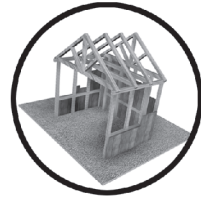
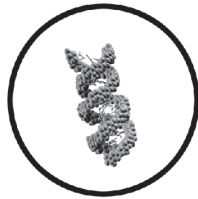


ACTIVITY 2

BUILD A DIAPHRAGM MODEL STUDENT PAGE A



When you breathe, air is pulled into your nose or mouth. The air then goes through your windpipe, which is also called the trachea. The trachea branches off into two smaller tubes going to your two lungs. The lungs do not take in air by themselves. The air goes into our lungs because our chest cavity gets bigger. This happens when your chest muscles move the ribs out. At the same time, a sheet of muscle under the ribs called the diaphragm flattens. This makes the chest cavity bigger, pulling air into your lungs. To breathe out, your ribs move in and your diaphragm curves upward. This makes your chest cavity smaller, forcing the air out of your lungs.

1. In your Science Notebook, design, draw, and describe a model that shows how the diaphragm works to help you breathe.
2. Include in your Science Notebook a list of materials and directions for building your model.
3. Build the model and test it to see that it works.
4. Make any changes to the directions so that someone else could build your model.

ACTIVITY 2 building a diaphragm model

5. Answer these questions in your Science Notebook and compare your answers with others in your group.

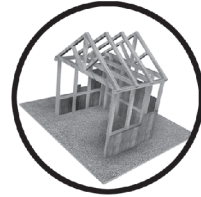
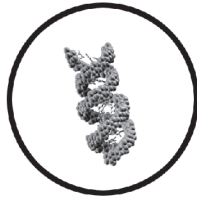
- a)** How do you know that air is entering into your “lung?”
- b)** How can you show that a lot of air is entering?
- c)** How can you show that only a little air is entering?
- d)** How does air get out of the lung?

6. What other questions do you have about how air enters and leaves your body? List those questions in your Science Notebook.

7. Draw a picture of your model and label what each part represents in your body.

ACTIVITY 2

BUILD A DIAPHRAGM MODEL STUDENT PAGE B



When you breathe, air is pulled into your nose or mouth. The air then goes through your windpipe, which is also called the trachea. The trachea branches off into two smaller tubes going to your two lungs. The lungs do not take in air by themselves. The air goes into our lungs because our chest cavity gets bigger. This happens when your chest muscles move the ribs out. At the same time, a sheet of muscle under the ribs called the diaphragm flattens. This makes the chest cavity bigger, forcing air into your lungs. To breathe out, your ribs move in and your diaphragm curves upward. This makes your chest cavity smaller, forcing the air out of your lungs.

1. In your group, create a model of the diaphragm

2. Insert the tube into the neck of the balloon and fasten it with a rubber band so that no air gets into the balloon, except through the tube.

3. Push the end of the tube through the hole in the cup so that the balloon is inside the cup and the tubing is sticking out through the hole in the top.

4. Stretch the latex over the open end of the cup and secure it with a rubberband.



Collect your materials

- a clear plastic cup with tube
- 1 balloon
- latex square
- rubber bands (1 large and 1 small)
- Science Notebook

ACTIVITY 2 building a diaphragm model

5. Pull down gently on the diaphragm. What happens to the “lung?” Record your answer in your Science Notebook.

6. Answer these questions in your Science Notebook and compare with others in your class.

- a) How do you know that air is entering your “lung?”
- b) How can you show that a lot of air is entering?
- c) How can you show that only a little air is entering?
- d) How does air get out of the lung?

7. What other questions do you have about how air enters and leaves your body? List those questions in your Science Notebook.

8. Draw a picture of your model and label what each part represents in your body.

9. Read “Breathing In and Out” and “Inhaling and Exhaling,” in How Your Body Works and write a summary of what you have learned in 3-5 sentences.