



## Design and Technology - Electrical Systems

| Year | Product                    | vocabulary                                                                                                                                                                                                                                                           | Skills spiral                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Knowledge spiral                                                                                                                                                                                                                                                                                                                                                                                                                           | Famous Technologists/cooks | Assessment - (pre and post) |
|------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------------|
| Y4   | Illuminated, flashing sign | <p>series circuit, LED, fault, connection, push switch, battery, battery holder, bulb, USB cable, wire, crocodile clip</p> <p>control, program, algorithm</p> <p>user, purpose, function, design criteria, innovative, appealing, design brief, annotated sketch</p> | <p>Generate, develop, model and communicate realistic ideas through discussion. Order the main stages of making.</p> <p>Select from and use tools and equipment to cut, shape and finish with some accuracy.</p> <p>Connect simple electrical components and a battery in a series circuit to achieve a functional outcome.</p> <p>Program a standalone control box to enhance the way the product works.</p> <p>Evaluate ideas and products against their own design criteria.</p> | <p>Gather information about users' needs and wants, and develop design criteria that are fit for purpose.</p> <p>Investigate and analyse a range of existing battery powered products.</p> <p>Know that Thomas Edison was an American inventor and entrepreneur who invented many things but is most famous for developing one of the first practical light bulbs.</p> <p>Know that computing is used to program and control products.</p> | Thomas Edison              |                             |
| Y6   | Lighthouse                 | <p>As Year 4 +</p> <p>parallel circuit, input, output, cross-sectional</p>                                                                                                                                                                                           | <p>Develop a design specification for a lighthouse.</p>                                                                                                                                                                                                                                                                                                                                                                                                                             | <p>Know electrical systems are used in products.</p> <p>Know computer control systems are used in products.</p>                                                                                                                                                                                                                                                                                                                            |                            |                             |



## Design and Technology - Electrical Systems

|  |  |                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |  |  |
|--|--|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
|  |  | diagram, design specification | <p>Generate and develop ideas through discussion and cross-sectional diagrams. Formulate a step by step plan to guide making, listing tools, equipment, materials and components.</p> <p>Select and accurately assemble materials and securely connect electrical components.</p> <p>Create and modify a Crumble to enable their lighthouse to move.</p> <p>Continually evaluate and modify the moving features of the lighthouse to match the design specification.</p> <p>Test the lighthouse to demonstrate its effectiveness against user and purpose.</p> |  |  |  |
|--|--|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|