



Key Skills and sequence of learning	Key enquiry questions and links to Values – Compassion, Courage and Fairness	Subject progression (Year 6)
<p>MANTLE OF THE EXPERT CONTEXT A priceless Egyptian artefact has been stolen from a museum. The curator is distraught. He wishes to open a new Egyptian exhibit, but he is afraid that the burglars will return and steal the new artefact too. Your task is to design and make an attractive, alarmed cabinet that will protect the new Egyptian artefact from being stolen. (The children can make their sphynx or other item using plasticine). (Children show compassion for the curator – think about fairness – to the artifact, to the Egyptian culture, to the people who want to view it)</p> <p>Stage 1 – Product Analysis Have a look at existing exhibits from around the world. http://setdesignshop.com/egyptian-exhibit/9jedshxcrijrn7ctxi69ig6gch2hjq Also see PP with more existing ideas</p> <p>https://segd.org/20-most-influential-exhibit-designs-century - different exhibit designs other than Egyptians.</p>	<p>What do they like about the exhibits? It may help to think about exhibits they have visited (World museum in Liverpool) What do they dislike about the exhibits? What do they think should be included in an exhibit? What makes a successful exhibit? Security – How would you protect the artefact? Why do we have to protect the artefact?</p>	
<p>Stage 2 – Design</p> <p><u>THE DESIGN BRIEF – Share this design brief with the children so they can refer to it during the design phase.</u></p> <p><u>To design a prototype/mock up of an Ancient Egyptian museum exhibit.</u></p> <ul style="list-style-type: none"> - The artefact is the masterpiece of the exhibit and will take centre stage. - The casing must have a security element to it, to keep the artefact safe. - It must have an eye-catching backdrop and surroundings, based on the Ancient Egyptians. - You must have a light (LEDs) element to your design. - You may also include a moving section.(Optional) - Create an information sheet that will explain your concept to the museum curator. (Interactivity, Artefact information, etc) 	<p>Things the children may what to consider:</p> <ul style="list-style-type: none"> • What technology will they install into their design? (This can be included in their Information sheet) interactive games ect • Who is their audience? • What is their story behind their design? Stories within a story! • How will people flow in their exhibit? • What graphics will they use to enhance the audience experience? 	<p>Design</p> <p>Clarify and justify plans, designs and ideas by drawing upon and using a range of relevant sources of information.</p> <p>Produce detailed designs and plans drawn to scale from a range of viewpoints, using pattern pieces and computer-aided design packages effectively.</p> <p>Discuss ways in which ideas, plans and designs are formed and modify to ensure that the design criteria are met effectively.</p>

<p>Create a diagram showing what your prototype will look like and how it will work. You may need to zoom in to certain areas to show how it will work – similar to an exploded diagram.</p> <p>You may want to think about how your exhibit links to your partner's exhibit with a consideration of the flow of traffic.</p> <p>https://assignmentancientegypt.weebly.com/egyptian-diorama.html - model ideas https://www.firstpalette.com/craft/rainforest-diorama.html - Diorama similar to our prototype</p> <p>https://www.mlldesignlab.com/blog/top-10-tips-to-great-museum-exhibit-design-top 10 tips to</p> <p>https://colorcraft3d.com/blog-post/10-tips-for-museum-exhibit-design-success/</p> <p>https://www.youtube.com/watch?v=KYKVf6edvcA&feature=emb_logo - BBC Teach – Circuits (Reminder) https://www.youtube.com/watch?v=XSukRnxGy5c – Series and Parallel circuits https://www.si.edu/spotlight/ancient-egypt - Artefacts</p>		
<p>Stage 3 – Key Skills Children to practice skills safely or demonstration from the teacher on how to do the following effectively and safely. Cutting Gluing Circuit making with LED lights, buzzer alarm, [Optional motor] – connecting wires safely https://www.youtube.com/watch?v=XSukRnxGy5c – Series and Parallel circuits</p> <p>https://feltmagnet.com/crafts/Pyramid-Diorama - How to make a pyramid out of paper</p>		<p><u>Electrical and Mechanical Components</u></p> <p>Explore and describe how switches can be used in a range of circuits to control components, e.g. lights in a lighthouse, a movement sensor in a burglar alarm.</p> <p>Apply appropriate safety measures when constructing circuits.</p>
<p>Stage 4 – Make Children to make their exhibit with their security element using various materials based on their design considerations. It is fine for the children to deviate from their design if it is to make improvements (This can be evaluated at a later stage).</p>		<p><u>Make</u></p> <p>Select a range of appropriate tools to cut, shape and join materials and components with accuracy and precision.</p> <p>Join and combine a range of materials and components using the most effective permanent and temporary way.</p>

