

Mechanical Systems

Year 3

Design Brief

You will be making different types of lever and linkage mechanisms, creating a proto-type and then creating your final 'Lever and Linkage Poster' using the context of recycling.

How will I do this?

- 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 you did well on your product and things you could improve.



Key Learning

- Investigate and analyse a range of existing lever and linkage mechanism products.
- Understand and use mechanical systems in you products.
- 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.
- Generate, develop, model and communicate ideas through discussion, annotated sketches, and prototypes.
- 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.

Key Vocabulary

Design brief: The starting point for any design is the design brief. The brief outlines what problem a design will solve. It should be referred to throughout the project to make sure what you are working on will solve this problem.

Recycle: Recycling means taking a material like the plastic in a plastic bottle or the metal in a drink can and putting it through a process so the material can be used again instead of being wasted.

Mechanism: A mechanism is a mechanical device for doing something. It includes the idea of tools and machines, but is used for a wider range of objects, processes and ideas.

Lever: The lever is made up of a straight rigid object like a board or a bar which pivots on a turning point called a fulcrum. Levers make work easier by using leverage which multiplies the force. When you use a lever, you move a smaller force a longer distance in order to lift a load a short distance.

Linkage: A mechanical linkage is a collection of parts joined together to change or help movement.

Pivot: To pivot is to turn or rotate, like a hinge.

Prototype: A prototype is like a model that designers make to take their idea from a flat illustration on a page to a 3D item that you can look at from all angles.

Pivot

A pivot is a point that something turns around. The centre of a merry-go-round is a pivot.

Lever

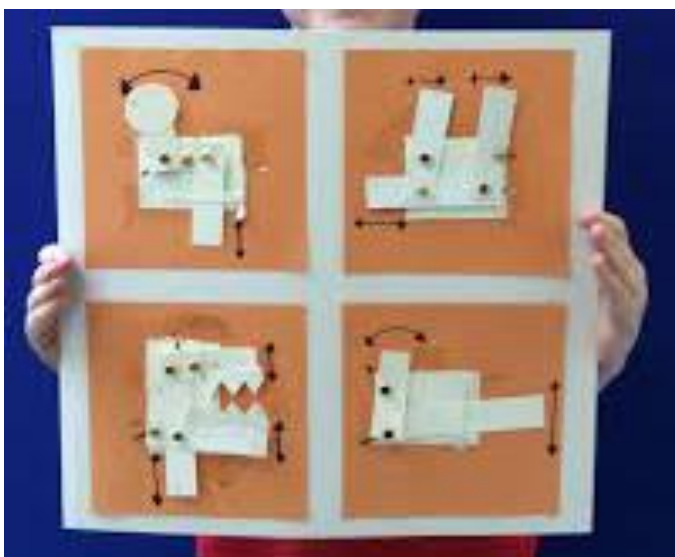
A lever is a bar or rod that when pushed or pulled causes something else to move. A door handle is a lever.

Rotate

Rotate means to turn something around an axis or centre. Clock hands rotate around the centre of the clock.

Linkage

A linkage system is a series of bars, rods or springs that cause something else to move. A jack-in-the-box has a linkage system.



WHAT CAN I RECYCLE?

DO'S:



DON'TS:



- UNWASHED FOOD CANS
- FOAM CONTAINERS (E.G. MEAT TRAYS)
- YOGURT POTS OR MARGARINE TUBS