

Templemoor Infant and Nursery School

Year 2: Design and Technology



Term	Spring 1
Theme	Free Standing Structures
Rights Respecting Articles	Article 27, 29, 31



BACKGROUND INFORMATION

The children have already experienced using simple construction kits and using basic tools e.g. scissors. The children have also experienced cutting, shaping and joining materials using a range of resources such as masking tape, glue and paper fasteners

OUTCOMES

- I can generate, develop and communicate my ideas through talking, drawing, templates, mock ups and IT.
- I can choose tools and materials and explain why I have chosen them.
- I can build structures exploring how they can be made stronger, stiffer and more stable.
- I can evaluate what I have made using a design criteria.

NATIONAL CURRICULUM OBJECTIVES

- To design purposeful, functional, appealing products for themselves and other users based on design criteria.
- To generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.
- To select from and use a range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing).
- To select from and use a wide range of materials and components, including construction and materials, according to their characteristics.
- To explore and evaluate a range of existing products.
- To evaluate their ideas and products against design criteria.
- To build structures, exploring how these can be made stronger, stiffer and more stable.

TRANSFERRABLE READING, WRITING, MATHEMATICS AND CROSS CURRICULAR SKILLS

Mathematics – use appropriate standard and non-standard measures. Recognise and name 2D and 3D shapes.

Science – think about the properties of materials that make them suitable for particular purposes. Gravity.

English – ask relevant questions to extend their knowledge and understanding. Build technical vocabulary.

Geography – study the human and physical features of the surrounding environment.

KEY VOCABULARY

Cut	Framework	Top	Thinner	Curved	Triangle	Cylinder
Fold	Strengthen	Underneath	Thicker	Metal	Square	Design
Join	Weak	Side	Corner	Wood	Rectangle	Make
Fix	Strong	Edge	Paint	Plastic	Cuboid	Evaluate
Structure	Base	Surface	Straight	Circle	Cube	User
Wall	Purpose	Ideas	Criteria	Product	Function	Gravity

KEY SKILLS AND KNOWLEDGE

Skills

To fold paper or card in different ways to make free-standing structures.
To make a free-standing structure stronger, stiffer and more stable.

Knowledge

A free-standing structure is a structure that stands on its own foundation or base without attachment to anything else.

As a free-standing structure becomes taller, its centre of gravity rises.

Stability in a structure can generally be increased by making the base heavier or by adding buttresses.

Buttress - a structure added to a wall, tower or framework to make it a wall, tower or framework to make it more stable and/ or reinforce it

SEQUENCE OF TEACHING

- Generate ideas - create an ideas board.
- Create design.
- Focused Practical Task - folding paper or card in different ways to make free-standing structures; investigate how to make structures stronger, stiffer, stand up and more stable.
- Focused Practical Task - build and explore a variety of free-standing structures (models of buildings in the local area) using construction kits.
- Make product.
- Evaluate developing ideas and final products against design criteria.

ASSESSMENT

- Formative assessment throughout the process.
- Marking plans.
- Final product assessment.
- Self-evaluation.