



## Computing

### EYFS

#### Knowledge, Skills and Understanding breakdown for Computing

Digital programming	Digital Making	Digital Skills
<p><b>Computational thinking:</b></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><b>Coding:</b></p> <p>I know how to use a touch screen/pad or appropriate access device to target and select options on screen</p>	<p><b>Presentations/eBooks</b></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><b>Video Creation:</b></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><b>Digital Art:</b></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><b>Sound:</b></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><b>Word Processing:</b></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><b>Data Handling:</b></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.
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## Computing

### Year 1

#### Knowledge, Skills and Understanding breakdown for Computing

Digital programming	Digital Making	Digital Skills
<p><b>Computational thinking:</b></p> <p>I understand what algorithms are</p> <p>I know how to write simple algorithms</p> <p>I understand the sequence of algorithms is important</p> <p>I know how to debug simple algorithms</p> <p><b>Coding:</b></p> <p>I know how to create a simple program on a digital device e.g. Bee Bot or tablet</p> <p>I know how to use sequence in programs</p> <p>I know how to locate and fix bugs in my program</p>	<p><b>Presentations/eBooks</b></p> <p>I know how to add labels to an image •</p> <p>I know how to order images to create a simple storyboard.</p> <p>I know how to create a simple spider diagram.</p> <p>I know how to sequence a series of pictures to explain my understanding of a topic.</p> <p><b>Animation:</b></p> <p>I know how to animate a simple image to speak in role</p> <p>I know how to create a simple animation to tell a story including more than one character</p> <p>I know how to add filters and stickers to enhance an animation of a character.</p> <p>I know how to create an animation to tell a story with more than one scene.</p> <p>I know how to add my own pictures to my story animation.</p> <p><b>Video Creation:</b></p> <p>I know how to record a film using the camera app.</p> <p>I know how to select images and record a voiceover.</p> <p>I know how to highlight and zoom into images as I record.</p> <p><b>Digital Art:</b></p> <p>I know how to select and use tools to create digital imagery - controlling the pen and using the fill tool</p> <p>I know how to edit a photo with simple tools</p> <p>I know how to use a paint/drawing app to create a digital image</p> <p>I know how to begin to cut out an image to layer on another image</p>	<p><b>Word Processing:</b></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 type simple words, change fonts and resize lettering.</p> <p><b>Data Handling:</b></p> <p>I know how to sort images or text into two or more categories on a digital device.</p> <p>I know how to collect data on a topic.</p> <p>I know how to create a tally chart and pictogram.</p> <p>I know how to record myself explaining what I have done and what it shows me.</p>

### Challenge

Year 1	More challenging debugging exercises	Create an animation with images included	Explainer videos in maths
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# Computing

## Highlight by topic

Term 1: Explorers—Arctic/Antarctic

Term 2: Explorers—Rainforests

Term 3: Myths & Legends

Term 4: Cities

Term 5: Artists

Term 6: Castles

## Year 2

### Knowledge, Skills and Understanding breakdown for Computing

Digital programming	Digital Making	Digital Skills
<p><b>Computational thinking:</b></p> <p>I know how to write algorithms for everyday tasks.</p> <p>I know how to use logical reasoning to predict the outcome of algorithms</p> <p>I understand decomposition is breaking objects/processes down</p> <p>I know how to debug algorithms</p> <p><b>Coding:</b></p> <p>I understand programs follow precise instructions</p> <p>I know how to create programs using different digital devices E.g. Bee Bot or ScratchJr on a tablet</p> <p>I know how to debug programs of increasing complexity</p> <p>I know how to use logical reasoning to predict the outcome of simple programs</p>	<p><b>Presentations/eBooks</b></p> <p>I know how to add voice labels to an image.</p> <p>I know how to add a voice recording to a storyboard.</p> <p>I know how to add speech bubbles to an image to show what a character thinks.</p> <p>I know how to import images to a project from the web and camera roll</p> <p><b>Animation:</b></p> <p>I know how to create multiple animations of an image and edit these together.</p> <p>I know how to create a simple stop motion animation.</p> <p>I know how to explain how an animation/flip book works</p> <p><b>Video Creation:</b></p> <p>I know how to write and record a script using a teleprompter tool.</p> <p>I know how to use tools to add effects to a video</p> <p><b>Sound:</b></p> <p>I know how to create a sequence of sounds (instruments, apps/software)</p> <p>I know how to record my voice and add different effects.</p> <p>I know how to create a musical composition using software</p> <p>I know how to record my own sound effects.</p> <p>I know how to record my voice over a compositions to perform a song.</p>	<p><b>Word Processing:</b></p> <p>I can use the space bar only once between words and use touch to navigate to words and letters to edit</p> <p>I can copy and paste images and text</p> <p>I can use caps locks for capital letters.</p> <p>I can add images alongside text in a word processed document.</p> <p>I can dictate longer passages into a digital device with accurate punctuation</p> <p><b>Data Handling:</b></p> <p>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.</p> <p>I know how to orally record myself explaining what the data shows me.</p> <p>I know how to create a branching database using questions</p>

