

## Year 5 Computing Medium Term Planning

Year 5	Information Technology	Digital Literacy/e-Safety	Computer Science
<p style="text-align: center;"><b>Autumn 1</b></p> <p><b>Link to further resources:</b></p> <p><a href="#"><u>Computing systems and networks</u></a> <i>Sharing information</i></p> <p><b>Apps/Programs/Activities:</b> <b>The Internet</b></p> <p><b>Unplugged activities</b></p>	<ul style="list-style-type: none"> <li>● Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</li> <li>● 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.</li> </ul>	<ul style="list-style-type: none"> <li>● Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> </ul>	
	Key Skills/Knowledge	Key Skills/Knowledge	Key Skills/Knowledge
	<ul style="list-style-type: none"> <li>● I can explain that systems are built using a number of parts.</li> <li>● I can describe that a computer system features inputs, processes, and outputs.</li> <li>● I can explain that computer systems communicate with other devices.</li> <li>● I can identify tasks that are managed by computer systems.</li> <li>● I can identify the human elements of a computer system.</li> <li>● I can explain the benefits of a given computer system.</li> </ul>	<ul style="list-style-type: none"> <li>● I can use technology safely and respectfully.</li> <li>● I can keep my personal login information safe.</li> <li>● I can keep my personal details private.</li> <li>● I can access apps, programs and devices using personal login information.</li> <li>● I can work independently on projects.</li> <li>● I can collaborate with my peers to complete projects.</li> </ul>	

- 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.
- I can explain that the internet allows different media to be shared.
- I can suggest strategies to ensure successful group work.
- I can make thoughtful suggestions on my group's work.
- I can compare working online with working offline.
- I can identify different ways of working together online.
- I can recognise that working together on the internet can be public or private.
- I can explain how the internet enables effective collaboration.

<p><b>Autumn 2</b></p> <p><b>Link to further resources:</b></p> <p><a href="#">Creating media</a> <i>Vector drawing</i></p> <p><b>Apps/Programs:</b> Google Draw</p>	<ul style="list-style-type: none"> <li>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</li> </ul>	<ul style="list-style-type: none"> <li>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> </ul>	
	<p><b>Key Skills/Knowledge</b></p>	<p><b>Key Skills/Knowledge</b></p>	<p><b>Key Skills/Knowledge</b></p>
	<ul style="list-style-type: none"> <li>I can recognise that vector drawings are made using shapes.</li> <li>I can experiment with the shape and line tools.</li> <li>I can discuss how vector drawings are different from paper-based drawings.</li> <li>I can identify the shapes used to make a vector drawing.</li> <li>I can explain that each element added to a vector drawing is an object.</li> <li>I can move, resize, and rotate objects I have duplicated.</li> <li>I can use the zoom tool to help me add detail to my drawings.</li> </ul>	<ul style="list-style-type: none"> <li>I can use technology safely and respectfully.</li> <li>I can keep my personal login information safe.</li> <li>I can keep my personal details private.</li> <li>I can access apps, programs and devices using personal login information.</li> <li>I can use Google Draw tools.</li> </ul>	

	<ul style="list-style-type: none"> <li>• I can explain how alignment grids and resize handles can be used to improve consistency.</li> <li>• I can modify objects to create a new image.</li> <li>• I can identify that each added object creates a new layer in the drawing.</li> <li>• I can change the order of layers in a vector drawing.</li> <li>• I can use layering to create an image.</li> <li>• I can copy part of a drawing by duplicating several objects.</li> <li>• I can recognise when I need to group and ungroup objects.</li> <li>• I can reuse a group of objects to further develop my vector drawing.</li> <li>• I can create a vector drawing for a specific purpose.</li> <li>• I can reflect on the skills I have used and why I have used them.</li> <li>• I can compare vector drawings to freehand paint drawings.</li> </ul>		
<p><b>Spring 1</b></p> <p><b>Link to further resources:</b></p> <p><a href="#">Creating media</a> <i>Video editing</i></p>	<ul style="list-style-type: none"> <li>• 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</li> </ul>	<ul style="list-style-type: none"> <li>• Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of</li> </ul>	

