

# Computing Curriculum Overview

## Year 5

Term	Computing Topic	Knowledge and understanding	What I will know and remember	Vocabulary
<p><b>Online Safety KS2:</b> Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</p>				
<p><b>1</b></p>	<p><b>Unit 5.1 - Computing systems and networks - Sharing information creating media</b></p>	<p>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. 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. 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 presenting data and information. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour;</p>	<p>I can explain that systems are built using a number of parts. I can describe that a computer system features inputs, processes, and outputs. I can explain that computer systems communicate with other devices. I can identify tasks that are managed by computer systems. I can identify the human elements of a computer system. I can explain the benefits of a given computer system. I can recognise that data is transferred using agreed methods . I can explain that networked digital devices have unique addresses. I can explain that data is transferred over networks in packets. I can recognise that connected digital devices can allow us to access shared files stored online. I can send information over the internet in different ways.</p>	<p>Collaboration Packet Protocol Remix Reuse Slide deck System</p>

		<p>identify a range of ways to report concerns about content and contact.</p>	<p>I can explain that the internet allows different media to be shared.</p> <p>I can suggest strategies to ensure successful group work.</p> <p>I can make thoughtful suggestions on my group's work.</p> <p>I can compare working online with working offline.</p> <p>I can identify different ways of working together online.</p> <p>I can recognise that working together on the internet can be public or private.</p> <p>I can explain how the internet enables effective collaboration.</p>	
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**Online Safety: Self Image and Identity**  
(Education For A Connected World)

<b><u>End of unit assessment</u></b>			
<b><u>Working towards</u></b>	<b><u>Working at</u></b>	<b><u>Working above</u></b>	

<b>2</b>	<p><b>Unit 5.5 - Programming A - Selection in Physical Computing</b></p>	<p>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.</p>	<p>I can build a simple circuit to connect a microcontroller to a computer.</p> <p>I can program a microcontroller to light an LED.</p> <p>I can explain why I used an infinite loop.</p> <p>I can connect more than one output device to a microcontroller.</p> <p>I can design sequences for given output devices.</p>	<p>Components</p> <p>Crumble controller</p> <p>battery box</p> <p>Crocodile clips</p> <p>LED</p> <p>Microcontroller</p>
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		<p>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.</p> <p><b><u>Science - Electricity (Year 4)</u></b> Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</p>	<p>I can decide which output devices I control with a count controlled loop. I can explain that a condition is something that can either be true or false (e.g. whether a value is more than 10, or whether a button has been pressed). I can experiment with a do until loop. I can program a microcontroller to respond to an input. I can explain a condition being met can start an action. I can identify a condition and an action in my project. I can use selection (an if... then... statement) to direct the flow of a program. I can identify a condition to start an action (real world). I can describe what my project will do (the task). I can create a detailed drawing of my project. I can write an algorithm to control lights and a motor. I can use selection to produce an intended outcome. I can test and debug my project.</p>	<p>Motor Output devices</p>
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**Online Safety:** Online Relationships  
(Education For A Connected World)

<u>Working towards</u>	<u>End of unit assessment</u> <u>Working at</u>	<u>Working above</u>
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<p><b>3</b></p>	<p><b>Unit 5.4 - Data and Information - Flat File Databases</b></p>	<p>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 presenting data and information.</p>	<p>I can create multiple questions about the same field.  I can explain how information can be recorded.  I can order, sort, and group my data cards.  I can navigate a flat-file database to compare different views of information.  I can explain what a 'field' and a 'record' is in a database.  I can choose which field to sort data by to answer a given question.  I can explain how information can be grouped.  I can group information to answer questions.  I can combine grouping and sorting to answer more specific questions.  I can choose which field and value are required to answer a given question.  I can outline how 'AND' and 'OR' can be used to refine data selection.  I can choose multiple criteria to answer a given question.  I can select an appropriate chart to visually compare data.  I can refine a chart by selecting a particular filter.  I can explain the benefits of using a computer to create graphs.  I can ask questions that will need more than one field to answer.  I can refine a search in a real-world context.</p>	<p>Axis  Criteria  Chart  Filter  Graph  Presentation</p>

