




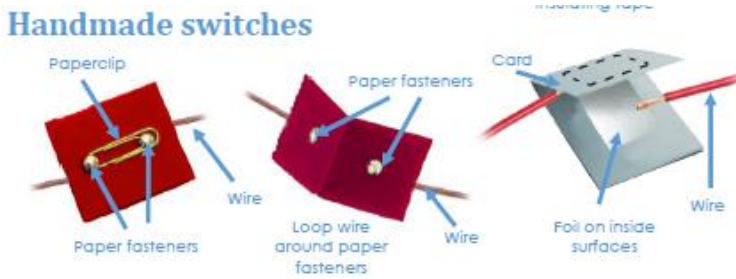
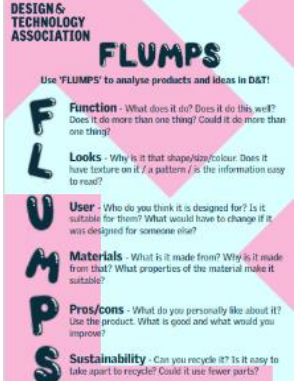
Springdale First School





Imagine, Believe, Achieve

Year 4 Design and Technology Electrical

★ Children's prior learning in this area	★ Cultural Capital Opportunities	★ Key vocabulary and glossary
<p>Science – circuits (dependant on when this is being covered).</p> <p>Recall and retrieve – electrical circuits.</p> <p>Playing electrical circuit games at home/school.</p>	<p>Games through time – history of the electrical game.</p>  <p>Hasbro games.</p> <p>History of - Hasbro History: Founding, Timeline, and Milestones - Zippia</p>	<ul style="list-style-type: none">• Circuit – path through which electricity passes.• Conductor – a material which allows an electric current to pass through it.• Insulator – a material which does not easily allow electric current to pass through it.• Prototype – a model made to test whether a design will work.• Push-to-break switch – a switch turned off by pressing it.• Push-to-make switch – a switch turned on by pressing it.• Toggle switch – a switch operated when a lever is pressed.• System – a set of related parts or components that together achieve a desired outcome.• Output devices – components that produce an outcome e.g. bulbs and buzzers.• Input devices – components that are used to control an electrical circuit e.g. switches.

Enquiry Question- How have board games changed over time?	Enquiry Question – Which switch is best?	Enquiry Question – What do I know to help me design an electrical game?
Concept – Enquire 	Concept – Design 	Concept – Design – Written and drawn ideas
<p>sticky knowledge Children will learn that electrical board games work by completing/ closing an electrical circuit using a switch.</p> <p>Talk about board games the children play & note down those that are electrical. Discuss Hasbro & the impact they have had on board games over time.</p> <p>Steer discussion to electrical boardgames.</p> <p>Practise – Look at Hasbro games & how they have changed over time.</p> <p>Tell the chn about the different games that Hasbro has designed – have some for the chn to play with. (Twister, <u>Operation*</u>, Connect4, <u>mastermind</u>, <u>Perfection</u>, Hungry Hippos, Game of Life, Mouse Trap...)</p> <p>Apply - Investigate what makes the games purposeful and who are the users? How is the game made challenging? How do you win/ lose?</p> <p>Create a mind map for the children to refer back to.</p> <p>Deepen – Look at how the electrical board games are powered – electrical circuit & switch.</p>	<p>sticky knowledge They will know the components of a simple circuit and circuit with a switch.</p> <p>Introduce the children to a simple switch.</p> <p>Practise - Focus on the componenets – labelling the parts (using technical vocabulary) that make up a simple circuit & switch.</p> <p>Follow the PowerPoint in resources folder.</p> <p>Handmade switches</p>  <p>Apply – chn to make own switches and then draw and label these in their books. They will then evaluate their effectiveness, suitability, pros/ cons for a board game. (In groups make different switches)</p> <p>Deepen - Which switch could be used for a board game?</p>	<p>sticky knowledge Chn to design an electrical board game using design criteria.</p> <p>Practise – discuss with the children that inventors first draw/ design their games before making them.</p> <p>Create a design criteria with the chn – what will your game need? Why.</p> <p>Refer to FLUMPS.</p> <p>Apply – Chn to design a game – think about product user. Use considered ideas and following the design criteria.</p> <p>Deepen - Annotate drawings and give reasons for choices.</p> 

Let's make!	Enquiry Question – What worked? Why?
Concept – Make	Concept – Evaluate
<p> Children will follow their design & step by step plans to make their product.</p> <p>Children will attach a wire to a battery – creating a series of buzzers/bulbs.</p> <p>Discuss the making process and make notes – evaluating as they go – annotate drawings & design.</p>	<p> Using design criteria – chn will evaluate their product giving informed reasons.</p> <p>Practise – model evaluating product using design criteria and notes form making process.</p> <p>Apply – chn to evaluate thir own product using design criteria – fit for purpose – compare with peers and discuss. Give considered improvements & explain why.</p> <p>Deepen – evaluate peer products.</p> 