

Computing End Points



Autumn 1



Year group	Topic	Expected outcomes- End points	Key Skills
Year 1	Technology Around Us - Introduction to Chromebooks	Log on to a Chromebook independently and use cursor to create a simple digital outcome I.e. digital painting / word processing	<ul style="list-style-type: none"> • To choose a piece of technology to do a job • To recognise that some technology can be used in different ways • To identify the main parts of a computer • To use a mouse in different ways
Year 2	Technology Around Us - Introduction to Chromebooks	Log on to a Chromebook independently and use cursor to create a simple digital outcome I.e. digital painting / word processing	<ul style="list-style-type: none"> • To choose a piece of technology to do a job • To recognise that some technology can be used in different ways • To identify the main parts of a computer • To use a mouse in different ways
Year 3	Connecting computers	<p>Learn about inputs, processes and outputs in digital devices.</p> <p>Explore the role of different devices in a network.</p> <p>Understand how networks can be connected to other networks.</p>	<ul style="list-style-type: none"> • To identify input and output devices. • To explain that a computer accepts an input and processes it to produce an output. • To explain how a computer network can be used to share information • To explain the role of a switch, server and wireless access point in a network. • To explain how networks can be connected to other networks.
Year 4	Technology around us	<p>Learn that the World Wide Web is part of the Internet.</p> <p>Explore the World Wide Web and evaluate online content to decide how honest, accurate and reliable it is.</p> <p>Understand the consequences of false information.</p>	<ul style="list-style-type: none"> • To describe how networks connect to other networks • To outline how information can be shared via the World Wide Web which is part of the internet.

Year 5	Computing systems and Network: Systems and searching	<p>Learn: Pupils consolidate their learning of computer systems. Learners consider small scale and large-scale systems. They explain the input, output, and process aspects of a variety of different real-world systems.</p> <p>Investigate: How information is found on the World Wide Web, through learning how search engines work.</p> <p>Evaluate: collaborative online project with other class members and develop their skills in working together online.</p>	
Yar 6	Internet communication	<p>Learn how we find information on the World Wide Web.</p> <p>Investigate different methods of communication, inc. Internet-based communication.</p> <p>Evaluate methods of Internet-based communication.</p>	

Autumn 2

Year group	Topic	Expected outcomes- End points	Key Skills
Year 1	Programming-Moving Robots	<p>Learn: algorithms are a set of clear, ordered instructions, and that a computer program is the implementation of an algorithm on a digital device.</p> <p>Investigate: giving instructions to each other to giving instructions to a robot by programming it. Using predictions of outcomes, as a introduction to coding.</p> <p>Evaluate: Task – what is needed Design – what it should do Code – how it is done Running the code – what it does</p>	
Year 2	Programming robot algorithms	<p>earn: Develop their understanding of instructions in sequences and the use of logical reasoning to predict outcomes. They will also learn about design in programming</p> <p>Investigate: . Learners will use given commands in different orders to investigate how the order affects the outcome</p>	

		Evaluate: develop artwork and test it for use in a program. They will design algorithms and then test those algorithms as programs and debug them.	
Year 3	Sequencing sounds	<p>Learn: a selection of motion, sound, and event blocks which they will use to create their own programs, featuring sequences</p> <p>Investigate: Explore the concept of sequencing in programming through Scratch</p> <p>Evaluate: Learner's understanding of sequences in a new programming language. Particularly the order of sequence and understanding design in programming.</p>	
Year 4	Repetition in shapes	<p>Learn: Learners will create programs by planning, modifying, and testing commands to create shapes and patterns.</p> <p>Investigate: They will use Logo, a text-based programming language, investigating sequence of commands in a programme.</p> <p>Evaluate: the sequence of commands in a program to using count-controlled loops. Pupils will create algorithms and then implement those algorithms as code.</p>	
Year 5	Creating media (Video production) and webpages	<p>Learn: Children will learn how to create short videos by working in pairs or groups. They will develop the skills of capturing, editing, and manipulating video</p> <p>Investigate: Storyboards, film angles and video editing.</p> <p>Evaluate: Their end video.</p> <p>Part 2: Lesson 4 – 6 Children will create surveys and present data. Add text to a web page and embed media and relevant hyperlinks.</p>	
Yar 6	Webpage creation	<p>Learn: Learners will be introduced to creating websites for a chosen purpose</p> <p>Investigate what makes a good web page and design and evaluate their own website. Learners pay specific attention to copyright and fair use of media, the aesthetics of the site, and navigation paths.</p> <p>Evaluate: Pupil Webpages and hyperlinks. understanding of the following: digital writing, digital painting, desktop publishing, digital photography, photo editing, and vector drawing.</p>	

