



Computing

EYFS

Knowledge, Skills and Understanding breakdown for Computing

Digital programming	Digital Making	Digital Skills
<p>Computational thinking:</p> <p>I know how to follow simple oral instructions</p> <p>I know how to spot simple patterns, such as similarities and differences</p> <p>I know how to sequence simple familiar tasks</p> <p>Coding:</p> <p>I know how to use a touch screen/pad or appropriate access device to target and select options on screen</p>	<p>Presentations/eBooks</p> <p>I know how to record my voice over a picture.</p> <p>I know how to create a simple digital collage.</p> <p>I know how to move and resize images with my fingers.</p> <p>Video Creation:</p> <p>I know the difference between a photography and video.</p> <p>I know how to record a short film using the camera</p> <p>I know how to record and play a film</p> <p>I know how to watch films back</p> <p>Digital Art:</p> <p>I know how to take a photograph</p> <p>I know how to take a photograph and use it in an app</p> <p>I know how to use a painting app and explore the paint and brush tools</p> <p>Sound:</p> <p>I know how to record sounds with different resources</p> <p>I know how to find ways to change your voice (tube, tin can, shouting to create an echo)</p> <p>I know how to record sounds/voices in storytelling and explanations</p>	<p>Word Processing:</p> <p>I know how to play on a touch screen game and use computers/keyboards.</p> <p>I know how to type letters with increasing confidence using a keyboard and tablet.</p> <p>I know how to dictate short, clear sentences into a digital device.</p> <p>Data Handling:</p> <p>I know how to identify a chart.</p> <p>I know how to sort physical objects, take a picture and discuss what I have done.</p> <p>I know how to present simple data on a digital device</p>

Challenge

EYFS	Use sequencing/patterns to reason and problem solve.	Use photo app to edit, crop and alter images	To word process some simple sentences.
------	--	--	--

Computing

Year 1

Knowledge, Skills and Understanding breakdown for Computing

Digital programming	Digital Making	Digital Skills	
<p>Computational thinking:</p> <ul style="list-style-type: none"> I understand what algorithms are I know how to write simple algorithms I understand the sequence of algorithms is important I know how to debug simple algorithms <p>Coding:</p> <ul style="list-style-type: none"> I know how to create a simple program on a digital device e.g. Bee Bot or tablet I know how to use sequence in programs I know how to locate and fix bugs in my program 	<p>Presentations/eBooks</p> <ul style="list-style-type: none"> I know how to add labels to an image I know how to order images to create a simple storyboard. I know how to create a simple spider diagram. I know how to sequence a series of pictures to explain my understanding of a topic. <p>Video Creation:</p> <ul style="list-style-type: none"> I know how to record a film using the camera app. I know how to select images and record a voiceover. I know how to highlight and zoom into images as I record. <p>Digital Art:</p> <ul style="list-style-type: none"> I know how to select and use tools to create digital imagery - controlling the pen and using the fill tool I know how to edit a photo with simple tools I know how to use a paint/drawing app to create a digital image I know how to begin to cut out an image to layer on another image 	<p>Word Processing:</p> <ul style="list-style-type: none"> I know how to play on a touch screen game and use computers/keyboards. I know how to type letters with increasing confidence using a keyboard and tablet. I know how to type simple words, change fonts and resize lettering. <p>Data Handling:</p> <ul style="list-style-type: none"> I know how to sort images or text into two or more categories on a digital device. I know how to collect data on a topic. I know how to create a tally chart and pictogram. I know how to record myself explaining what I have done and what it shows me. 	
Challenge			
Year 1	More challenging debugging exercises	Create an animation with images included	Explainer videos in maths



