputs, conditions, sensing, random variables, operators for direction and data variables for scoring. Use inputs, conditions, loops, sensing, costume changes and broadcasts. Work with multiple sprites to send broadcast messages between them.</p> <p>Binary Code Understand why computers/electronics use binary. To convert binary code to denary numbers (decimal numbers) and visa versa.</p> <p>Python Programming Language Use the PRINT command for text. Program a simple calculator in Python. Program loops to repeat text. Program interactive inputs. Program a trivia chatbot using 'send message' functions (challenge)</p> <p>HTML Add and align text and change colour. Program background colour. Add and align images. Add hyperlinks to other websites.</p>
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Digital literacy-	<p>E-safety Have growing awareness of the dangers of the internet and an</p>	<p>E-safety Keep personal information private.</p>	<p>Recognise uses of IT Understand what makes a computer a computer.</p>	<p>E-safety 1 Understand what to do if something upsets you online. Understand why and how people can be nasty online.</p>	<p>Inside a computer Understand what important parts of inside a computer or mobile device do to help with the performance (CPU, Fan, Hard Drive, RAM, Graphics Card).</p>	<p>E-safety Keep personal information private. Respect and protect against online bullies.</p>

	<p>understanding of the positives and the negatives. Know that if something is wrong tell an adult they trust.</p>	<p>Why do websites want personal information? Identify when and where to go for help when concerned</p>	<p>Understand computers store and follow instructions. Spot digital technology in school. Understand how different technology helps us.</p> <p>E-safety What are the dangers of sharing photos online? People online are not always who they say they are. Trusting information online. Using the Internet responsibly. Being respectful.</p> <p>Internet Research Understand how a web-page displays information in different ways; text, images, videos and interactive elements. Use a web-page to answer questions.</p>	<p>Describe the term 'sharing online' and why we need to get permission to share photos and videos of other people. Understand why people pretend to be someone else online. Understand why we only talk to people we know in the real world, when online. Understand why we should not always trust what we read online and how to check. Understand the importance of being kind in the real world and also online.</p> <p>E-safety 2 Understand what to do if something upsets you online. Understand why and how people can be nasty online. Describe the term 'sharing online' and why we need to get permission to share photos and videos of other people. Understand why people pretend to be someone else online. Understand why we only talk to people we know in the real world, when online. Understand why we should not always trust what we read online and how to check. Understand the importance of being kind in the real world and also online.</p> <p>Internet Research Use search technologies to find specific pieces of information. Understand features of an Internet Browser. Reference the correct source of information. Be discerning in evaluating digital content. Check the internet for fake news by cross-referencing facts.</p>	<p>Understand that memory is measured in bytes and gigabytes. Use search filters on websites to find suitable information.</p> <p>Computer Networks + internet Understand Computer Networks, Internet and Cloud Computing and how they help us. What is email and how can we use it safely? Understand how and why we collaborate online (including blogging).</p> <p>E-safety Keep personal information private. Respect and protect again online bullies. Understand the consequences of sharing photo/videos online. Understand the term digital footprint. How can we check online content is trustworthy. How and where and who can we report concerns we have to.</p>	<p>Understand the consequences of sharing photo/videos online. Understand the term digital footprint. How can we check online content is trustworthy. How, where and who can we report concerns we have to. Use suitable usernames and passwords for online accounts.</p>
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