

Play Resource Presents Science from Scrap

Air Pressure

You will need:

2 litre plastic bottle

Plastic tray or pot

Bendy straw

Sharp pencil or tool

Blu Tac

Water



How to use these resources for enquiry in Science/Maths

The science focus here is on air pressure and could be included in lessons connected with the weather. The demonstration can be extended to allow the children to plan and investigate their own activities to answer further questions related to air pressure.

Instructions

- Use something pointy to make a hole in the side of a plastic bottle, roughly one third of the way up from the bottom.
- Insert the straw into this hole so that it is pointing slightly downwards, with the bendy part outside the bottle.
- Seal around the straw completely, using the Blu Tac.
- Place the plastic tray under the straw.
- Fill the bottle with water and immediately put your hand over the top. No water will come out of the straw.
- Remove your hand and the water will flow (as long as the water level in the bottle is above the straw) as the air can now exert a force (push down) on the water surface.
- With a little practice and a sleight of hand, this can be demonstrated as a “magic trick”.

Possible links to WAU topics

Air, Forces

Background Knowledge

The air around us exerts a pressure on everything. When your hand is over the bottle, the water will not flow as the air cannot push down on the water surface. Removing your hand allows the air pressure to push the water through the straw.

Key Questions.

- What happens when you put your hand over the top of the bottle?
- What happens when you remove it?
- Why do you think this is?
- What happens when the water level goes below the straw hole?
- How does the height of the level of the water affect how it comes out of the straw?