

# Design Technology Learning Journeys

## Year 3



Autumn Stone Age	Spring Mighty Mountains/ Extreme Earth	Summer Egyptians
Project Overview	Project Overview	Project Overview
<p>In this unit, the children will look at different examples of shell structures, including the design of homes in the past. They will disassemble different types of packaging to construct nets. They will then practise making nets out of card. The children will practise their skills of scoring, cutting out and assembling using pre-drawn nets to create a simple box. The children will explore different ways of strengthening and stiffening structures e.g. corrugating, ribbing, laminating. The children will go on to design a shell structure for a given purpose. They will create sketch plans and decide what materials they will need and the steps they will take. They will make their structure using the practised skills.</p>	<p>In this unit, the children investigate a range of books that have a range of lever and linkage mechanisms. They look at which parts move and how they are made to move by disassembling examples. The children use kits to explore different linkages and levers – identifying inputs and outputs. They look at where fixed and loose pivots are needed to create different movements. The children try out ideas practising their measuring, marking out, cutting and joining skills before they go on to design and make their own pictures/books with levers and linkages. The children should consider the audience and purpose for their product and evaluate against agreed design criteria.</p>	<p>In this unit, the children will investigate a range of textile products (bags) that have a selection of stitches, joins, fabrics and finishing techniques. They will disassemble products to gain an understanding of 3D shape, pattern and seam allowances. Through focused practical tasks they will practise different stitching techniques and will explore the appropriateness of different fabrics to create a bag. They will use products they have disassembled to make 2D paper pattern templates. The children will go on to design and make their own bag, producing mock ups and prototypes of their chosen product. The children should refine ideas based on continual evaluation against agreed design criteria.</p>
Aspect and Focus	Aspect and Focus	Aspect and Focus
<p><b>Aspect:</b> Structures <b>Focus:</b> Shell structures</p>	<p><b>Aspect:</b> Mechanisms <b>Focus:</b> Levers and Linkages</p>	<p><b>Aspect:</b> Textiles <b>Focus:</b> 2D shape to 3D product</p>
Outcome of DT Project	Outcome of DT Project	Outcome of DT Project
<p><b>Outcome:</b> Design and make shell structure homes linked to the Stone Age topic</p>	<p><b>Outcome:</b> Moving pictures linked to topic of Literacy text</p>	<p><b>Outcome:</b> Design and make a bag</p>
Main Focus for Skills Development	Main Focus for Skills Development	Main Focus for Skills Development
<p><b>Prior learning</b></p> <ul style="list-style-type: none"> <li>• Experience of using different joining, cutting and finishing techniques with paper and card.</li> </ul>	<p><b>Prior learning</b></p> <ul style="list-style-type: none"> <li>• Explored and used mechanisms such as flaps, sliders and levers.</li> </ul>	<p><b>Prior learning</b></p> <ul style="list-style-type: none"> <li>• Have joined fabric in simple ways by gluing and stitching.</li> </ul>

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- A basic understanding of 2-D and 3-D shapes in mathematics and the physical properties and everyday uses of materials in science.

### Designing

- Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and purpose of the product.
- Develop ideas through the analysis of existing products and use annotated sketches and prototypes to model and communicate ideas.

### Making

- Order the main stages of making.
- Select and use appropriate tools to measure, mark out, cut, score, shape and assemble with some accuracy.
- Explain their choice of materials according to functional properties and aesthetic qualities.
- Use finishing techniques suitable for the product they are creating.

### Evaluating

- Investigate and evaluate a range of existing shell structures including the materials, components and techniques that have been used.
- Test and evaluate their own products against design criteria and the intended user and purpose.

### Technical knowledge and understanding

- Develop and use knowledge of how to construct strong, stiff shell structures.
- Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes.

- Gained experience of basic cutting, joining and finishing techniques with paper and card.

### Designing

- Generate realistic ideas and their own design criteria through discussion, focusing on the needs of the user.
- Use annotated sketches and prototypes to develop, model and communicate ideas.

### Making

- Order the main stages of making.
- Select from and use appropriate tools with some accuracy to cut, shape and join paper and card.
- Select from and use finishing techniques suitable for the product they are creating.

### Evaluating

- Investigate and analyse books and, where available, other products with lever and linkage mechanisms.
- Evaluate their own products and ideas against criteria and user needs, as they design and make.

### Technical knowledge and understanding

- Understand and use lever and linkage mechanisms.
- Distinguish between fixed and loose pivots.
- Know and use technical vocabulary relevant to the project.

- Have used simple patterns and templates for marking out.

- Have evaluated a range of textile products.

### Designing

- Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s.
  - Produce annotated sketches, prototypes, final product sketches and pattern pieces.

### Making

- Plan the main stages of making.
- Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing.
- Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern.

### Evaluating

- Investigate a range of 3-D textile products relevant to the project.
- Test their product against the original design criteria and with the intended user.
- Take into account others' views.
- Understand how a key event/individual has influenced the development of the chosen product and/or fabric.

### Technical knowledge and understanding

- Know how to strengthen, stiffen and reinforce existing fabrics.
- Understand how to securely join two pieces of fabric together.
- Understand the need for patterns and seam allowances.

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• Know and use technical vocabulary relevant to the project.

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