

Name\_\_\_\_\_ MOD\_\_\_\_\_ Date\_\_\_\_\_

## **Model of the Lungs**

### **Materials**

- Plastic bottle
- 1 straw
- Tape
- Scissors
- 2 small balloons
- 1 larger balloon
- Clay

### **Method**

1. Remove the bottom of your bottle
2. Tie a knot in one end of the larger balloon and snip of the fat end
3. Stretch this end around the bottom of your plastic bottle
4. Cut a straw into 2 pieces
5. Place a piece of straw in the neck of each of the other balloons and secure tightly with a piece of tape but not so 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.
5. Put the straw and the balloon into the neck of the bottle and secure with the clay making a seal around the bottle - make sure that again, you don't crush straw.

Get the teacher to approve your model of the lungs as demonstrated.

**NOW** you are going to make additions to your model to show how the lungs are affected by the disease assigned to you using information from the websites below. You may bring in any extra materials and also use the ones provided for you in class.

## **IMPORTANT!**

After you have created your model of your diseased lungs, answer the following questions in a video, essay, or powerpoint:

1. How do the lungs work when they are healthy [Explain how air passes through the lungs and body]?
2. How are your lungs and the other parts of your respiratory system affected by your disease?
3. What are the causes of your disease?
4. What are the symptoms that were not mentioned in question 2?
5. How can this disease be treated?
6. Explain how your model shows the effects of the disease on the lungs.
7. Explain how the respiratory system works to maintain homeostasis.

### 1. Emphysema

<http://www.mayoclinic.org/diseases-conditions/emphysema/basics/definition/con-20014218>

### 2. Bronchitis

[http://kidshealth.org/teen/diseases\\_conditions/respiratory/bronchitis.html](http://kidshealth.org/teen/diseases_conditions/respiratory/bronchitis.html)

### 3. Cystic Fibrosis

<http://www.cff.org/aboutcf/>  
<http://www.patient.co.uk/health/Cystic-Fibrosis.htm>

### 4. Asthma

<http://www.nhlbi.nih.gov/health/health-topics/topics/asthma/>

<http://www.mayoclinic.org/diseases-conditions/asthma/basics/definition/con-20026992>