

Design Technology Year 1 Autumn Structures

What do you want children to learn (link to NC)

Technical Knowledge & Understanding

- Know how to make freestanding structures stronger, stiffer and more stable.
- Know and use technical vocabulary - Structure, wall, tower, framework, base, side, edge, surface, cut, fold, join, fix.

Designing

- Generate ideas based on simple design criteria and their own experiences, explaining what they could make.
- Develop, model and communicate their ideas through talking, mock-ups and drawings.

Making

- Plan by suggesting what to do next.
- Select and use tools, skills and techniques, explaining their choices. – Scissors, hole punch, stapler, glue, string, pipe cleaners, PVA.
- Select new and reclaimed materials and construction kits to build their structures.
- Use simple finishing techniques suitable for the structure they are creating.

Evaluating

- Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings.
- Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria.

Prior Learning

Experience of using basic tools e.g. scissors, hole punch, glue, tape, PVA.
Experience of using construction kits and reclaimed materials used to make models.
Give simple, oral evaluations throughout the making process.

Focus Tasks / Key Questions

1. To build and explore a variety of freestanding structures using construction kits, such as wooden blocks, interconnecting plastic bricks and those that make frameworks (homes). Children could make models of the structures they have seen in school and the local area. *How can you stop your structures from falling over? How they can be made stronger, more stable and stiffer in order to carry a load?*
2. To teach joining and techniques with a range of tools and new and reclaimed materials that children are likely to use to make their structures. (Pipe cleaners inside straws to join, joining paper, cutting a window out of cardboard and junk modelling and paper hinges, fluting).
3. Discuss with the children what structure they will be designing, making and evaluating e.g. *Who will your product be for? What will be its purpose? What materials will you use? How will you make it strong and stable?*
Generate some simple design criteria with the children e.g. the structure should stand up on its own, it should be strong enough to hold a chimney and have a hinged opening such as a door/window. (File name: HIAS-KS1 Structures Project)
4. Select tools, skills, techniques and reclaimed materials to make a home. During the making process ask children to evaluate their developing ideas and final products against original design criteria.

Key Vocabulary

cut, fold, join, fix structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic, circle, triangle, square, rectangle, cuboid, cube, cylinder, design, make, evaluate, user, purpose, ideas, design criteria, product, function.

Learning Outcomes/ Assessment Opportunities

5. Design and make a stable freestanding structure including a roof and a hinged opening such as a door/window.

GDS/ Challenge

Add a triangular prism roof using joined straws to pipe cleaners to support.

Health and Safety

Pupils should be taught to work safely, using tools, equipment, materials, components and techniques appropriate to the task.