<p><u>Materials you may need:</u> Cardboard boxes See-through packaging – toy display packaging Other types of packaging that may help with construction Cocktail sticks Glue sticks PVA glue Plasticine – possibly for making a model of a sphinx, mini pyramid etc</p> <p><u>Electronics</u> Buzzers LEDs Wires Cells Cell holders Motors</p>		<p>Identify and apply an appropriate finishing technique to ensure a high quality end product which meeting the design criteria.</p> <p>Follow procedures for safety.</p> <p><u>Construction</u> Use a range of increasing methods to strengthen 3D structures and frames.</p> <p>Build a range of structures using a wide range of effective materials.</p>
<p><u>Stage 5 – Evaluate</u> Children will evaluate their peers work and their own based on the design brief.</p>	<ul style="list-style-type: none"> • Have I followed the design brief set by the museum? 1. The artefact is the masterpiece of the exhibit and will take centre stage. 2. The casing must have a security element to it, to keep the artefact safe. 3. It must have an eye-catching backdrop and surroundings, based on the Ancient Egyptians. 4. You must have a light (LEDs) element to your design. 5. You may also include a moving section.(Optional) 6. Create an information sheet that will explain your concept to the museum curator. (Interactivity, Artefact information/story, etc) <ul style="list-style-type: none"> • • Did I have to make any improvements during the design process? Why? • Was what I planned achievable? • What could I have improved in my design? • Does the alarm system work? 	<p><u>Evaluate</u> Use analysis of existing products supported by accurate factual information to inform own work.</p> <p>Test and evaluate products to identify the variants which may affect the function of a product.</p> <p>Give reasons, supported by factual evidence for the success of aspects of a product and provide considered solutions to resolve those parts that could be improved.</p>

Design

Clarify and justify plans, designs and ideas by drawing upon and using a range of relevant sources of information.

Produce detailed designs and plans drawn to scale from a range of viewpoints, using pattern pieces and computer-aided design packages effectively.

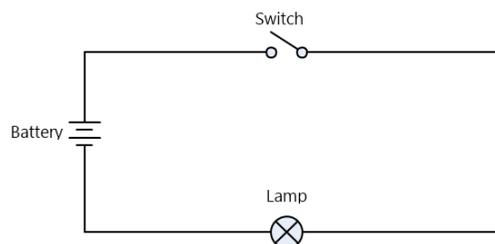
Discuss ways in which ideas, plans and designs are formed and modify to ensure that the design criteria are met effectively.

Electrical and Mechanical Components

Explore and describe how switches can be used in a range of circuits to control components, e.g. lights in a lighthouse, a movement sensor in a burglar alarm.

Apply appropriate safety measures when constructing circuits.

