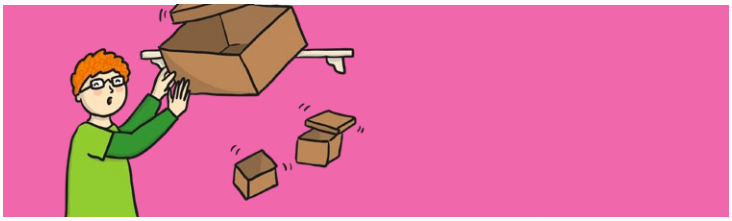
Mechanical Posters

Design and Technology | KS2 | Unit Overview

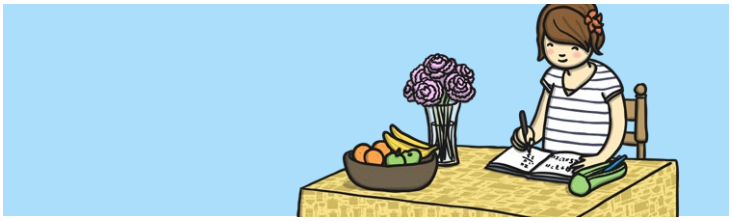
Introduction

This 'Mechanical Posters' unit gives children opportunities to develop their understanding of mechanical systems. Following instructions on how to make different types of lever and linkage mechanisms gives children experience and information to draw on when developing their own ideas. They sketch a design based on their ideas, make a prototype, and then create their 'Lever and Linkage Poster' using the context of recycling. Finally, children will evaluate their finished product.



Health & Safety

When carrying out a risk assessment for this unit, teachers will need to consider the materials, tools and equipment being used. Scissor safety rules should always be followed.



Home Learning

Recycle Poster: Children are asked to design a poster to display in a room of their home to encourage the members of their family to recycle.

Recycle Symbol Art: Children decorate the recycling symbol with their own different pictures linked to recycling.

Wider Learning

Some City Councils host 'recycling roadshow events.' This would give children the opportunity to ask about any recycling queries.

A walk around the local area would allow children to investigate the places where people can recycle.

An educational visit to a local recycling centre, to see how materials are sorted and prepared for reuse.

Assessment Statements

By the end of this unit...

...all children should be able to:

- Explore mechanical systems.
- Draw a simple annotated design.
- Start to generate ideas for design criteria.
- Make a prototype and finished poster which has at least one lever/ linkage mechanism.
- Evaluate what they did well on their product and things they could improve.

...most children will be able to:

- Explore how mechanical systems work.
- Draw a design which uses annotations to add some detail.
- Develop design criteria to inform the design of innovative products aimed at a particular audience.
- Make a prototype and well finished poster which aims to have two lever/linkage mechanisms.
- Use design criteria to help guide the evaluation process.

...some children will be able to:

- Answer in detail a range of questions about mechanical systems, identifying the input and output.
- Add detailed annotations to a design to show how different components move.
- Base design criteria around the needs of the design brief.
- Make a prototype and well-finished poster which uses up to three lever/linkage mechanisms.
- Evaluate their product in detail against design criteria.

To look at all the resources in the Mechanical Posters unit click here.

To find out more about PlanIt download our free guide here.

Lesson Breakdown

1. Mechanical Systems

Investigate and analyse a range of existing products, in the context of investigating existing lever and linkage mechanisms.

- I can investigate mechanical systems.

Resources

Lesson Pack

- Examples of mechanisms teaching aids

2. Levers and Linkages

Understand and use mechanical systems in their products (for example levers and linkages), in the context of making a mechanism which uses levers and linkages.

- I can make mechanical systems which use levers and linkages.

Lesson Pack

- Examples of mechanisms teaching aids

3. Designing

Use research and develop design criteria to inform the design of innovative, functional and appealing products that are fit for purpose, aimed at individuals or groups, in the context of developing design criteria and design ideas for a moving poster to promote recycling.

- I can develop design criteria to help me design innovative product.

Generate, develop, model and communicate ideas through discussion, annotated sketches, and prototypes, in the context of generating and developing ideas to make a moving poster.

- I can use sketches to develop and communicate ideas.

Lesson Pack

- Examples of mechanisms teaching aids

4. Prototypes

Generate, develop, model and communicate ideas through discussion, annotated sketches, and prototypes, in the context of using the moving poster design to create a prototype.

- I can use prototypes to develop my ideas.

Lesson Pack

- Paper, card, coloured pens/pencils, magazines, newspapers, glue, split pins, scissors, modelling clay, pencil, rulers, sticky tape, masking tape, sticky pads

5. Finishing a Product

Select from and use a wider range of tools and equipment to perform practical tasks accurately, in the context of selecting and using the correct tools and equipment make a moving poster.

- I can select and use the correct tools and equipment accurately.

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, in the context of selecting materials to produce a high quality finish on a moving poster.

- I can carefully select materials and use different techniques.

Lesson Pack

- Paper, card, coloured pens/pencils, magazines, newspapers, glue, split pins, scissors, modelling clay, pencil, rulers, sticky tape, sticky pads.
- Access to a computer

6. Evaluating Our Posters

Understand and use mechanical systems in their products (for example levers and linkages), in the context of knowing the name and function of the parts of a lever and linkage system.

- I can name the parts and functions of a lever and linkage mechanical system.

Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work, in the context of evaluating their moving poster.

- I can evaluate my poster.

Lesson Pack

- Paper, card, coloured pens/pencils, magazines, newspapers, glue, split pins, scissors, modelling clay, pencil, rulers, sticky tape, sticky pads.
- Access to a computer