

Suggested Activities



Royal Albert Hall

Session	Learning Intentions	Activities and Resources
1. The Brief & Research	<ul style="list-style-type: none"> • To understand the purpose of a design brief. • To generate ideas and explain them clearly. • To relate the way things work to their intended purpose. • To record their evaluations using drawings with labels. 	<ul style="list-style-type: none"> • Introduce the class to the concept of a design brief. • Show the children a range of devices/pieces of classroom furniture. Every piece of furniture in the classroom was designed by someone with a brief. What would the design brief have been for the products that they have been given? How well does it fit the purpose? Which modifications and improvements can they suggest? Ask children to write a new design brief for the product. Can they sketch the new and improved product? <i>Encourage the students to have 'jotters' throughout the process where they can make notes and sketches of ideas This enables them to track back their thought processes and make adjustments accordingly..</i>
2. Generate & Evaluate Ideas about Mechanisms.	<ul style="list-style-type: none"> • Understand there are a variety of products which incorporate a pulley and a drive belt and are driven by a motor. • To draw and model their ideas. • To join and combine materials and components accurately in temporary and permanent ways. • To understand how rotation can be transferred from one part of a model to another by using pulleys and belts. 	<ul style="list-style-type: none"> • Generate a list of everyday objects in the home and in the environment that move/having moving parts. Encourage students to draw their ideas and label the different parts of the design including any moving parts. Ask the children to think about how bicycles, escalators, conveyor belts, doors, lifts etc move. • Have a range of cogs, pulleys, dowelling, construction kit components and other materials that students will have available when they actually come to make their product. Allow children to handle the kit in order to enable the children to simulate movements in the objects they are exploring. • Allow time for students to experiment with the materials and mechanisms as this additional knowledge will enable them to design more effectively. Allow the students to work individually, in groups or in pairs in order to generate ideas. • Give children tasks to complete in their groups e.g. Make a cog rotate once/twice by only touching a connected smaller/larger cog. What do they notice?

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3 + 4. Design and Construct a Prototype	<ul style="list-style-type: none"> • Develop design ideas using the planning sheet. • To explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways. 	<ul style="list-style-type: none"> • Review the suggested design briefs or encourage children to generate a design brief based on an aspect of the show. • In the groups that they will be working on to create their 'final' design, students should be given time to discuss their ideas and findings. During this time, the groups should be encouraged to come up with a series of designs to try. • Students can then work in their teams to pick the best four final designs in their group and then use a planning sheet to develop further their ideas. It's best for all of the students in the team to have a go at drawing the 'final' design, to familiarise themselves properly with it. • Students work as a team to create a 'working' model of the product. Encourage students to refer throughout the process to the original design brief as well as the '. They can also refer to the 'jotters' and use these notes to enable them to complete a model.
5. Detailed Design	<ul style="list-style-type: none"> • To evaluate their product, identifying strengths and areas for development, and carrying out appropriate tests. 	<ul style="list-style-type: none"> • Have the students test their prototype against the original brief. They should identify any weaknesses in the design and any other aspect that can be improved. They should then go through the design process again, using the planning sheet, to finalise their prototype and produce a detailed diagram. • Children should draw and plan before working on the model.
6 + 7. Manufacture	<ul style="list-style-type: none"> • To explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways. 	<ul style="list-style-type: none"> • With their improved designs, students should produce a finished version of their work - paying careful attention to the details of their design and ensuring that all mechanisms work correctly.

8. Evaluate	<ul style="list-style-type: none">• To evaluate their product, identifying strengths and areas for development, and carrying out appropriate tests.• To create a presentation of their work to show at the Royal Albert Hall.	<ul style="list-style-type: none">• Students will need to test the product and evaluate its effectiveness in relation to the design brief.• A presentation will need to be made that interrogates the design brief and specification generated as a group. Each group will need to devise a series of tests or questions that will be answered when evaluating the product. The presentation is as much about the process that the students have been through as well as the final product. The presentation could be in the form of a PowerPoint presentation or A1 sheets. It could include photographs, diagrams, working drawings, diary pages and any practical work the students would like to show.
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