Diagrams of circuits:



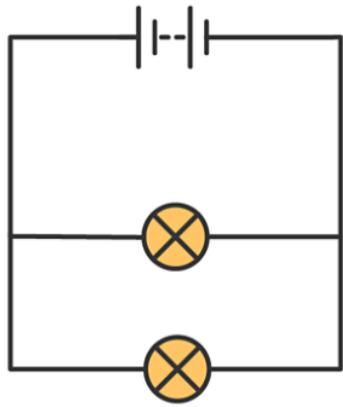
Product analysis:

- What do they like about the exhibits?
- What do they dislike about the exhibits?
- What do they think should be included in an exhibit?
- What makes a successful exhibit?
- Security – How would you protect the artefact?
- Why do we have to protect the artefact?
- Who is their audience?
- What graphics will they use to enhance the audience experience?
- What features are they going to include?
- What is their story behind their design and artefact?
- How will people flow in their exhibit?

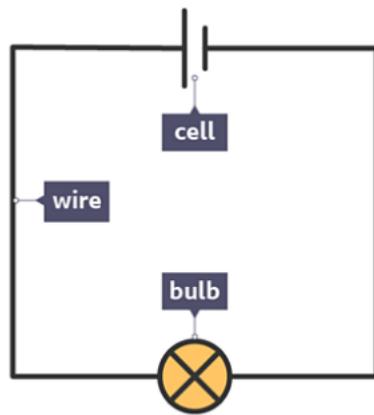


Model questions

- What materials am I going to use to build my model?
- How am I going to do the security element of my model?
- How is my security device going to fit in to my model?
- Where will I place the LEDs in my model?
- How will they light up?
- What skills do we need to build our model?



A simple parallel circuit.

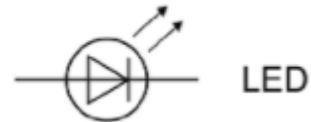


A simple series circuit.

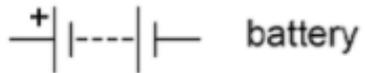
Symbols



cell



LED



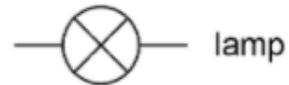
battery



Buzzer



switch (open)



lamp



switch (closed)



fuse

<p><u>Make</u></p> <p>Select a range of appropriate tools to cut, shape and join materials and components with accuracy and precision.</p> <p>Join and combine a range of materials and components using the most effective permanent and temporary way.</p> <p>Identify and apply an appropriate finishing technique to ensure a high quality end product which meeting the design criteria.</p> <p>Follow procedures for safety.</p> <p><u>Construction</u></p> <p>Use a range of increasing methods to strengthen 3D structures and frames.</p> <p>Build a range of structures using a wide range of effective materials.</p>	<ul style="list-style-type: none"> • Are we working safely with the equipment? • Am I following my design? • Is my structure strong enough? • Is what I have planned working? • Could I improve it? • Is it to a high quality that will impress the museum curators?
<p><u>Evaluate</u></p> <p>Use analysis of existing products supported by accurate factual information to inform own work.</p> <p>Test and evaluate products to identify the variants which may affect the function of a product.</p> <p>Give reasons, supported by factual evidence for the success of aspects of a product and provide considered solutions to resolve those parts that could be improved.</p>	<ul style="list-style-type: none"> • Have I followed the design brief set by the museum? 7. The artefact is the masterpiece of the exhibit and will take centre stage. 8. The casing must have a security element to it, to keep the artefact safe. 9. It must have an eye-catching backdrop and surroundings, based on the Ancient Egyptians. 10. You must have a light (LEDs) element to your design. 11. You may also include a moving section.(Optional) 12. Create an information sheet that will explain your concept to the museum curator. (Interactivity, Artefact information/story, etc) • • Did I have to make any improvements during the design process? Why? • Was what I planned achievable? • What could I have improved in my design? • Does the alarm system work?

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<ul style="list-style-type: none"> • Analyse • Annotation 	<ul style="list-style-type: none"> • Graphics • L.E.D. - light emitting diode 		<ul style="list-style-type: none"> • Aesthetic •
<ul style="list-style-type: none"> • Artefact • Brief • Circuit • Criteria • Design • Evaluation • Function 	<ul style="list-style-type: none"> • Planning • PVA – glue • Quality • safety • scissors • Produce • Exhibit 		