Ashtree Primary School and Nursery Medium Term Plan for DT

Year 2 – Construction – Throne for a monarch

Key Vocabulary

Free standing structure, stability, strong, weak, test, stiff, cut, fold, cylinder, rectangle, square, cut, fold, join, fix, structure, base, top, underneath, side, edge, surface, thinner, thicker, corner, straight, triangle, cuboid, cube,

Prior Knowledge: Explore and experiment how to make a structure more stable. Ability to design and make a chair using cardboard and paper cylinders. To assemble, join and combine materials and components. Art: sculptures.

Year 1/2:

Key Knowledge: Suggest how their products could be improved. To know that different joining techniques can be used for different materials and purpose. To explore and know how to make freestanding structures stronger, stiffer and more stable.

Key Skills: Assemble, join and combine materials and components. . Use a range of materials to create models. Use simple finishing techniques suitable for the structure they are creating.

KS1 Design and Technology National Curriculum

Design: design purposeful, functional, appealing products for themselves and other users based on design criteria. Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

Make: select from and use a range of tools and equipment to perform practical tasks select from and use a wide range of materials and components, including construction materials

Evaluate: explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria

Technical knowledge: build structures, exploring how they can be made stronger, stiffer and more stable

Design and Evaluate

Children can be taught key knowledge by learning the skills below:
Making a throne for a monarch

1. Introduce the project. I can evaluate an existing product.
2. Experiment with stability. I can experiment stability with different materials.
3. Planning the throne. I can plan a throne for a Monarch.
4. Making: I can make the legs, base and back rest of my throne
5. Making: I can make the arm rest and add decoration.
6. Evaluate: I can evaluate my final design and consider how to improve it.

Curriculum Enhancements and Designers

Designer

James Dyson

https://www.jamesdysonfoundation.co.uk/resources/other-engineering-resources/challenge-cards.html

Misconceptions

Not yet understanding what stability is and how it is important when designing a chair. Understanding the design process and the steps needing to take.

Suggested Activities

Stability experiment - Children can be given a variety of objects, such as rocks, marbles, or balls, and challenged to balance them on different types of cardboard and paper cylinders. This can help them understand the concept of stability and how it can be achieved in their chair design.

Joining materials - Children can practice joining cardboard and paper cylinders together using different types of glue and tape. This can help them develop their fine motor skills and learn how to create strong and stable joints.

Team work – Children work as a class to create a chair that is strong enough for their class mate to sit on.

Curriculum links

History, maths, science,

This will lead children..

In Year 1, students would have learned about different materials and how they can be used to create designs. They would have focused on developing basic skills such as cutting and joining materials.

In Year 2, students are building on these skills and developing a deeper understanding of design principles such as stability and function. They are also being encouraged to think more creatively and to use existing designs as inspiration for their own work.

In Year 3, students are able to use their prior knowledge of free standing structures to create a more stable structure by adding diagonal struts and widening the base. They use strip wood to make 2D frames which will then create a 3D structure.