

Our DT Curriculum gives children the opportunity to develop skills, knowledge and understanding through designing and making functional products for a range of different users. They learn about key inventions and designers. Children are encouraged to think creatively and produce innovative designs as they explore the designed and made world in which they live.



YEAR 6

**Subject: DT**  
**Unit: Structures - Shelters**

**Characteristics of an Effective Learner**

Courage  
Commitment  
Collaboration  
Creativity  
Curiosity

**Prior Learning:**

- Year 1 - Building mock-up structures and shapes for their playground.
- Year 1 - Exploring how structures can be made stronger and more stable.
- Year 2 – Investigating materials suitable for a tent (Science)
- Year 2,4,5 – Cutting and joining wood
- Year 3 - Learning to how to strengthen and stiffen cardboard structures when making board games.

**Key Vocabulary taught in this unit:**

Shelter, frameworks, structures, reinforcement, purpose, strong, stable, waterproof, sliding joint, earthquake proof

**Intent: What do we want the children to know, be able to do by the time they complete this unit?**

**Design**

**Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups / investigate and analyse a range of existing products.**

**Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design**

Investigate a range of different shelters designed to withstand extreme weather conditions and make annotated sketches.

Use research to design a shelter which can support a given weight and which will stay dry to protect a family made homeless following an earthquake.

**Make**

**Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately/ apply their understanding of how to strengthen, stiffen and reinforce more complex structure**

Practise joining using appropriate fixings and methods for reinforcing materials.

Make prototypes to test their designs using straws, wire, pipe cleaners, paper, card, fabric, plastic, sticky tape, string, blu-tack.

**Evaluate**

**Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work**

Make modifications to their structures during manufacture and explain why.

Develop tests to evaluate the strength and waterproofness of their shelters.

Compare their finished shelter with those of their peers, evaluating each against the design criteria.

Use peer evaluation to suggest improvements to a friend's shelter.

Learn about the work of Renzo Piano who designed sliding joints which are used in the construction of earthquake proof buildings.

**Technical knowledge**

**Apply their understanding of how to strengthen, stiffen and reinforce more complex structures**

Use their knowledge of 3D shapes to construct strong and stable frameworks.

**Impact / Outcome:**

**What will the final product / result be?**

Design brief: Design and make a weatherproof shelter to house a family of 4 made homeless following an earthquake.

**P4C Inquiry (where appropriate) – linked to English/Geography.**

Should people live in regions that regularly experience natural disasters?