

## A WORKING LUNG MODEL

### 1. Introduction

Your lungs pull in air about 30 times every minute, and push it out just as often, all without you really thinking about it. How do they work?

We're going to show you how to build a working model of your lungs, so you can see for yourself!

### 2. Here's what you'll need...

- a) An OLD pair of scissors (not your mother's good ones).
- b) Six inches of surgical tubing.
- c) 2 Large balloons
- d) A large piece of broken party balloon.
- e) Two rubber bands
- f) Plasticine
- g) A clear plastic one-liter bottle



### 3. Method

#### 1) Step One: Assemble the "lungs"

Fix a balloon on the opening of a small piece of plastic tube with the rubber band. Repeat it with the other balloon. Fix the tubes with a longer piece of plastic tube. Use the plasticine to make an airtight seal.

#### 2) Step Two: Prepare the "chest cavity"

Carefully cut off the bottom of the bottle, using the scissors. Place the lungs (balloons and connector) inside, and seal the plastic tube into the neck of the bottle with the rest of the plasticine to make an airtight fit.

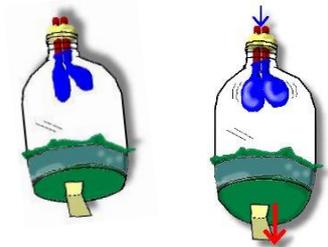


#### Step Three: Prepare the "diaphragm"

Cut the third balloon in half. Place it over the bottom of the bottle, pulling it up around the sides. Make the balloon as taut as you can – like the top of a drum.

#### Step Four: Start breathing!

O.K., we're all done. Here's how it works. The bottle represents your chest, with the neck at the top and the lungs inside.

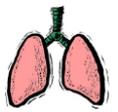


### 4. EXERCISES

#### FILL IN THE GAPS

The lower part of the balloon represents the ....., the main breathing **muscle**. Pull it down, as though you were ..... This lowers the air pressure in the bottle (the ..... **cavity** becomes larger, and the air ....., lowers). Air from outside ..... in and makes the two balloons expand, just like the real ..... inside your chest.

Inhaling,      pressure      lungs      chest      rushes      diaphragm



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**EXPLAIN THE PROCEDURE (work in pairs)**

Use these words:

NOUNS: Bottle, balloon, plasticine, tubes, scissors, rubber band

VERBS: Cut, fix, make, place,... (only using the present tense)

OTHERS (you can use the dictionary, if necessary)

First .....

Then.....

Next.....

Finally.....

**EXPLAIN HOW WE BREATHE (in pairs)**

VOCABULARY: Pull in, push out, contract, relax, expand, inhale, exhale, inflate, deflate, exchange, come in, go out.

INHALATION \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

GAS EXCHANGE \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

EXHALATION \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**VOCABULARY**

|         |  |
|---------|--|
| BALLOON |  |
| CHEST   |  |
| TRACHEA |  |
| ALVEOLI |  |
| DRUM    |  |

**LABEL THE DIAGRAM**

