

Lesson Plan By: Leanne Rakestraw

Lesson: How can we make a model of lungs?

Length: 1 hour

Age/Grade: 5th

Academic Standard:

5.4.9 Explain, that like other animals, human beings have body systems

Performance Objective:

Given materials, students will create a model of the lungs.

Assessment:

The teacher will use formative assessment to make sure students are completing their lungs correctly. Also, the teacher will collect the lungs at the end the project to make sure they are made correctly.

Advanced Preparation: model or illustration of chest cavity, observation sheet, plastic cup, drinking straw, small plastic bag, small balloon, rubber band (one of these for each student), modeling clay, masking tape and scissors

Procedure:

Introduction:

1. Ask:
 - a. How do your lungs work to inhale and exhale gases?
2. Have students put their hands on their chests and tell them to take a deep breath
 - a. What did they feel?

Step-By-Step:

1. Before beginning, punch a hole in each plastic cup using a heated tip of an ice pick
2. Guide the students through the activity
 - a. Give each student a drinking straw, small plastic bag, two rubber bands, clear plastic cup, a small balloon, and scissors
 - b. Cut the straw in half
 - c. Stretch and blow up the balloon a few times
 - d. Using a tightly wound rubber band, attach the balloon to the straw. Be sure the balloon does not come off when you blow into the straw, and that the rubber band does not crush the straw
 - e. Push the free end of the straw through the cup's hole and pull until the balloon is in the middle of the cup. Seal the area around the hole and straw with modeling clay
 - f. Place the open end of the cup into the small plastic bag and fold the bag around the cup, securing it tightly with a rubber band or masking tape.
 - g. Ask

- i. What do you think might happen to the balloon if you pull down on the plastic bag at the bottom of the cup?
- h. Pull down on the plastic bag and have students record observations on their observation sheets
- i. Ask
 - i. What do you think might happen if you push up on the plastic bag?
- j. Push up on the plastic bag and have students record their observations.

Closure:

1. Ask
 - a. What changes did you observe in the system?
 - b. Why do these changes happen?
 - c. Where in your body do you have something that works like this?
2. Refer to the picture of the chest cavity
 - a. Guide students to identify the parts of the body used in breathing and describe how they function
3. Ask
 - a. How is this physical model like the lungs?

Adaptations:

Have a model pre-made for students who cannot make one on their own.

Enrichments:

Instead of talking about it, have students write in a journal “How is this physical model like our real lungs?”

Reflection: Done after the lesson. Teachers evaluate the effectiveness of what was taught.

Adapted from: Carin, Arthur A. Activities for Teaching Science as Inquiry. “How can we make a model of lungs” Prentice Hall. New Jersey. 2005: pg 193-194