

# Design & Technology Knowledge Organiser

## Year Three — Pneumatics



### Glossary

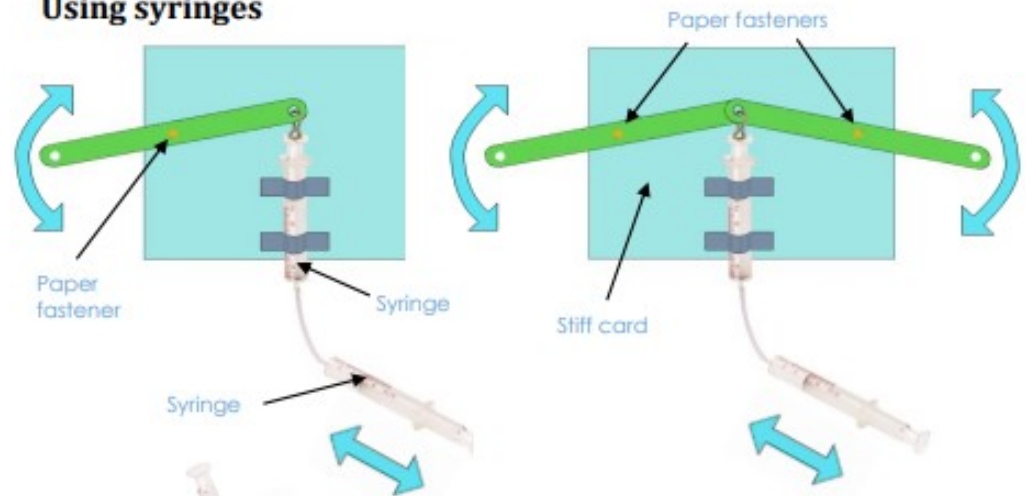
- **Compressed** – something that is squashed, such as air in a tube.
- **Input** – what goes into a system.
- **Output** – what comes out of a system.
- **Pivot** – a point about which a lever turns.
- **Lever** – a beam which turns about a point.
- **Pneumatic** – a system that works using gases (air).
- **Hydraulic** – a system that works using liquids (water).
- **Pressure** – the force used on an object or surface.
- **Inflate** – fill something with air or a gas to make it swell up.
- **Deflate** – remove the pressurised air to allow an object like a balloon to shrink.
- **Syringe** – a tube with a nozzle and plunger for sucking and blowing air or liquids.
- **System** – a set of related parts or components used to create an outcome. Systems have an input, process and an output. In a pneumatic system, the 'input movement' is where the user pushes or pulls a syringe or pump. The 'output movement' is where the object at the end of the tube moves.

### Design decisions

- Children might use a squeezy bottle and a balloon in a container to raise or lower an object or a lever.
- They might choose to use three syringes connected by a T-connector so that two objects move backwards and forwards.
- Adding levers and linkages allows children to design and make more complex mechanical systems.



### Using syringes



### Links to prior learning

Explored simple mechanisms, such as sliders and levers, and simple structures.

Learnt how materials can be joined to allow movement.

Joined and combined materials using simple tools and techniques.