



Science Experiment: Just Breathe! Project: Health

Supplies:

- Plastic Bottle (1L Pop Bottle works well)
- Straw
- Rubber Band
- Scissors
- 2 balloons
- Playdough/clay

Time: 20 minutes

What to Do:

1. Carefully cut off the bottom of your bottle.
2. Tie a knot in the neck of the first balloon. Cut off the opposite end of the knot so that the balloon is open with the knot keeping the bottom sealed.
3. Stretch the end that you cut around the bottom of the bottle.
4. Put the straw in the neck of the other balloon and secure it with the rubber band. Be careful not to crush the straw when you secure the balloon. Blow through the straw to make sure it is sealed with the balloon.
5. Put the balloon and the straw in the neck of the bottle (so that the second balloon is inside the bottle with the straw sticking out).
6. Secure the straw with the playdough, making sure that it does not let air in or out.
7. Pull down on the knot of the balloon at the bottom. Watch what happens inside the bottle as you do this.

Reflect:

1. Can you describe what part of the body you made? What does the inside balloon represent? What is the straw? What body part is the bottom balloon?
 - a. The diaphragm is a skeletal muscle that extends across the bottom of the heart and lungs
2. What happened when you pulled on the bottom balloon? What happened when you released the knot?
3. Take a deep breath. Can you feel your lungs expand?

Apply:

Think about the bottom balloon. Do you need the bottom balloon to make the experiment work without forcing air through the straw? *The bottom balloon represents the diaphragm. When you breathe, your diaphragm contracts, increasing the volume of the thoracic cavity, to allow your lungs to fill with air.* Discuss why it is important to keep your lungs healthy. What kind of things should you avoid that can damage your lung? Can you think of a way to simulate those damages with the experiment?