Spring 1

Year group	Topic	Expected outcomes- End points	Key skills:
Year 1	Creating media: Digital writing	<p>Learn: A understanding of using computers to create and manipulate digital content, focussing on using a word processor.</p> <p>Investigate and develop their ability to find and use the keys on a keyboard in order to create digital content</p> <p>Evaluate: consider the differences between using a computer to create text, and writing text on paper. They will be able to explain which method they prefer and explain their reasoning for choosing this.</p>	<ul style="list-style-type: none"> • To use letter, number, and Space keys to enter text into a computer • To use punctuation and special characters • To select text • To use the Backspace key to remove text • To position the text cursor in a chosen location • To choose options to achieve a desired effect • To change the appearance of text on a computer
Year 2	Creating media – Creating digital music	<p>Learn: using a computer to create music</p> <p>Investigate: Listen to a variety of pieces of music and consider how music can make them think and feel</p> <p>Evaluate: Learners will look at patterns and purposefully create music</p>	<ul style="list-style-type: none"> • To experiment with musical patterns on a computer • To experiment with different sounds on a computer • To use a computer to create a musical pattern • To use a computer to play the same music in different ways (e.g. tempo) • To use a computer to compose a rhythm and a melody on a given theme • To evaluate and improve a musical composition created on a computer
Year 3	Creating media- Stop-frame animation	<p>Learn: To use a range of techniques to create a stop-frame animation using tablets</p> <p>Investigate: New skills to create a story-based animation</p> <p>Evaluate: adding other types of media to their animation, such as music and text.</p>	<ul style="list-style-type: none"> • To set up the work area with an awareness of what will be captured • To plan an animation storyboard • To capture an image • To use the onion skinning tool to review thw subject position • To review captured sequececs and improve frames. • To add media to enhance an animation
Year 4	Creating media- Photo editing (<i>Adobe creative cloud</i>)	<p>Learn: how digital images can be changed and edited, and how they can then be resaved and reused.</p> <p>Investigate: the impact that editing images can have, and evaluate the effectiveness of their choices:</p> <p>Evaluate: knowledge and understanding of digital photography and using digital devices to create media</p>	<ul style="list-style-type: none"> • To recognise that digital images can be manipulated • To recognise that images can be changed for different purposes • To use the most appropriate tool for a particular purpose • To recognise that not all images are real • To consider the impact of changes made on the quality of the image
Year 5	Physical Computing- Crumble kits	<p>Learn: use physical computing to explore the concept of selection in programming using the Crumble programming environment</p> <p>Investigate: microcontroller (Crumble controller) and learn how to connect and program it to control components (including output devices — LEDs and motors)</p>	<ul style="list-style-type: none"> • To apply formulas to data, including duplication • To use a condition in an 'if... then...' statement to produce a given outcome • To show that a condition can switch program flow in one of two ways • To use a condition in an 'if... then... else...' statement to produce given outcomes

		Evaluate: programming using a block-based language (eg Scratch) and understand the concepts of sequence and repetition.	
Year 6	Introduction to Spreadsheets	<p>Learn: the importance of formatting data to support calculations, while also being introduced to formulas and will begin to understand how they can be used to produce calculated data.</p> <p>Investigate: how to apply formulas that include a range of cells and apply formulas.</p> <p>Evaluate: their graphs and evaluate their results in comparison to asked questions.</p>	<ul style="list-style-type: none"> • To explain that objects/artifacts can be described using data • To explain that formulas can be used to produce calculated data • To recognise that data can be calculated using different operations • To recognise that changing inputs also changes outputs • To apply formulas to data, including duplication