Computing

Year 2

Knowledge, Skills and Understanding breakdown for Computing

Digital programming	Digital Making	Digital Skills
<p>Computational thinking:</p> <ul style="list-style-type: none"> I know how to write algorithms for everyday tasks. I know how to use logical reasoning to predict the outcome of algorithms I understand decomposition is breaking objects/processes down I know how to debug algorithms <p>Coding:</p> <ul style="list-style-type: none"> I understand programs follow precise instructions I know how to create programs using different digital devices E.g. Bee Bot or ScratchJr on a tablet I know how to debug programs of increasing complexity I know how to use logical reasoning to predict the outcome of simple programs 	<p>Presentations/eBooks</p> <ul style="list-style-type: none"> I know how to add voice labels to an image. I know how to add a voice recording to a storyboard. I know how to add speech bubbles to an image to show what a character thinks. I know how to import images to a project from the web and camera roll <p>Animation:</p> <ul style="list-style-type: none"> I know how to create multiple animations of an image and edit these together. I know how to create a simple stop motion animation. I know how to explain how an animation/flip book works <p>Sound:</p> <ul style="list-style-type: none"> I know how to create a sequence of sounds (instruments, apps/software) I know how to record my voice and add different effects. I know how to create a musical composition using software I know how to record my own sound effects. I know how to record my voice over a compositions to perform a song. 	<p>Word Processing:</p> <ul style="list-style-type: none"> I can use the space bar only once between words and use touch to navigate to words and letters to edit I can copy and paste images and text I can use caps locks for capital letters. I can add images alongside text in a word processed document. I can dictate longer passages into a digital device with accurate punctuation <p>Data Handling:</p> <ul style="list-style-type: none"> I know how to sort digital objects into a range of charts such as Venn diagrams, Carroll diagrams and bar charts using different apps and software. I know how to orally record myself explaining what the data shows me. I know how to create a branching database using questions

Challenge

Year 2	Independently use algorithms to solve problems such as mazes.	Combine music/sounds into videos linked to learning.	Present a written piece of work
--------	---	--	---------------------------------



Computing

Year 3

Knowledge, Skills and Understanding breakdown for Computing

Digital programming	Digital Making	Digital Skills
<p>Computational thinking:</p> <p>I can create algorithms for use when programming</p> <p>I can decompose tasks (such as animations) into separate steps to create an algorithm</p> <p>I can identify patterns in an algorithm</p> <p>I can use repetition in algorithms</p> <p>Coding:</p> <p>I can design, create and write programs that accomplish specific goals</p> <p>I can use repetition in programs I can work with various forms of input</p> <p>I can use block code (Scratch 3) to debug code and draw shapes and lines using algorithms.</p> <p>Computer Networks :</p> <p>I understand why computers are networked</p> <p>I understand the difference between the Internet and the World Wide Web (WWW)</p>	<p>Presentations/eBooks</p> <p>I can format text, edit audio and video to create interactive presentations</p> <p>I can create a simple mind map / timeline</p> <p>I can create an eBook with text, images and sound</p> <p>Video Creation:</p> <p>I can sequence clips of mixed media in a timeline and record a voiceover</p> <p>I can trim and cut film clips and add titles and transitions</p> <p>I can create my own movie trailer</p> <p>Digital Art:</p> <p>I can confidently take and manipulate photos</p> <p>I can create a digital image using a range of tools, pens, brushes and effects</p> <p>I can enhance digital images and photographs</p> <p>I can manipulate shapes to create digital art.</p>	<p>Word Processing:</p> <p>I can use index fingers on keyboard home keys (f/j), use left fingers for a/ s/ d/f/g, and use right fingers for h/j/k/l</p> <p>I can edit the style and effect of my text and images to make my document more engaging and eye-catching.</p> <p>I can use formatting tools to improve and organise text.</p> <p>Basic Touch Typing: Use of Typing.com First 10 lessons</p>

Challenge

Year 3	To begin using simple selection in algorithms	To understand the role of green screen	To create more complex data handling projects.
--------	---	--	--



Computing

Year 4

Knowledge, Skills and Understanding breakdown for Computing

Digital programming	Digital Making	Digital Skills
<p>Computational thinking: I can write increasingly more precise algorithms for use when programming. I can use simple selection in algorithms I can use logical reasoning to detect and correct errors in programs</p> <p>Coding: I can use simple selection in programs I can work with various forms of output I can use logical reasoning to systematically detect and correct errors in programs</p> <p>Computer Networks : I understand that servers on the Internet are located across the planet I understand how email is sent across the Internet I understand how the Internet enables us to collaborate I understand the difference between the Internet and the World Wide Web (WWW)</p>	<p>Presentations/eBooks: I can create projects that use hyperlinks to increase interactivity I can create an eBook with text, images and sound I can create a digital mind map and include different media - sound and video</p> <p>Animation: I can make multiple animations and edit them together for a longer video. I can use line draw tool to create animations.</p> <p>Video Creation: I can add transitions, music and sound effects to my films I can add simple subtitles to a video clip. I can use green screen adding animated backgrounds.</p> <p>Sound: I can create and edit purposeful compositions using music software to create mood or a certain style I can use live loops to create a song Edit sound effects for a purpose. Create a simple four chord song following the correct rhythm. I can record a radio broadcast or audio-book.</p>	<p>Word Processing: I can combine digital images from different sources, objects, and text to make a final piece of a variety of tasks I can confidently and regularly use text shortcuts to organise text I can use font sizes appropriately for audience and purpose. I can use spell check and thesaurus including through Siri and other AI technology</p> <p>Data Handling: I can create my own online multiple choice questionnaire. I can input data into a spreadsheet and export the data in a variety of ways I understand how data is collected. I can create a sorting diagram and complete a data handling activity with it I can start to input simple data into a spreadsheet.</p>

