THE SHIPLEY ART GALLERY

Sew a Circuit

National Curriculum links Subject content DfE Art & Design **(Cross-curricular links to Electricity- Science)**

KS1: Look at original work in museums and galleries to start to develop skills of reflection, consideration, identification, analysis, selection, comparison, speculation, imagination, questioning, interpretation, evaluation and inform their own creative decision making.

KS2: Develop skills, knowledge and understanding in more diverse art, craft & design contexts to include museums & galleries.

National Curriculum links Subject content DfE Design & Technology

KS1 Design: purposeful, functional, appealing products for themselves and other users based on design criteria. Generate, develop, model and communicate their ideas through talking,

Make: select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics **Evaluate:** evaluate their ideas and products against design criteria

KS2 Design: generate, develop, model and communicate their ideas through discussion. Use criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups

Make: select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

Evaluate: their ideas and products against their own design criteria and consider the views of others to improve their work.

Technical knowledge: understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers & motors]

Learning Objectives	**Introduction:** Share ideas about the term **Textiles** and what we know. Together find out how we can identify different types of fabrics and materials used. Look for ideas from the displayed textiles. Think about the fibres, yarns & threads.	**Assessment for Learning**
To identify the range of textiles in the Shipley Collection.	**Special properties of fabrics:** images share and collate ideas about resistant fabrics. Fabric sheets for thermal heating, to conduct electricity in small spaces, Aerospace textiles and clothes.	Make links with textiles from own experience and recognise the range of uses.
To recognise properties of manufactured fibres that can be used within fabrics.	**Introduce the idea: Conductive fibres** can be woven, knit, sewn, cut or braided (plaited). This makes them lightweight, flexible & versatile. Today we are going to SEW a circuit using a conductive fibre in a thread.	Possibilities of resistant fabrics & conductive fibres.
To Identify the components used in a series circuit.	**A complete circuit:** Shared teaching by the class of how to make a circuit using the box of components to light the bulb. Giving instructions to the Gallery leader or a classmate using correct terms for the components	Using component terms.
To make links to the equivalent "components" in the textile circuit.	**Human Sewing A Circuit:** human components with a Person Needle to see how the thread connects the components and the circuit lights the LED. If we are **"sewing a circuit"** predict what will become the **switch,** the **cell,** the	Recognising when the circuit is broken and the electrons can not flow

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	wire, the **bulb.** How will the circuit be complete? Broken?	
To use appropriate stitches in sewing for securing, attaching, starting off, finishing and linking components together. To use knowledge and understanding of electricity to trouble shoot, tracing the continuity of a circuit. To create a Cuff Accessory which lights up with a working circuit.	**Working Examples:** Sharing and thinking about Designs for the outcome by looking at examples to see how the components fit together in the circuit. **Sewing Techniques:** Together we will discover the different techniques and steps to create your uniquely designed Cuff Accessory. Coming together and following each step adding to the talk out loud thinking while sewing. ·Sewing one part of a press stud using the technique for sewing a button onto fabric. ·Running stitch between each component. ·use finishing off stitches before a thread cut. ·use over stitch to secure each component. ·use the rule for directional flow for LED connections. ·use the rule for negative & positive terminals on a cell & cell holder.	Having a go at Running stitch overstitch, starting off, finishing off. Secure stitches keeping components attached. ***Trouble shooting*** ·Problem solving: thread passing through the fabric not around the outside. ·Identifying a break in the circuit ·checking components connected ·checking pos+ and neg- "rules" ·begin again (unpick to the error)
To create a design that includes the LED light as a feature on the cuff and make it without breaking the circuit.	**Morning Challenge: Create the Circuit** after a demonstration as well as looking at examples made, use the top tips shared to follow each step in the process. Create and make the Cuff circuit independently. Seek help for remodelling by the workshop leader and ask other adults/members of staff to re-thread needles. **Afternoon Challenge: Design & Make** Key Question: How will you display the LED as part of your design? Choosing and selecting from reclaimed fabrics and materials make your design. Thinking carefully about **conductors** and **insulators** of electricity before attaching, joining or sticking onto the Circuit Cuff made. Make sure the "electrical thread" is not broken. Check that all the components are still secure.	The Cuff has a complete working circuit. (The press studs act as a Switch) The finished Cuff shows the light as part of the overall design. (may have adaptions and modifications to original idea for design)
Analyse and evaluate own and others work, identify key features, make comparisons and use it to inform their own actions to modify, adapt or improve.	**Coming together** appraise the range of Accessory Cuffs made I like the way….. What would you do different next time? Evaluate against the criteria set.	Verbal Evaluations & Feedback

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Before your visit	**After your visit**	**Key Vocabulary**
Make a free teacher pre visit to familiarise yourself with the Gallery. Share the introduction to the Shipley Gallery with your group	Explore other SMART textiles using electricity.	Running stitch, Overstitch, finishing off stitch, thread, needle, needle threader. Conductive thread. press stud, Electricity, Resistant, Component, Circuit, Series circuit, Switch, LED, Bulb, Cell, positive, negative, terminal, source, force, Insulator, Conductor, Electrons.