Spring 2

Year group	Topic	Expected outcomes- End points
Year 1	<u>Data and information:</u> <u>Grouping data</u>	<p>Learn: This unit introduces pupils to data and information. They will begin by using labels to put objects into groups, and labelling these groups.</p> <p>Investigate: Pupils will demonstrate that they can count a small number of objects, before and after the objects are grouped. They will then begin to demonstrate their ability to sort objects into different groups, based on the properties they choose.</p> <p>Evaluate: their ability to sort objects into different groups to answer questions about data.</p>
Year 2	<u>Data and information:</u> <u>pictograms</u>	<p>Learn: Learners will begin to understand what data means and how this can be collected in the form of a tally chart. They will learn the term 'attribute' and use this to help them organise data.</p> <p>Investigate: presenting data in the form of pictograms and finally block diagrams.</p> <p>Evaluate: other ways to present data than using tally charts and pictograms. They will use a pre-made tally chart to create a block diagram on their device.</p>
Year 3	Programming events and actions (Scratch)	<p>Learn: the links between events and actions. Learners begin by moving a sprite in four directions (up, down, left, and right).</p> <p>Investigate: programming extensions, using Pen blocks, concluding with learners designing and coding their own maze-tracing program.</p> <p>Evaluate: their own code, features and design in a maze-based challenge.</p>
Year 4	Programming: Repetition in games	<p>Learn: about programming, with a specific focus on repetition in games. Explore in programming there are infinite loops and count-controlled loops.</p>

		<p>Investigate: p the use of count controlled loops, infinite loops, as well as developing a design that includes multiple loops and a project based around repetition.</p> <p>Evaluate: a design that includes two or more loops which run at the same time. Modify an infinite loop in a given program.</p>
Year 5	Data information: Flat file databases	<p>Learn: Pupils will explore the flat-file databases and how they can be used to organise data in records</p> <p>Investigate: tools within a database to order and answer questions about data. They will create graphs and charts from their data to help solve problems.</p> <p>Evaluate: How computer programs can be used to compare data visually. Use and evaluate a real-world database to answer questions.</p>
Yar 6	Programming: variables	<p>Learn: Children develop their block-based programming language using scratch. Pupils will explore the concept of variables in programming through games in Scratch. Pupils will use variables to create a simulation of a scoreboard.</p> <p>Investigate: Pupils will follow the Use-Modify-Create model, experimenting with variables in an existing project, then modify them, then they will create their own project.</p> <p>Evaluate: They consider how they could improve their own projects and make small changes to achieve this</p>

Summer 1

Year group	Topic	Expected outcomes- End points
Year 1	Computing Systems Digital Painting (linked to Art)	<p>Learn: Explore the world of digital art and its exciting range of creative tools with your learners.</p> <p>Investigate: Empower them to create their own paintings, while getting inspiration from a range of other artists.</p> <p>Evaluate: to consider their preferences when painting with, and without, the use of digital devices.</p>
Year 2	Creating Media Digital Photography	<p>Learn: Learners will learn to recognise that different devices can be used to capture photographs_</p> <p>Investigate: capturing, editing, and improving photos.</p> <p>Evaluate: Their knowledge to recognise that images they see may not be real.</p>
Year 3	Creating Media Desktop Publishing	<p>Learn: to use desktop publishing software and consider careful choices of font size, colour and type to edit and improve premade documents.</p> <p>Investigate: Learners will be making their own template for a magazine front cover, adding text and images to create their own pieces of work using desktop publishing software.</p> <p>Evaluate: how different layouts can suit different purposes. Pupils will also consider the benefits of desktop publishing.</p>

