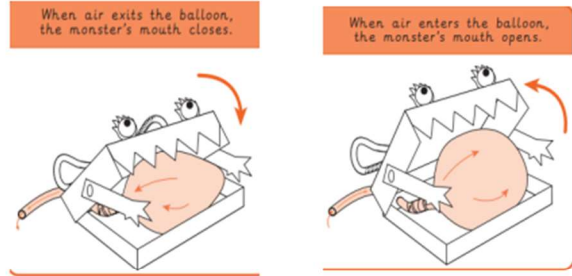




Pneumatic Toys

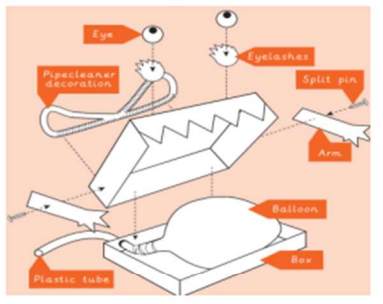
A pneumatic system is a mechanism that runs on air.



Exploded Diagram

An exploded diagram allows us to see how a product is put together and all of the components inside.

Drawing your design in this way will help you to prepare for the making stage of your product.



Making your pneumatic toy



You will need:  
- a box  
- plastic tubing  
- a balloon  
- scissors.



Using your initial design add the finishing touches to your toy.

Remember to think about colours, and shapes to bring your toy to life!

**Vocabulary**

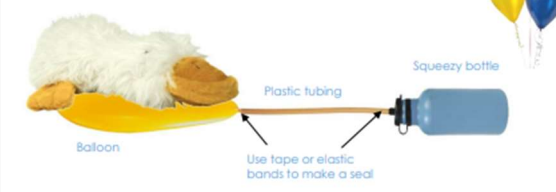
- Pneumatic
- Exploded diagram
- Function
- Input
- Linkage
- Mechanism
- Motion
- Net
- Output
- Pivot
- Pneumatic System

Remember to hold your mechanism in place to check it still works when inside your toy.

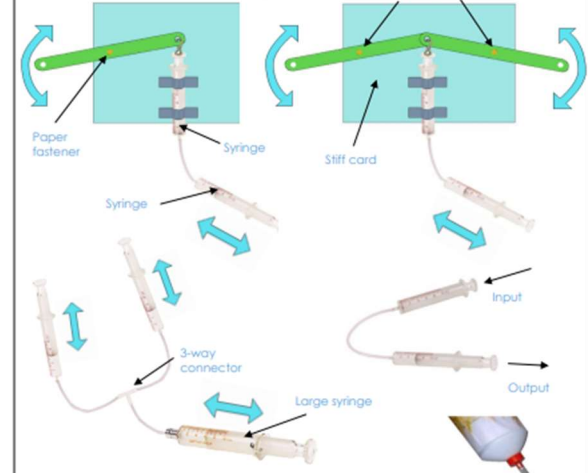


Teaching aids to demonstrate pneumatic systems

Squeeze the bottle (input movement) to inflate the balloon (output movement) and raise the toy.

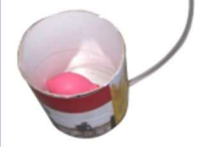


Using syringes



Design decisions

- Children might use a squeeze 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.



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.