



**Area: Construction**

**Year: 3**

**Subject: Design and Technology**

**What should I already know?**

- how to join materials (e.g. glue, tape, staples)
- how to make a structure stronger and more stable
- basic characteristics of some materials
- some simple mechanisms (wheels and axles)

**How will I use this learning in the future?**

In Year 4, I will use a range of tools to create products, such as a saw, hammer and sand paper. I will also learn about other mechanisms like gears, cams and pulleys.

**What vocabulary should I learn?**

<b>aesthetic</b>	how something looks, the appearance
<b>fulcrum</b>	the point against which a lever is placed to get a purchase, or on which it turns or is supported
<b>functional</b>	the practical or useful characteristics
<b>guide</b>	used to keep lever and linkage mechanisms in place and control movement
<b>input</b>	the action required by the user
<b>oscillation</b>	movement back and forth in a regular rhythm
<b>output</b>	the movement created by the force
<b>pivot</b>	the central point on which a mechanism turns
<b>reflective</b>	when light 'bounces' from an object
<b>reinforce</b>	strengthen or support (an object or substance), especially with additional material

**What should I know by the end?**

**Designing**

Develop more than one initial design or keep adapting a design to make it fit purpose. Think ahead and plan equipment needed.

**Evaluating**

Explore existing products and explain how it is made for purpose. Evaluate ideas and products against your own design criteria.

**Materials have both functional and aesthetic qualities.**



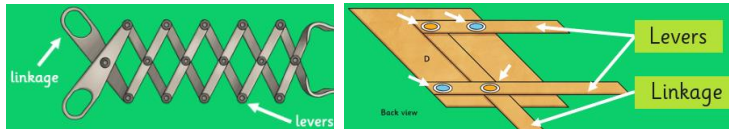
tin/aluminium foil

Functional qualities: flexible, bendy, reflective, non-magnetic, non-absorbent

Aesthetic qualities: shiny, metallic, silver



**Levers and linkages create movement.**



**Lever** - a stiff bar which moves around a pivot, which can be loose or fixed.

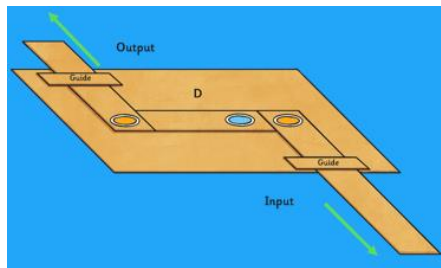
**Linkage** - the strips joining one or more levers.

**Loose pivot** - a split pin that joins card strips together.

**Fixed pivot** - a split pin that joins card strips to the backing card.



**Mechanical systems have an input and output process.**



**Input:** the action carried out by the user (e.g. push, pull, turn).

**Output:** the movement created by the force.

**Guide:** used to keep lever and linkage mechanisms in place and control movement.

**Personal Protective Equipment**



mask



ear defenders



glasses/goggles



gloves



apron



boots

**What should I be able to do?**

**Strengthen, stiffen and reinforce structures in order to create more useful characteristics of products.**

