



LKS2 D.T: MECHANISMS KNOWLEDGE ORGANISER



Overview

Levers and Linkages

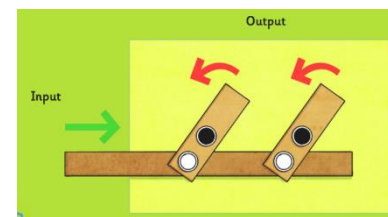
Mechanisms are the parts that make something work.

-Mechanisms are all around us! Most objects that help us in our lives are made up of different mechanisms.

Levers and Linkages are mechanisms that make things move. Many mechanisms take one type of input motion, and output it as a different type of motion.

-In a lever and linkage mechanism, the 'input' is where the user pushes or pulls a card strip. The 'output' is where one or more parts of the picture move.

These mechanisms use a fulcrum (a fixed point around which the lever can pivot) to make things move in arc (curve).



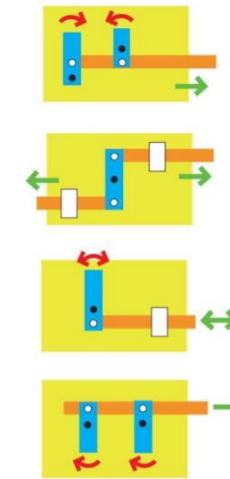
Designing

- Effective levers and linkages should move smoothly
- Effective sliders and levers should create a movement that is appropriate to the subject matter.
- You need to think about who your product is for – what is its purpose and who is going to use it?

Levers

-Consider where you will position the fulcrum. The further it is from the object, the more that the subject at the end of your lever can move!

Explore how to create different movements with your lever and linkage mechanisms



Key Vocabulary

- Mechanism
- Lever
- Linkage
- Input
- Output
- Pivot
- Fulcrum
- Design
- Make
- Evaluate

Example Mechanisms

	Levers	-A Lever is a stiff bar which moves around a pivot. The pivot can be loose or fixed.
	Seesaw	-A <u>seesaw</u> is one example of a lever mechanism. Seesaws are a narrow board supported by a <u>fulcrum</u> in the <u>middle point</u> between the two ends. As one end goes up, the other comes down! - <u>Scissors</u> are another example of a lever mechanism. Scissors have <u>two levers fixed</u> – [handles are squeezed at one end of the levers, the blades come together.
	Linkages	- <u>Linkages</u> are the connections joining one or more levers to produce the type of movement required. <u>Steam Engines</u> use linkages, which are moved by the steam-powered motor at one end. At the other end, they are carefully positioned onto the wheels, thus pushing the wheel around.
	Steam Engines	
	Scissor Lifts	

Making & Evaluating

Making

- Levers and linkages can be made using card, cardboard, lollipop sticks, or another thin, firm material of your product.
- Guides/bridges can be made using strips of card fixed with masking tape.

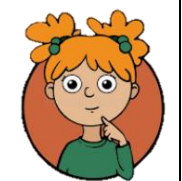


Levers

-To create the hole for the fulcrum, place the card backdrop over a piece of Blu Tack and pressing a pencil through. The fulcrum can be attached using a paper fastener.

Evaluating

- How well does your mechanism work? Does it move smoothly?
- Does it meet its purpose?
- Who would use your mechanism? What would they like about it?
- Where did you position the levers/fulcrum?
- How did this affect the mechanism?
- What else could you do to improve your mechanism?



Health and Safety

- Remove any jewellery and tie back long hair.
- Wear an apron and roll up your sleeves.
- Walk safely and calmly around the classroom/workshop.
- Keep your work area and floor area clear – keep your belongings well clear.
- Follow the teacher's cutting instructions carefully.
- Make sure that you are wearing the correct equipment for tasks.
- If you need to move around with scissors, hold around the closed blades, facing down.
- Report all spillages & clean up properly after yourself.