

# Design Technology

## Structures Year 3 Box Packaging

### National curriculum

### Vocabulary

#### Design

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

#### Make

To select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.  
To select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.

#### Evaluate

To investigate and analyse a range of existing products.  
To evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.  
To understand how key events and individuals in design and technology have helped shape the world.

#### Technology

To apply their understanding of how to strengthen, stiffen and reinforce more complex structures.

Assemble	Rigid
Attempts	Shell
Criteria	Stable
Evaluate	Stiff
Join	Strong
Mark out	Structure
Measure	Test

### Investigate Technical knowledge

### Design

### Make

### Evaluate

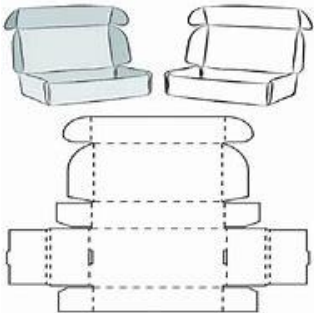
### Year 3 – DT Skills

-Gather information about the needs and wants of particular individuals and groups  
-Develop their own design criteria and use these to inform their ideas

-Generate realistic ideas, focusing on the needs of the user  
-Order the main stages of making  
-Use 2D CAD (added)

-Measure, mark out, cut and shape materials and components with some accuracy  
-Assemble, join and combine materials and components with some accuracy  
-How to make strong, stiff shell structures

-Use their design criteria to evaluate their completed products



What did I do well?  
How could I make an improvement?  
Does structure work?  
How is it functional?

### Learning Objectives

### Lesson Outline

#### Lesson 1: Investigate

**LO:** To understand the variety of shell structure products

**DT Skills:** -Gather information about the needs

Look at the features of different boxes and their uses- who might use these boxes? What for?

Take different shaped boxes apart to see how they are made.

Include boxes with windows so the product can be seen and opening compartments e.g. lids

<p>and wants of particular individuals and groups</p> <p>-Develop their own design criteria and use these to inform their ideas</p>	
<p><b>Lesson 2: Skills Practice</b></p> <p><b>LO:</b> To know how to make a shell structure using nets</p> <p><b>DT Skills:</b> Measure, mark out, cut and shape materials and components with some accuracy</p>	<p>Practice using tabs</p> <p>Nets- Polydron to make and disassemble 3D shapes</p> <p>Model how the net would be different if you have a lift off lid and how it would need to be slightly bigger for the lid.</p> <p>Model how different tabs would be stuck down depending on where you want a hinge lid to be positioned.</p>
<p><b>Lesson 3: Skills Practice</b></p> <p><b>LO:</b> To know how to strengthen structures</p> <p><b>DT Skills:</b> Assemble, join and combine materials and components with some accuracy</p> <p>-How to make strong, stiff shell structures</p>	<p>Making the structure strong- use different materials such as card corners, dowls, art straws, thicker card etc</p> <p>Look at glue, sellotape etc which joining materials are strongest? Use pegs to hold tabs together so they can dry.</p> <p>Draw bigger tabs to add strength</p>
<p><b>Lesson 4: Design</b></p> <p><b>LO:</b> To use computer aided design to design a shell structure</p> <p><b>DT Skills:</b> Order the main stages of making</p> <p>-Generate realistic ideas, focusing on the needs of the user</p>	<p>Purple Mash- 2designandmake cookie box.</p> <p>Discuss who the product is for and build a design criteria</p> <p>Scroll through to the 3D shapes and choose one to use.</p> <p>Pupils can alter the size of the shapes by moving the corners. Model how to change the view, how to add text, colour and add windows.</p> <p>Save a print onto card ready for next lesson. Print a paper copy for folders.</p>
<p><b>Lesson 5: Make</b></p> <p><b>LO:</b> To make box packaging for a specific purpose and audience</p> <p><b>DT Skills:</b> Measure, mark out, cut and shape materials and components with some accuracy</p> <p>-Assemble, join and combine materials and components with some accuracy</p> <p>-How to make strong, stiff shell structures</p>	<p>Use printed net from last lesson to join into a 3D shape, strengthen, make window (if in the design)</p>

**Lesson 6: Make and Evaluate**

**LO:** To embellish and evaluate box packaging for a specific purpose and audience

**DT Skills:** Measure, mark out, cut and shape materials and components with some accuracy

-Assemble, join and combine materials and components with some accuracy

-How to make strong, stiff shell structures

-Use their design criteria to evaluate their completed products

Complete boxes

Complete evaluations

Working towards

**End of unit assessment**  
Working at Age related expectations

Working at a greater depth