

RAFT IDEAS

Topics: Anatomy, Health,
Lung structure & Function

Materials List

- ✓ Wrapped straws
- ✓ Timer or clock with a second hand
- ✓ Optional: Scissors
- ✓ Optional: straw-type coffee stirrers

This activity can be used to teach:

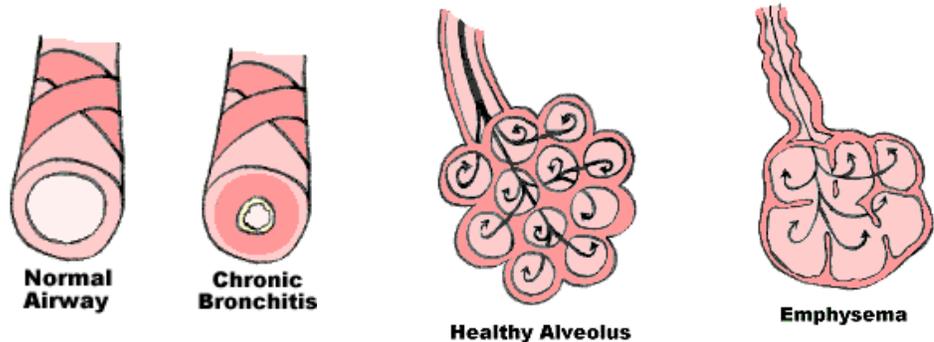
- Body structures and systems (Next Generation Science Standards: Grade 4, Life Science 1-1; Middle School, Life Science 1-3)
- Health and Drug Awareness (Upper Elementary and above)



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Catching Your Breath

How Does It Feel to Have Lung Disease?



Images from: The Lung Association (Canada): <http://www.lung.ca>

This quick and simple model may help your students appreciate living with lung disease... and possibly convince them to stay away from smoking.

To Do and Notice

1. If desired, cut the straws (in their wrappers) in half to reduce classroom materials.
2. Breathe through the straw for 30 seconds. Notice that reduced airflow makes breathing more difficult. How much easier is breathing without the straw?
3. Stand up. Do 15 jumping jacks.
4. Now, repeat breathing through the straw for 30 seconds. Notice how a little exercise makes breathing so much more difficult. How might you feel if you could never take out the straw and take a regular, deep breath?

The Science Behind the Activity

Chronic Obstructive Pulmonary Disease (COPD) refers to many disorders that obstruct the airways of the lungs. The most common form, however, is a combination of chronic bronchitis (inflammation of pathways connecting the windpipe and the sacs of the lungs) and emphysema (destruction of air pathways in the lungs and walls of the alveoli). Decreased lung function means decreased oxygen to the body and brain. While medicines and other interventions can decrease symptoms and increase quality and length of life, there is no cure for lung disease. Smoking causes between 80% and 90% of lung disease cases.

Taking it Further

To model advanced COPD, repeat the experiment using the straw-type coffee stirrer.

Web Resources (Visit www.raft.net/raft-idea?isid=29 for more resources!)

For more information on COPD and other lung disorders, visit:

- The Lung Association (Canada) at: http://www.lung.ca/diseases-maladies/index_e.php
- The American Lung Association at: <http://www.lungusa.org>

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