			I can present my findings to a group.	
<b>Online Safety:</b> Online Reputation & Online Bullying (Education For A Connected World)				
<b><u>End of unit assessment</u></b>				
	<b><u>Working towards</u></b>		<b><u>Working at</u></b>	<b><u>Working above</u></b>
<b>4</b>	<b>Unit 5.2 - Creating media - Vector drawing</b>	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 presenting data and information.	<p>I can recognise that vector drawings are made using shapes.</p> <p>I can identify the main drawing tools.</p> <p>I can discuss how a vector drawing is different from paper-based drawings.</p> <p>I can identify the shapes used to make a vector drawing.</p> <p>I can explain that each element added to a vector drawing is an object.</p> <p>I can move, resize, and rotate objects I have duplicated.</p> <p>I can use the zoom tool to help me add detail to my drawings.</p> <p>I can explain how alignment grids and resize handles can be used to improve consistency.</p> <p>I can modify objects to create different effects.</p> <p>I can identify that each added object creates a new</p>	<p>Alignment grid</p> <p>Consistency</p> <p>Group/ungroup</p> <p>Handles</p> <p>Icons</p> <p>Resize</p> <p>Toolbar</p> <p>Vector</p> <p>Vector drawing</p> <p>Zoom</p>

			<p>layer in the drawing.</p> <p>I can identify which objects are in the front layer or in the back layer of a drawing.</p> <p>I can change the order of layers in a vector drawing.</p> <p>I can copy part of a drawing by duplicating several objects.</p> <p>I can group to create a single object.</p> <p>I can reuse a group of objects to further develop my vector drawing.</p> <p>I create alternatives to vector drawings.</p> <p>I can suggest improvements to a vector drawing.</p> <p>I can apply what I have learned about vector drawings.</p>	
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**Online Safety:** Managing Online Information  
(Education For A Connected World)

<b><u>Working towards</u></b>		<b><u>End of unit assessment</u></b>		<b><u>Working above</u></b>	
		<b><u>Working at</u></b>			

<b>5</b>	<b>Unit 5.6 - Programming B - Selection in Quizzes</b>	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.	<p>I can recall how conditions are used in selection.</p> <p>I can identify conditions in a program.</p> <p>I can modify a condition in a program.</p> <p>I can use selection in an infinite loop to check a condition.</p>	<p>Condition</p> <p>Conditional statement</p> <p>Constructive</p>
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		<p>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.</p>	<p>I can identify the condition and outcomes in an if..then... else statement.  I can create a program with different outcomes using selection.  I can explain that program flow can branch according to a condition.  I can design the flow of a program which contains if... then... else...  I can show that a condition can direct program flow in one of two ways.  I can outline a given task.  I can use a design format to outline my project..  I can identify the outcome of user input in an algorithm.  I can implement my algorithm to create the first section of my program.  I can test my program.  I can share my program with others.  I can identify ways the program could be improved.  I can identify what setup code my project needs.  I can extend my program further</p>	<p>Implement Outcome Selection</p>
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**Online Safety:** Health, Wellbeing and Lifestyle  
(Education For A Connected World)

Working towards

End of unit assessment  
Working at

Working above

<p>6</p>	<p><b>Unit 5.3 - Creating media - Video editing</b></p>	<p>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 presenting data and information.</p>	<p>I can explain that a video can include both visual and audio media.  I can explain the benefits of adding audio to a video.  I can plan a video project using a storyboard.  I can identify and name digital devices that can record video and sound.  I can choose the most suitable digital device for recording my project.  I can locate and identify the working features of a digital device that can record video.  I can select a suitable device and software to capture my video.  I can demonstrate suitable methods of using a digital device to capture my video.  I can demonstrate the safe use and handling of devices.  I can list some of the features of an effective video.  I can record a video that demonstrates some of the features of an effective video.  I can explain why lighting and angle are important in creating an effective video.  I can store, retrieve, and export my recording to a computer.  I can explain how to improve a video by reshooting and editing.  I can select the correct tools to make edits to my video.</p>	<p>AV (audiovisual)  Camera angle  Capture  Dialogue  End credits  Microsoft Movie Maker  Retake  Script  Soundtrack  Split  Storage  Storyboard  Transitions  Trim/clip  Videographer  Video techniques: Zoom, pan, tilt, angle.  YouTuber  Zoom</p>
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			<p>I can make edits to my video and improve the final outcome.</p> <p>I can recognise that my choices when making a video will impact on the quality of the final outcome.</p> <p>I can evaluate my video and share my opinions.</p>	
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**Online Safety:** Privacy and Security & Copyright and Ownership  
(Education For A Connected World)

<u>Working towards</u>	<u>End of unit assessment</u>	<u>Working at</u>	<u>Working above</u>
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