<b>Apps/Programs:</b>  <b>Moviemaker</b>  <b>iMovie</b>	<p>accomplish given goals, including collecting, analysing, evaluating and presenting data and information</p>	<p>ways to report concerns about content and contact.</p>	
	<p><b>Key Skills/Knowledge</b></p>	<p><b>Key Skills/Knowledge</b></p>	<p><b>Key Skills/Knowledge</b></p>
	<ul style="list-style-type: none"> <li>● I can explain that video is a visual media format.</li> <li>● I can identify features of videos.</li> <li>● I can compare features in different videos.</li> <li>● I can identify and find features on a digital video recording device.</li> <li>● I can experiment with different camera angles.</li> <li>● I can make use of a microphone. I can suggest filming techniques for a given purpose.</li> <li>● I can capture video using a range of filming techniques.</li> <li>● I can review how effective my video is.</li> <li>● I can outline the scenes of my video.</li> <li>● I can decide which filming techniques I will use.</li> <li>● I can create and save video content.</li> <li>● I can store, retrieve, and export my recording to a computer.</li> <li>● I can explain how to improve a video by reshooting and editing.</li> </ul>	<ul style="list-style-type: none"> <li>● I can use technology safely and respectfully.</li> <li>● I can keep my personal login information safe.</li> <li>● I can keep my personal details private.</li> <li>● I can access apps, programs and devices using personal login information.</li> <li>● I recognise that videos on the internet have been made by people.</li> <li>● I understand that not every video that I see will be 'real'.</li> </ul>	

	<ul style="list-style-type: none"> <li>• I can select the correct tools to make edits to my video.</li> <li>• I can make edits to my video and improve the final outcome.</li> <li>• I can recognise that my choices when making a video will impact the quality of the final outcome.</li> <li>• I can evaluate my video and share my opinions.</li> </ul>		
<p><b>Spring 2</b></p> <p><b>Link to further resources:</b></p> <p><a href="#">Data and information Flat-file databases</a></p> <p><b>Apps/Programs:</b></p> <p><b>J2E</b></p> <p><b>Google Sheets</b></p>	<ul style="list-style-type: none"> <li>• 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</li> </ul>	<ul style="list-style-type: none"> <li>• Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> </ul>	
	<p><b>Key Skills/Knowledge</b></p>	<p><b>Key Skills/Knowledge</b></p>	<p><b>Key Skills/Knowledge</b></p>
	<ul style="list-style-type: none"> <li>• I can create multiple questions about the same field.</li> <li>• I can explain how information can be recorded.</li> <li>• I can order, sort, and group my data cards.</li> <li>• I can navigate a flat-file database to compare different views of information.</li> <li>• I can explain what a 'field' and a 'record' is in a database.</li> </ul>	<ul style="list-style-type: none"> <li>• I can use technology safely and respectfully.</li> <li>• I can keep my personal login information safe.</li> <li>• I can keep my personal details private.</li> <li>• I can access apps, programs and devices using personal login information.</li> </ul>	

	<ul style="list-style-type: none"> <li>• I can choose which field to sort data by to answer a given question.</li> <li>• I can explain how information can be grouped.</li> <li>• I can group information to answer questions.</li> <li>• I can combine grouping and sorting to answer more specific questions.</li> <li>• I can choose which field and value are required to answer a given question.</li> <li>• I can outline how 'AND' and 'OR' can be used to refine data selection.</li> <li>• I can choose multiple criteria to answer a given question.</li> <li>• I can select an appropriate chart to visually compare data.</li> <li>• I can refine a chart by selecting a particular filter.</li> <li>• I can explain the benefits of using a computer to create graphs.</li> <li>• I can ask questions that will need more than one field to answer.</li> <li>• I can refine a search in a real-world context.</li> <li>• I can present my findings to a group.</li> </ul>	<ul style="list-style-type: none"> <li>• I can use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</li> <li>• I can 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.</li> </ul>	
<p><b>Summer 1</b></p> <p><b>Link to further resources:</b></p>		<ul style="list-style-type: none"> <li>• Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable</li> </ul>	<ul style="list-style-type: none"> <li>• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical</li> </ul>

