

**Input** is the motion used to start a mechanism. **Output** is the motion that happens as a result of the **input**.



Think of a see-saw, when you sit on your side of the see-saw (**input**) your friend goes up on the other side. (**output**)

## Did you know?



Did you know that the first children's pop-up books were invented in the 1700s? That's over 300 years ago! Lothar Meggendorfer was a well-known pop-up author in the 1800s.

## What I will know:

- 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.
- Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.
- Investigate and analyse a range of existing products.
- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.
- Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.
- Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages].

## What I already know:

- I will know that an input is the motion used to start a mechanism and an output is the motion that happens as a result of starting the input.
- I will know that structures use the movement of the pages to work.
- I will know that mechanisms control movement.
- I will know how to design a book made up of a front cover and four pages and include a mixture of structures and mechanisms within it.
- I will know how to make mechanisms and/or structures as detailed in my design template by using sliders, pivots and folds to produce movement.
- I will know how to complete the mechanisms and structures as detailed in my design template.
- I will be able to make my book look neater and more attractive by using layers using spacers to hide relevant parts of my mechanisms.

## Vocabulary

**CAD**—computer aided design. To use the computer to design a product, diagram or drawing.

**Caption**—A short piece of writing under a picture that describes or explains the picture.

**Design**—To make, draw or write plans for something.

**Design brief**—A description of what you are going to design and make and how it will work.

**Design criteria**—To help designers to focus their ideas and test the success of them.

**Function** — How an object or product operates or works.

**Input**—Input is the motion used to start a mechanism.

**Linkage**—A set of bars linked to form a mechanism.

**Mechanism**—A system of parts working together.

**Motion**—The movement of an object.

**Prototype**—A simple model that lets you test our your idea showing how it will work.

**Sliders**—A part of a mechanism which allows an object to move from side to side.