

## Computing - Teaching Sequence 2023-24

Year 5		
Lesson	Autumn 2 - Computer Systems	Autumn 2 - Vector Drawing
1	<p>To explain that computers can be connected together to form systems</p> <ul style="list-style-type: none"> <li>● I can explain that systems are built using a number of parts</li> <li>● I can describe the input, process, and output of a digital system</li> <li>● I can explain that computer systems communicate with other devices</li> </ul>	<p>To identify that drawing tools can be used to produce different outcomes</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> </ul>
2	<p>To recognise the role of computer systems in our lives</p> <ul style="list-style-type: none"> <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>	<p>To create a vector drawing by combining shapes</p> <ul style="list-style-type: none"> <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> </ul>
3	<p>To experiment with search engines</p> <ul style="list-style-type: none"> <li>● I can make use of a web search to find specific information</li> <li>● I can refine my web search</li> <li>● I can compare results from different search engines</li> </ul>	<p>To use tools to achieve a desired effect</p> <ul style="list-style-type: none"> <li>● I can use the zoom tool to help me add detail to my drawings</li> <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> </ul>
4	<p>To describe how search engines select results</p> <ul style="list-style-type: none"> <li>● I can explain why we need tools to find things online</li> <li>● I can recognise the role of web crawlers in creating an index</li> <li>● I can relate a search term to the search engine's index</li> </ul>	<p>To recognise that vector drawings consist of layers of objects</p> <ul style="list-style-type: none"> <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> </ul>
5	<p>To explain how search results are ranked</p> <ul style="list-style-type: none"> <li>● I can order a list by rank</li> <li>● I can explain that a search engine follows rules to rank results</li> </ul>	<p>To group objects to make them easier to work with</p> <ul style="list-style-type: none"> <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> </ul>

	<ul style="list-style-type: none"> <li>I can give examples of criteria used by search engines to rank results</li> </ul>	<ul style="list-style-type: none"> <li>I can reuse a group of objects to further develop my vector drawing</li> </ul>
6	<p>To recognise why the order of results is important, and to whom</p> <ul style="list-style-type: none"> <li>I can describe some of the ways that search results can be influenced</li> <li>I can recognise some of the limitations of search engines</li> <li>I can explain how search engines make money</li> </ul>	<p>To apply what I have learned about vector drawings</p> <ul style="list-style-type: none"> <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 program drawings</li> </ul>
	<p>Spring 1 - Selection in Physical Computing</p>	<p>Spring 2 - Flat File Databases</p>
1	<p>To control a simple circuit connected to a computer</p> <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> </ul>	<p>To use a form to record information</p> <ul style="list-style-type: none"> <li>I can create a database using cards</li> <li>I can explain how information can be recorded</li> <li>I can order, sort, and group my data cards</li> </ul>
2	<p>To write a program that includes count-controlled loops</p> <ul style="list-style-type: none"> <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> </ul>	<p>To compare paper and computer-based databases</p> <ul style="list-style-type: none"> <li>I can explain what a field and a record is in a database</li> <li>I can navigate a flat-file database to compare different views of information</li> <li>I can choose which field to sort data by to answer a given question</li> </ul>
3	<p>To explain that a loop can stop when a condition is met</p> <ul style="list-style-type: none"> <li>I can explain that a condition is either true or false</li> <li>I can design a conditional loop</li> <li>I can program a microcontroller to respond to an input</li> </ul>	<p>To outline how you can answer questions by grouping and then sorting data</p> <ul style="list-style-type: none"> <li>I can explain that data can be grouped using chosen values</li> <li>I can group information using a database</li> <li>I can combine grouping and sorting to answer specific questions</li> </ul>
4	<p>To explain that a loop can be used to repeatedly check whether a condition has been met</p> <ul style="list-style-type: none"> <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> </ul>	<p>To explain that tools can be used to select specific data</p> <ul style="list-style-type: none"> <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> </ul>
5	<p>To design a physical project that includes selection</p>	<p>To explain that computer programs can be used to compare data</p>

	<ul style="list-style-type: none"> <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> </ul>	visually <ul style="list-style-type: none"> <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 charts</li> </ul>
6	To create a program that controls a physical computing project <ul style="list-style-type: none"> <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>	To use a real-world database to answer questions <ul style="list-style-type: none"> <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>
	<b>Summer 1 - Video Editing</b>	<b>Summer 2 Selection in Quizzes</b>
1	To explain what makes a video effective <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> </ul>	To explain how selection is used in computer programs <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> </ul>
2	To use a digital device to record video <ul style="list-style-type: none"> <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 recognise camera angles in a video</li> </ul>	To relate that a conditional statement connects a condition to an outcome <ul style="list-style-type: none"> <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> </ul>
3	To capture video using a range of techniques <ul style="list-style-type: none"> <li>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> </ul>	To explain how selection directs the flow of a program <ul style="list-style-type: none"> <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> <li>I can show that a condition can direct program flow in one of two ways</li> </ul>
4	To create a storyboard <ul style="list-style-type: none"> <li>I can outline the scenes of my video</li> <li>I can decide which filming techniques I will use</li> </ul>	To design a program that uses selection <ul style="list-style-type: none"> <li>I can outline a given task</li> <li>I can use a design format to outline my project</li> </ul>

	<ul style="list-style-type: none"> <li>I can create and save video content</li> </ul>	<ul style="list-style-type: none"> <li>I can identify the outcome of user input in an algorithm</li> </ul>
5	<p>To identify that video can be improved through reshooting and editing</p> <ul style="list-style-type: none"> <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> <li>I can select the correct tools to make edits to my video</li> </ul>	<p>To create a program that uses selection</p> <ul style="list-style-type: none"> <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> </ul>
6	<p>To consider the impact of the choices made when making and sharing a video</p> <ul style="list-style-type: none"> <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>To evaluate my program</p> <ul style="list-style-type: none"> <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>