How Does a Lung Work?

Human Body | 20-40 minutes

In this activity, students will build a model of a lung to learn about how the lungs and diaphragm work together.

Materials Needed

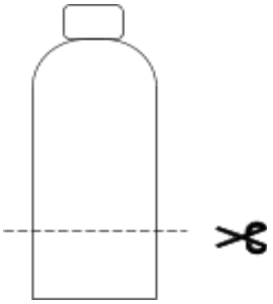
Per student:

- 1 plastic drink bottle (may want to be pre-cut depending on age)
- 1 straw
- 1 elastic band
- 2 balloons
- 1 glob of playdough

A few per group:

- Scissors

Steps:



1. Carefully remove the bottom of the bottle by poking a hole with the scissors and then cutting around the bottle.
2. Tie a knot in the open end of one balloon, then snip off the large sealed end.
3. Place the freshly cut balloon opening around the bottom of the drink bottle.
4. Put a straw into the opening of the other balloon, using a rubber band to hold it in place. Be sure that the straw is not crushed. You should be able to blow air through the straw and into the balloon.

5. Insert the straw and balloon into the neck of the drink bottle, leaving only part of the straw sticking out the top. Again, be careful not to crush the straw.
6. Use playdough to mount the straw in the bottle opening, sealing the area around the straw completely.
7. Hold the bottle and gently pull on the balloon knot that is connected to the bottom of the bottle. Watch what happens to the balloon inside the bottle. Let go of the knot and watch what happens.

Explanation:

When you pull down on the knotted balloon, it makes the inside of the bottle bigger. Something has to fill in that extra space so air comes rushing in through the straw. The air coming in fills up the balloon and it expands. When you let go of the knot, the air goes out and the balloon deflates. That is just like how our lungs work. When we breathe in (the straw) our lungs fill (the hanging balloon) and our diaphragm moves down (the knotted balloon) to make room.

Real World:

Every day our lungs breathe in 11,000 liters of air! That is equal to 3000 milk jugs or about 20,000 of the bottles you just used!