<p><b>Programming A</b> <i>Selection in physical computing</i></p> <p><b>Apps/Programs/Hardware</b></p> <p><b>Crumble Controllers (loan)</b></p> <p><b>Scratch 3.0</b></p> <p><b>Sphero (trip)</b></p> <p><b>LEGO Mindstorm</b></p>		<p>behaviour; identify a range of ways to report concerns about content and contact.</p>	<p>systems; solve problems by decomposing them into smaller parts.</p> <ul style="list-style-type: none"> <li>● Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.</li> <li>● Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</li> </ul>
	<p><b>Key Skills/Knowledge</b></p>	<p><b>Key Skills/Knowledge</b></p>	<p><b>Key Skills/Knowledge</b></p>
		<ul style="list-style-type: none"> <li>● I can use technology safely and respectfully.</li> <li>● I can keep my personal login information safe.</li> <li>● I can keep my personal details private.</li> <li>● I can access apps, programs and devices using personal login information.</li> <li>● I can use a Crumble Controller as an output device on a computer.</li> </ul>	<ul style="list-style-type: none"> <li>● I can create a simple circuit and connect it to a microcontroller.</li> <li>● I can program a microcontroller to make an LED switch on.</li> <li>● I can explain what an infinite loop does.</li> <li>● I can connect more than one output component to a microcontroller.</li> <li>● I can use a count-controlled loop to control outputs.</li> <li>● I can design sequences that use count-controlled loops.</li> <li>● I can explain that a condition is either true or false.</li> <li>● I can design a conditional loop</li> </ul>

			<ul style="list-style-type: none"> <li>• I can program a microcontroller to respond to an input.</li> <li>• I can explain that a condition being met can start an action.</li> <li>• I can identify a condition and an action in my project.</li> <li>• I can use selection (an 'if...then...' statement) to direct the flow of a program.</li> <li>• I can identify a real-world example of a condition starting an action.</li> <li>• I can describe what my project will do.</li> <li>• I can create a detailed drawing of my project.</li> <li>• I can write an algorithm that describes what my model will do.</li> <li>• I can use selection to produce an intended outcome.</li> <li>• I can test and debug my project.</li> </ul>
<p><b>Summer 2</b></p> <p><b>Link to further resources:</b></p> <p><a href="#">Programming B</a> <i>Selection in quizzes</i></p> <p><b>Apps/Programs:</b></p> <p>Scratch 3.0</p>		<ul style="list-style-type: none"> <li>• Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> </ul>	<ul style="list-style-type: none"> <li>• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.</li> </ul>

			<ul style="list-style-type: none"> <li>• Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.</li> <li>• Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</li> </ul>
	<b>Key Skills/Knowledge</b>	<b>Key Skills/Knowledge</b>	<b>Key Skills/Knowledge</b>
		<ul style="list-style-type: none"> <li>• I can use technology safely and respectfully.</li> <li>• I can keep my personal login information safe.</li> <li>• I can keep my personal details private.</li> <li>• I can access apps, programs and devices using personal login information.</li> <li>• I can make an independent Scratch 3.0 project.</li> <li>• I can work collaboratively on a Scratch 3.0 project.</li> </ul>	<ul style="list-style-type: none"> <li>• I can recall how conditions are used in selection.</li> <li>• I can identify conditions in a program.</li> <li>• I can modify a condition in a program.</li> <li>• I can use selection in an infinite loop to check a condition.</li> <li>• I can identify the condition and outcomes in an 'if... then... else...' statement.</li> <li>• I can create a program that uses selection to produce different outcomes.</li> <li>• I can explain that program flow can branch according to a condition.</li> <li>• I can design the flow of a program that contains 'if... then... else...'.</li> </ul>

			<ul style="list-style-type: none"> <li>● I can show that a condition can direct program flow in one of two ways.</li> <li>● I can outline a given task.</li> <li>● I can use a design format to outline my project.</li> <li>● I can identify the outcome of user input in an algorithm.</li>   <li>● I can implement my algorithm to create the first section of my program.</li> <li>● I can test my program.</li> <li>● I can share my program with others.</li> <li>● I can identify ways the program could be improved.</li> <li>● I can identify the setup code I need in my program.</li> <li>● I can extend my program further.</li> </ul>
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<b>GDS Opportunities</b>	<ul style="list-style-type: none"> <li>• Children make a multimedia presentation that contains: sound; animation; video and buttons to navigate.</li> <li>• Children save an image document as a gif or jpeg. file format using the 'save as' command.</li> <li>• Children make an information poster using graphics skills to good effect.</li> </ul>
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