Gasping For Air

Breathing can be a matter of life and death.

Use straws to demonstrate how an asthma attack can affect a person’s breathing.

Assembly
1. Cut a clear drinking straw in half.
2. Take the remaining half straw and slit the half straw from end to end. Next cut the slit straw in half to make 2 sections ¼ the length of the original straw.
3. Slit the 2nd clear drinking straw from end to end. Cut the straw into 1/4 sections.

To Do and Notice (Limit breathing only through a straw to 15 seconds or less)
1. Insert an end of the un-slit half straw into the scoop end of a scoop straw. Insert the clear half straw far enough into the scoop straw to make an airtight fit.
2. Have the students place the mouth end of the scoop straw between their lips. Ask students to breathe though the straw, slowly in and out, to model the normal breathing experienced before an asthma attack occurs.
3. Fully insert 1 slit straw section into another slit straw section.
4. Pinch 1 end of the paired slit straws to make the diameter smaller and insert ¾ of the paired slit straws into the open end of the straw inserted into the scoop straw.
5. Repeat step 2 to model a person’s breathing when the airway has become restricted due to a swelling of the airway’s lining.
6. Repeat steps 4, adding another slit straw section, then step 2, in turn, to model additional restrictions of the airway. Each additionally inserted slit straw models breathing during an asthma attack that is become more severe.
7. When all the slit straws have been inserted look into the “restricted airway”. Compare the size of the restricted airway to the opening of the scoop straw.
8. How does breathing through the restricted airway compare to breathing with an unrestricted airway? To give a “side by side” comparison all the clear straws can be removed and step 2 repeated to compare the restricted and the unblocked (or open) airway.
9. Reinsert the clear straws and place a finger over the end of the slit straws. Repeat step 2 to model breathing when there is a mucus plug blocking the airway.

The Science Behind the Activity

Asthma affects people of all ages affecting over 22 million people in the United States alone. A person’s airway can become restricted by inflammation, muscle spasms and/or mucus. Inflamed airways can become sensitive to certain irritants (e.g., cigarette smoke, air pollution, chemicals) or allergens (e.g., dust, animal fur, pollen), triggering muscle spasms and mucus formation.

Web Resources (Visit www.raft.net/raft-idea?isid=606 for more resources!)
• Lung disease links - http://www.nhlbi.nih.gov/health/dci/Browse/Lung.html
• American Lung Association - http://www.lungusa.org/