

# Play Resource Presents Science from Scrap

## Model Lung

### You will need:

1 small plastic bottle with the bottom cut off by the teacher.

Scissors

Masking tape and/or sellotape

2 balloons

Strong elastic band



### How to use these resources for enquiry in Science/Maths

This model can be used when studying the human body, body organs and systems. It uses a bottle to represent the rib cage, with the top balloon representing one of the lungs and the bottom balloon representing the diaphragm.

### Instructions

- If the cut edge of the balloon is rough, cover it with masking tape.
- Put one of the balloons inside the top of the bottle.
- Stretch the neck of the balloon over the top of the bottle.
- Knot the neck of the second balloon and cut off the rounded part at the top of the balloon, opposite the knot.
- Stretch this balloon tightly across the open bottom of the bottle.
- Secure this with the elastic band and sellotape.
- The knotted end acts as the diaphragm. Pull downwards on this to reduce the pressure in the bottle and see the second balloon, the lung, expand.
- Release your pull and push the balloon slightly into the bottle and the "lung" will deflate.

#### Possible links to WAU topics

Ourselves, health and Safety

### Background Knowledge

When we breathe, air is inhaled into and exhaled from our lungs. Here oxygen is taken from the air and passed into the blood stream and carbon dioxide is expelled. The diaphragm is a muscle which separates the chest from the abdomen and when it contracts, it expands the lungs to allow air to be breathed in.

### Key Questions

- Put your hands on the lower part of your rib cage. What do you notice when you breathe in?
- What happens to the top balloon when you pull on the knotted balloon at the bottom?
- What do you see happening when you let the bottom balloon return to its original position?
- Can you use this model to explain what happens when we breathe in?