

Summary Description

This is the second in a series of 8 lessons that introduces the student to human anatomy.

Learning Objectives

To have the student learn a few key facts about the respiratory system.

Approximate Time for Lesson

50 minutes

Suggested Maturity Level for Instruction

Student should be able to read simple words and perform simple addition and subtraction. Also, student should be able to sit still and engage in one-on-one conversation.

References:

Respiratory System, Discovery Kids - <http://yucky.discovery.com/noflash/body/pg000138.html>

Welcome to the Respiratory System, ThinkQuest - <http://library.thinkquest.org/5777/resp1.htm>

Materials Needed

1. Internet Access - Pull up the following:
 - a. Picture of the respiratory system (go to http://static.newworldencyclopedia.org/thumb/d/d0/3DScience_respiratory_labeled.jpg/300px-3DScience_respiratory_labeled.jpg)
 - b. Picture of the lungs (go to http://www.medical-look.com/systems_images/lungs_large.gif)
 - c. Video on the Respiratory System (go to <http://www.youtube.com/watch?v=CoCrN665K4Q>)
2. Word Search Worksheet on Respiratory System

Preparation

Make sure you have materials open, printed and/or available prior to beginning the lesson.

Script

Introduction (5 minutes)

1. Teacher: Ok. So last lesson we learned about the skeletal system, which is a fancy word that means all about the bones in your body. Can you tell me why our bones are important? [Engage the Student in conversation but come to the point that any of the following is correct: 1) bones give us structure, 2) bones protect the stuff inside our bodies (heart, brain, etc.), 3) bones make blood (red and white blood cells), 4) bones replaces old bones, and 5) bones store calcium]

2. Teacher: Good. Now, today we're going to learn about a very basic thing that we do to live. We're going to learn about breathing - why we breathe, what happens when we breathe and all the parts in our body related to breathing.
3. Teacher: In fact, the entire collection of all of our body parts that has to do with breathing is called the respiratory system. Can you say "respiratory system"? [Have the Student repeat the word "respiratory system" several times]
4. Teacher: Great, so are you ready to learn about the respiratory system? [Get positive response from Student and begin lesson]

Lesson (40 minutes)

1. Teacher: Great. Now, I'll bet you know that if you can't breathe then you won't survive too long, but do you know why you can't survive long without breathing? [Engage the Student in conversation]
2. Teacher: Those are some good answers. The reason why people need to breathe is because their cells (the building blocks to all living things - remember our lesson on microbes?) need air to live. If your cells don't get air, then they will die and since you are made up of those cells, you will also die along with your cells. And that's why you need to be breathing - it's really to keep your cells alive, which in turn, keeps you alive. Does that make sense? [Get positive response from Student and begin lesson]
3. Teacher: Good. Now let's study exactly what happens with the air that is taken into your body by breathing. First, let me introduce you to the respiratory system. [Show the Student the picture of the respiratory system]
4. Teacher: So looking at this picture, where does the air first enter our body? [Engage the Student in conversation but make the point that air enters through the nose and mouth]
5. Teacher: Good. When we breathe, air goes into our nose and mouth. [Point to the nose and mouth in the picture of the respiratory system]. And you know what? A muscle called the diaphragm is what lets us inhale. [Point to the diaphragm in the picture of the respiratory system]. When we relax our diaphragm, that's when we exhale.
6. Teacher: Anyway, once the air is in our nose and mouth, it goes through a tube-like thing in our neck called the wind pipe. [Point to the trachea in the picture of the respiratory system] Air is like wind and since the tube is like a pipe, I guess that's why it's called a windpipe.
7. Teacher: Once the air goes through our windpipe, it then goes into our lungs. [Point to the trachea in the picture of the respiratory system] As you can see, we have 2 lungs. Here's a better picture of our lungs. [Show the Student the picture of the lungs]
8. Teacher: Lungs take up almost all the space in our chest. In fact, if we could fill up our chest with 10 blocks, then our lungs would make up 9 out of those 10 blocks. They're pretty

big, but they have to be since we need a lot of air to satisfy the 100 trillion air-hungry cells in our body.

9. Teacher: And to make sure that our lungs are getting the most air, our lungs are soft and spongy. The inside of our lungs are filled with soft finger-like things called bronchi. [\[Point to the blue larger tubes in the picture of the lungs\]](#)
10. Teacher: These bronchi branch out into smaller bronchioles [\[Point to the smaller blue tubes branching out from the larger blue tubes in the picture of the lungs\]](#) which further branch out into these round looking sacs called alveoli [\[Point to the round blue sacs branching out from the smaller blue tubes\]](#) and it's in the alveoli where all the magic happens.
11. Teacher: We all have about 300 million alveoli in each lung and each alveolus exchanges a tiny bit of air that came from your nose or mouth for another kind of gas that our body makes but doesn't need, called carbon dioxide. Anyway, the alveoli expel this carbon dioxide and take in the new air. The carbon dioxide (the gas we don't need) is taken out of our body each time we exhale.
12. Teacher: As for the good air, the alveoli take it in and it is now ready to transport to all the cells in your body.
13. Teacher: Ok - great. Here we are with all this good air ready to give to our cells, all inside our alveoli. But do you know exactly what does all that transporting of the good air to our cells? [\[Engage the Student in conversation\]](#)
14. Teacher: If you said blood you're right! Actually, it's the red blood cells in our blood that transport all that good air to the rest of our cells in our body. We'll learn more about blood in our next lesson. But for now, let's watch this short video on the respiratory system that'll help you remember our lesson. [\[Click below to show the video on the respiratory system\]](#)
15. Teacher: Ok - now that you're an expert on the respiratory system, I want you to complete this word search worksheet. [\[Pass out the word search worksheet on the respiratory system\]](#) There are some words that you learned that are at the bottom of this worksheet. You will need to find these words in the word search. You may begin. [\[Give the Student 5-10 minutes to complete this activity\]](#)
16. Teacher: Great job! OK - time for review. Go stand up and get in front of the class (consider inviting other members of the family also to set the stage). [\[Ask Student the following:](#)
 - a. [Why do we breathe? Because our cells need air to live](#)
 - b. [What is the tube-like thing in our neck that brings air into our lungs from our nose and mouth? The windpipe](#)

- c. What is the name of the muscle that lets us inhale air? The diaphragm
- d. What do alveoli do? They exchange gas that our body doesn't need (carbon dioxide) for good air that our body needs.
- e. What carries the good air from the alveoli to our cells? Blood (specifically, red blood cells)

Teacher reviews any questions that the Student missed].

Wrap Up (5 minutes)

Teacher: [Clapping] You did GREAT! Wonderful job! Are there any questions that you have regarding our respiratory system? [Engage in conversation with the Student and follow up with questions you cannot answer by researching the Internet]