Year 4	Creating Media Audio Editing for Podcasts (Link to Science and Literacy)	<p>Learn: , pupils will identify the input device (microphone) and output devices (speaker or headphones) required to work with sound digitally.</p> <p>Investigate: Learners will discuss the ownership of digital audio and the copyright implications of duplicating the work of others. In order to record audio themselves, learners will use Audacity to produce a podcast, which will include editing their work, adding multiple tracks, and opening and saving the audio files.</p> <p>Evaluate: evaluate the effective use of audio</p>
Year 5	Creating Media Vector drawings	<p>Learn: , pupils begin to create vector drawings. They learn how to use different drawing tools to help them create images. Learners recognise that images in vector drawings are created using shapes and lines, and each individual element in the drawing is called an object.</p> <p>Investigate: layering their objects and begin grouping and duplicating them to support the creation of more complex pieces of work.</p> <p>Evaluate: They reflect on the skills they have used to create the vector drawing and think about why they used the skills they did. Learners then begin to compare vector drawings to freehand paint program drawings</p>
Year 6	Creating Media 3-D Modelling	<p>Learn: Learners will develop their knowledge and understanding of using a computer to produce 3D models. Learners will initially familiarise themselves with working in a 3D space, moving, resizing, and duplicating objects.</p> <p>Investigate: Creating hollow objects using placeholders and combine multiple objects to create a model of a desk tidy.</p> <p>Evaluate: learners will examine the benefits of grouping and ungrouping 3D objects, then go on to plan, develop, and evaluate their own 3D model of a building.</p>

Summer 2:

Year group	Topic	Expected outcomes- End points
Year 1	Programming Animated Stories	<p>Learn: Learners will develop their understanding of the various aspects of using a computer to create and manipulate text. They will become more familiar with using a keyboard and mouse to enter and remove text.</p> <p>Investigate: how to change the look of their text, and will be able to justify their reasoning in making these changes. Finally, learners will consider the differences between using a computer to create text, and writing text on paper.</p>

		Evaluate: their reasoning and explanation to which method they prefer.
Year 2	Programming Programming Quizzes	<p>Learn: understand that sequences of commands have an outcome, and make predictions based on their learning.</p> <p>Investigate: They use and modify designs to create their own quiz questions in ScratchJr, and realise these designs in ScratchJr using blocks of code.</p> <p>Evaluate: learners evaluate their work and make improvements to their programming projects.</p>
Year 3	Data and Information Branching Databases (Link to Geography)	<p>Learn: Throughout this unit, pupils will develop their understanding of what a branching database is and how to create one</p> <p>Investigate: Learners will create physical and on-screen branching databases. To conclude the unit, they will create an identification tool using a branching database.</p> <p>Evaluate: They will test if their database works, considering real-world applications for branching databases.</p>
Year 4	Data and Information Data-loggers	<p>Learn: pupils will consider how and why data is collected over time, considering the senses that humans use to experience the environment and how computers can use special input devices called sensors to monitor the environment.</p> <p>Investigate: Learners will collect data as well as access data captured over long periods of time. They will look at data points, data sets, and logging intervals.</p> <p>Evaluate: Pupils will spend time using a computer to review and analyse data. Towards the end of the unit, pupils will pose questions and then use data loggers to automatically collect the data needed to answer those questions.</p>
Year 5	Data and Information Flat-file Databases	<p>Learn: Pupils will explore the flat-file databases and how they can be used to organise data in records.</p> <p>Investigate: Learners will use tools within a database to order and answer questions about data. They will create graphs and charts from their data to help solve problems.</p> <p>Evaluate: They use a real-life database to answer a question, and present their work to others.</p>
Year 6	Programming Sensing Micro:bits	<p>Learn: Pupils will learn how to use a physical device — the micro:bit. The unit begins with a simple program for pupils to build in and test within the new programming environment, before transferring it to their micro:bit.</p> <p>Investigate: Pupils then take on three new projects in Lessons 2, 3, and 4, with each lesson adding more depth.</p>



		Evaluate: Pupil knowledge of the programming constructs and use their design to create their own micro:bit-based step counter.
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