



**Year 8  
Spring Term**

**Pathway 2/3/4**

**Subject: Design Technology (Electronics)  
Design and make a Wire loop steady hand game**

**Learning Intention: Electronics and materials** This Unit will re-introduce students to electronic components and build on yr 7 in the way they can be used to form a circuit and the development of soldering skills and design.

**Key knowledge that should be learned during this SoW**

All (Pathway 2)

Most (Pathway 3)

Some (Pathway 4)

**Concept:**

To understand the health and safety rules relating to electronics.  
  
To learn about electronic components and how a circuit works in DC to control a game . By making examples of circuits with components. To achieve this students will design and make a wire loop steady hand game with a theme and their own wire design and background.

**Knowledge:**

<p>All students should be able to understand the health and safety rules relating to soldering .</p> <p>All students will be able to use the new tools safely for this project</p> <p>All students will make at least 2 design of their background and wire shape</p> <p>All students will learn about the</p>	<p>Most students will be able to understand the health and safety rules for soldering</p> <p>Most Students will be able to use and name the new tools safely.</p> <p>Most students will be able to make 3 design ideas for their background and wire shapes.</p> <p>Most students will learn about</p>	<p>Some students can understand health and safety rules for soldering and the theory of soldering.</p> <p>Some Students will be able to use and name what each new tool is used for including safety procedures independently.</p> <p>Some students will draw 4 design ideas for their background and wire shape and give reasons for there</p>
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	<p>electronic components. And how to make a circuit to control the game with support.</p> <p>All students will be able to construct the frame for the game and do the designs.with support</p> <p>All students will solder the components with complete support.</p> <p>All students should be able to make a completed game.with support</p>	<p>electronic components needed for the wire loop game and how and why they are used in the circuit .</p> <p>Students will be able to cut out the parts to make the frame with some assistance.</p> <p>Most students will be able to assemble the game and solder with little support.</p>	<p>choice.</p> <p>Some students will learn about electronic components and name the ones needed for the wire loop game and how to assemble them and add extra components to the circuit such as an LED.</p> <p>Some students will be able to mark out and cut the frame for the game independently and fix the circuit to it .</p> <p>Some students may be able to solder independently.</p>
<p><b>Key Skills:</b></p>	<p>To know how to use a soldering iron safely.</p> <p>To know the names of the electronic components and makeworking circuit.</p> <p>To know the names of some of the other different tools to be used for the project.</p> <p>To be able to bend the wire safely.</p> <p>Be able to assemble circuit using mechanical blocks</p>	<p>To know all the main safety rules for the using a soldering iron</p> <p>To know the names and what the electronic components do and make a circuit with a switch for the game that works..</p> <p>To know the names of the new tools for this project and what they are used for and any special safety rules.</p> <p>To know how to bend the wire using pliers.</p> <p>To assemble the game wood frame</p>	<p>To know all the main safety rules for the using a soldering iron and the composition of solder</p> <p>To know the names and what the electronic components do and make a circuit with a switch for the game that works and experiment with an LED as well as Buzzer</p> <p>To know the names of the new tools for this project and what they are used for and any special safety rules.</p> <p>To know how to bend the wire using</p>

	To assemble frame in wood with PVA	and using solder or mechanical blocks.	pliers and the lop using a former.  To assemble the game wooden frame and circuit using solder
<b>Language and/or communication skills:</b>	Apron ,goggles, hard shoes, ear defenders.  Coping saw, bench hook,G clamp, screwdriver vice steel ruler cordless drill.Soldering Iron pliers	Electronic components  Motor,wires,eccentric cam ,batteries,battery pack,screws, motor clip ,connector bar. Wires LED resistor,connector blocks.	Pine MDF Copper or brass wire lead free solder.
<b>Curricular Links</b>	Links to other learning within the subject are: Science ,maths		