



# Design Technology

# Structures

## Free-standing Structures

# Y1

In this unit, we will design, make and evaluate a strong chair for Baby Bear. We will investigate and evaluate a range of chairs, engage in focused practical tasks using construction kits to build structures which will inform our designing and making. We will test and evaluate our chair, thinking about the intended purpose.

### Structures Knowledge:

#### I will:

- Know how to make freestanding structures stronger, stiffer and more stable.
- Know and use technical vocabulary relevant to the project

### Skills

#### I will be able to:

##### Design:

- 1.1 Use pictures and words to convey what I want to design/make.
- 1.3 Model ideas with construction kits
- 1.5 Talk about how I will make their product

##### Make:

- 1.6 Select materials from a limited range that will meet the design criteria.
- 1.7 Explain which materials I am using and why.
- 1.8 Select and name the tools needed for making.

##### Evaluate:

- 1.11 Explore existing products and investigate how they have been made.
- 1.13 Talk about my design and what they I am making
- 1.14 Say how well my product meets the design criteria

### Vocabulary

#### Technical vocabulary

Structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, circle, triangle, square, rectangle, cuboid, cube, cylinder, metal, wood, plastic

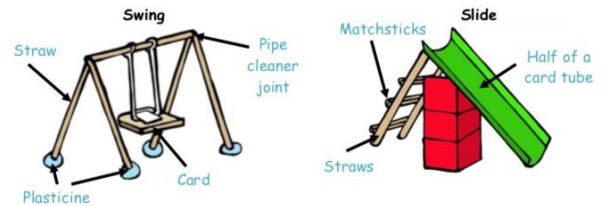
#### Process vocabulary

Cut, fold, join, fix, design, make, evaluate, user, purpose, ideas, design criteria, product, function.

Names of tools, equipment and materials used.

### Techniques:

#### Techniques for assembling freestanding structures

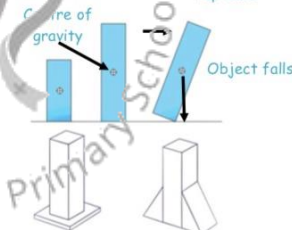
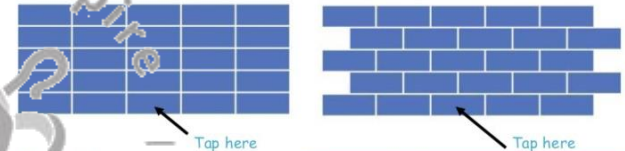


Show children how to join sheet materials and reclaimed boxes together using different tapes and glues.



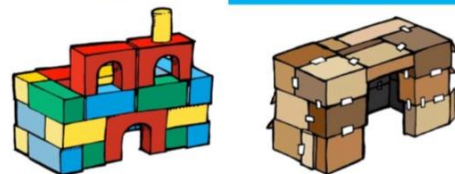
#### Technical knowledge and understanding

Build walls with these different patterns. Tap away the centre brick in the bottom row of each wall in turn. What happens? Which wall is the strongest?



As a freestanding structure becomes taller its centre of gravity rises. Stability in a structure can generally be increased by making the base wider, making the base heavier or adding buttresses.

Ask the children to build and explore a variety of freestanding structures through focused tasks. Use a range of construction kits.



### Inspiring Individuals



Gustave Eiffel