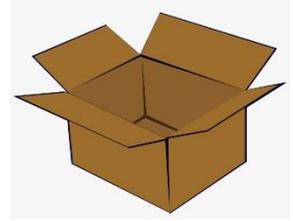




Science Activity

Making a Lung

Time to prepare: 5 - 10 minutes



□ Please, stay safe and ask a grown up to supervise you

Resources/ things you need

- Plastic bottle
- Straw
- Elastic band
- Scissors
- Two balloons
- Cellotape
- Playdough, blue tack, or plasticine

What to do

The lungs are an essential organ to all mammals. In this experiment we can find out how lungs work by making a lung model.

1. First, carefully cut your bottle to about half the size.
2. Next, tie a knot in one end of a balloon and cut off the fat end and stretch the balloon around the bottom of your bottle. Secure the balloon with cellotape.
3. Now, put a straw in the neck of the other balloon and secure tightly with the elastic band but not so much that you crush the straw. The air must flow through so test it with a little blow through the straw to see if the balloon inflates.
4. Then, put the straw and balloon into the neck of the bottle and secure with playdough, blue tack or plasticine to make a seal around the bottle but take care not to crush the straw.
5. **Finally, hold the bottle and pull the knot of the balloon at the bottom. What happens?** You should find that the balloon inside the bottle inflates and as you let go the balloon deflates.

This fake lung demonstrates how our lungs work. Air is taken in through the mouth and nose, passes down the windpipe and into our lungs. The diaphragm at the bottom of our chest moves down to create more space.

As we breathe out the diaphragm raises again. The knotted balloon represents the diaphragm and the balloon inside the container the lung. That's how lungs work!!

Background and the link to learning

The lungs are part of our **breathing system** which has two functions: **Ventilation** - the movement of air into and out of the lungs and **Gas exchange** - this is where gases are exchanged between tiny sacs called alveoli and the blood. Under the lungs is the **diaphragm** which is a muscular sheet separating the lungs from the **abdomen**. Your diaphragm moves up and down to increase the space in your chest just like the balloon at the bottom of the model.

As the knotted balloon is pulled it creates more space inside the bottle. Air then comes down the straw and fills the balloon with some air to fill the space! When you let go of the knot the space no longer exists, so the air from the balloon is expelled making it deflate. Inside the lungs are a network of tubes which allow air to pass through. Air is warmed, moistened and filtered as it travels through the mouth and nasal passages. It then passes through a network of tubes, eventually reaching tiny sacs called alveoli which are where gas exchange occurs.

Pictures



[Link to other similar activities](#) - Please see digestion.