## 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
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# Computing

Highlight by topic

Year A Autumn - Tudors

Year A Spring – Around The World

Year A Summer – Think Local, Act Global

Highlight by topic

Year B Autumn – Ancient Egypt

Year B Spring - Splash

Year B Summer – They're Coming...

## Year 3

### Knowledge, Skills and Understanding breakdown for Computing

Digital programming	Digital Making	Digital Skills
<p><b>Computational thinking:</b></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 understand abstraction is focusing on important information</p> <p>I can identify patterns in an algorithm</p> <p>I can use repetition in algorithms</p> <p><b>Coding:</b></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><b>Computer Networks :</b></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><b>Presentations/eBooks</b></p> <p>I can format text, edit audio and video to create interactive presentations</p> <p>I can create a simple web page.</p> <p>I can create a simple mindmap / timeline</p> <p><b>Animation:</b></p> <p>I can improve stop motion animation clips with techniques like onion skinning.</p> <p>I can use animation tools in presenting software to create simple animations.</p> <p><b>Video Creation:</b></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><b>Digital Art:</b></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><b>Word Processing:</b></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><b>Data Handling:</b></p> <p>I can create a sorting diagram and complete a data handling activity with it</p> <p>I can start to input simple data into a spreadsheet.</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.
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# Computing

Highlight by topic

Year A Autumn - Tudors

Year A Spring – Around The World

Year A Summer – Think Local, Act Global

Highlight by topic

Year B Autumn – Ancient Egypt

Year B Spring - Splash

Year B Summer – They're Coming...

## Year 4

### Knowledge, Skills and Understanding breakdown for Computing

Digital programming	Digital Making	Digital Skills
<p><b>Computational thinking:</b>            I can use abstraction to focus on what's important in my design            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><b>Coding:</b>            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><b>Computer Networks :</b>            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</p>	<p><b>Presentations/eBooks:</b>            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 mindmap and include different media - sound and video</p> <p><b>Animation:</b>            I can make multiple animations and edit them together for a longer video.            I can use line draw tool to create animations.</p> <p><b>Video Creation:</b>            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><b>Sound:</b>            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><b>Word Processing:</b>            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><b>Data Handling:</b>            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.</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
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# Computing

### Highlight by topic

Year A Autumn - The Blitz

Year A Spring – Out Of This World

Year A Summer – Bristol

### Highlight by topic

Year B Autumn – Eureka!

Year B Spring - On the Latin Side

Year B Summer – British Greats

## Year 5

### Knowledge, Skills and Understanding breakdown for Computing

Digital programming	Digital Making	Digital Skills
<p><b>Computational thinking:</b>            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><b>Coding:</b>            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</p> <p><b>Computer Networks :</b>            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><b>Presentations/eBooks:</b>            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><b>Animation:</b>            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><b>Video Creation:</b>            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><b>Digital Art:</b>            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><b>Word Processing:</b>            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><b>Data Handling:</b>            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
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# Computing

### Highlight by topic

Year A Autumn - The Blitz

Year A Spring – Out Of This World

Year A Summer – Bristol

### Highlight by topic

Year B Autumn – Eureka!

Year B Spring - On the Latin Side

Year B Summer – British Greats

## Year 6

### Knowledge, Skills and Understanding breakdown for Computing

Digital programming	Digital Making	Digital Skills
<p><b>Computational thinking:</b>            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><b>Coding:</b>            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</p> <p><b>Computer Networks:</b>            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><b>Presentations/eBooks:</b>            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><b>Animation:</b>            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><b>Video Creation:</b>            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><b>Digital Art:</b>            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><b>Sound:</b>            I can add voice over to images.            Create a remix of a popular song            I can edit sound clips to use in a film or radio broadcast (podcast)            I can compose a soundtrack that can be added to a film project.</p>	<p><b>Word Processing:</b>            I can confidently choose the best application to demonstrate my learning.            I can format text to suit a purpose.</p> <p><b>Data Handling:</b>            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.
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