Challenge

Year 4	Begin introducing variables into their work	Combine medias to demonstrate their learning	Start expanding the number of formulae they can explore
--------	---	--	---



Computing

Year 5

Knowledge, Skills and Understanding breakdown for Computing

Digital programming	Digital Making	Digital Skills
<p>Computational thinking: I can solve problems by decomposing them into smaller parts I can recognise the need for conditions in repetition within algorithms I can use logical reasoning to detect and correct errors in algorithms I can evaluate my work and identify errors</p> <p>Coding: I can use selection in programs I can use conditions in repetition commands I can work with variables I can create programs that control or simulate physical systems I can evaluate my work and identify errors I can program and problem solve using Micro:Bit coding app and technology</p> <p>Computer Networks : I understand how we view web pages on the Internet I use search technologies effectively I know how pages are ranked in a search engine</p>	<p>Presentations/eBooks: I can collaborate with peers using presentation tools I can create and export an interactive presentation including a variety of media, animations, transitions and other effects I can create an interactive guide to a image by embedding digital content</p> <p>Animation: I can combine different animations to create a scene like an interview. I can add green screen effects to a stop motion animation</p> <p>Video Creation: I can use cutaway and split screen tools in a movie. I can evaluate the best video tools to best explain my understanding I can further improve green screen clips using crop and resize and explore more creative ways to use the tool</p> <p>Digital Art: I can make a digital photo using camera settings I can enhance digital photos and images using a variety of tools I can link and explain how to Photoshop images and how this is used in the media</p>	<p>Word Processing: I can start to apply hyperlinks I can import sounds to accompany and enhance the text in my document I can organise and reorganise text on screen to suit a purpose</p> <p>Data Handling: I can create an online questionnaire and analyse the results I can use simple formulae to solve calculations including =sum and other statistical functions I can edit and format different cells in a spreadsheet.</p>

Challenge

Year 5	Explore procedures within programming	Develop their own musical composition	Make links with learning in maths
--------	---------------------------------------	---------------------------------------	-----------------------------------



Computing

Year 6

Knowledge, Skills and Understanding breakdown for Computing

Digital programming	Digital Making	Digital Skills
<p>Computational thinking: I can recognise, and make use, of patterns across programming projects I can write precise algorithms for use when programming I can identify variables needed and their use in selection and repetition I can decompose code into sections for effective debugging I can critically evaluate my work and suggest improvements</p> <p>Coding: I can use a range of sequence, selection and repetition commands combined with variables as required to implement my design I can create procedures to hide complexity in programs I can critically evaluate my work and suggest improvements I can program and use Micro:Bit software and programs.</p> <p>Computer Networks: I understand what HTML is and recognize HTML tags I know a range of HTML tags and can remix a web page I can create a webpage using HTML</p>	<p>Presentations/eBooks: I can design an app prototype that links multimedia pages together with hyperlinks I can choose applications to communicate to a specific audience. I can evaluate my own content and consider ways to improvements.</p> <p>Animation: I can mix animations and videos recordings of myself to create video interviews. I can plan, script and create a 3D animation to explain a concept or tell a story. I can choose and create different types of animations to best explain my learning</p> <p>Video Creation: I can use the green screen masking tool with more than one character. I can create videos using a range of media - green screen, animations, film and image to further enhance my creation</p> <p>Digital Art: I can edit a picture to remove items, add backgrounds, merge 2 photos I can evaluate and discuss images I can use a 3D drawing app to create a realistic representation of world objects</p> <p>Sound: I can add voice over to images. Create a remix of a popular song I can edit sound clips to use in a film can compose a soundtrack that can be added to a film project.</p>	<p>Word Processing: I can confidently choose the best application to demonstrate my learning. I can format text to suit a purpose.</p> <p>Data Handling: I can write spreadsheet formula to solve more challenging maths problems I can create and publish my own online quiz with a range of media (images and video)</p>

Challenge

Year 6	To apply knowledge to a wider range of physical outputs	To bring together multiple technologies to combine them and achieve a goal.	Use wider multimedia within their quiz.
--------	---	---	---