



KidsHealth.org/classroom

Teacher's Guide

This guide includes:

- Standards
- Related Links
- Discussion Questions
- Activities for Students
- Reproducible Materials

Standards

This guide correlates with the following National Health Education Standards:

Students will:

- Comprehend concepts related to health promotion and disease prevention to enhance health.
- Analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.
- Demonstrate the ability to access valid information and products and services to enhance health.
- Demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.

National Health Education Standards:
<http://www.cdc.gov/healthyschools/sher/standards/index.htm>

These activities will help your students learn how the respiratory system performs its continuous work and what they can do to promote respiratory health.

Related KidsHealth Links

Articles for Teens:

Lungs and Respiratory System

TeensHealth.org/en/teens/lungs.html

Coping With Colds

TeensHealth.org/en/teens/colds.html

Flu Facts

TeensHealth.org/en/teens/flu.html

Asthma

TeensHealth.org/en/teens/asthma.html

Bronchitis

TeensHealth.org/en/teens/bronchitis.html

Pneumonia

TeensHealth.org/en/teens/pneumonia.html

Sinusitis

TeensHealth.org/en/teens/sinusitis.html

Cystic Fibrosis

TeensHealth.org/en/teens/cystic-fibrosis.html

Tuberculosis

TeensHealth.org/en/teens/tuberculosis.html

Resources for Teachers:

Asthma Special Needs Factsheet

KidsHealth.org/en/parents/asthma-factsheet.html

Asthma and Sports Special Needs Factsheet

KidsHealth.org/en/parents/asthma-sports-factsheet.html

Exercise-Induced Asthma Special Needs Factsheet

KidsHealth.org/en/parents/exercise-asthma-factsheet.html

Cystic Fibrosis Special Needs Factsheet

KidsHealth.org/en/parents/cf-factsheet.html

Discussion Questions

Note: The following questions are written in language appropriate for sharing with your students.

1. How does your body pull air in and push it out? Where does the air travel? How does oxygen move from the lungs to your blood and then to cells throughout the body?
2. Runny nose, sneezing, stuffy head - you know what it's like to have a cold. What other problems can affect the respiratory system? What can you do to help keep your respiratory system healthy?
3. Air pollutants are all around us. What are some of the ways your respiratory system filters these pollutants from the air you breathe?



Activities for Students

Note: The following activities are written in language appropriate for sharing with your students.

A Tale of Two Gases

Objectives:

Students will:

- Learn the path of oxygen through the respiratory system, from the air to the blood and tissues
- Learn the path of carbon dioxide through the respiratory system, from the tissues and blood to the air

Materials:

- Computer with Internet access
- Pen or pencil and plain paper, or computer word processing program

Class Time:

30 minutes

Activity:

[Note to instructor: In addition to the article, "Lungs and Respiratory System" (TeensHealth.org/en/teens/lungs.html), it will be helpful if your students also read, "Heart and Circulatory System" (TeensHealth.org/en/teens/heart.html), to complete this activity.]

Check out TeensHealth.org to learn how the respiratory system exchanges gases between the air and the body. Once you've read about it, you'll be ready to live it! First, let's say you're an oxygen molecule. In a few paragraphs, describe your trip as you go from being in the air to entering the respiratory system and, finally, a person's body tissues. Next, put it in reverse. As a carbon dioxide molecule, describe your trip from the body's tissues to the outside air.

Extension:

Choose one health problem related to the respiratory system, research it at TeensHealth.org, then write a Top Ten list of facts about that disease or condition. Make sure to include symptoms, how it affects the respiratory system, diagnosis methods, treatments, and prevention methods (if applicable).

Reproducible Materials

Quiz: Respiratory System

KidsHealth.org/classroom/9to12/body/systems/respiratory_quiz.pdf

Quiz Answer Key: Respiratory System

KidsHealth.org/classroom/9to12/body/systems/respiratory_quiz_answers.pdf



Name: _____

Date: _____

Quiz

- Without this gas, the body's cells would die:
 - Carbon dioxide
 - Hydrogen
 - Nitrogen
 - Oxygen
- Tiny hairs called _____ protect the nasal passageways and other parts of the respiratory tract, filtering out dust and other particles that enter the nose with the breathed air.
- True or false: The two openings of the airway (the nasal cavity and the mouth) meet at the **larynx**, or throat, at the back of the nose and mouth.
- True or false: The **pharynx**, or voice box, is the uppermost part of the air-only passage. This short tube contains a pair of vocal cords, which vibrate to make sounds.
- Air enters the lungs through these parts of the respiratory system, in this order:
 - Alveoli, bronchi, bronchioles
 - Alveoli, bronchioles, bronchi
 - Bronchi, bronchioles, alveoli
 - Bronchioles, alveoli, bronchi
- Name two ways to prevent many chronic lung and respiratory illnesses:
- The _____, or windpipe, extends downward from the base of the larynx. It lies partly in the neck and partly in the chest cavity, and at its bottom end, it divides into left and right air tubes called bronchi, which connect to the lungs.
- Oxygen moves from alveoli to the blood through these tiny blood vessels that line the alveolar walls:
 - Chromosomes
 - Capillaries
 - Capybaras
 - Cilia
- and 10. At the bottom of the pharynx, the pathway for both food and air divides in two. One passageway is for food (the _____, which leads to the stomach) and the other is for air. The _____, a small flap of tissue, covers the air-only passage when we swallow, keeping food and liquid from going into our lungs.



Quiz Answer Key

- Without this gas, the body's cells would die:
 - Carbon dioxide
 - Hydrogen
 - Nitrogen
 - Oxygen
- Tiny hairs called cilia protect the nasal passageways and other parts of the respiratory tract, filtering out dust and other particles that enter the nose with the breathed air.
- True or false: The two openings of the airway (the nasal cavity and the mouth) meet at the **larynx**, or throat, at the back of the nose and mouth.
- True or false: The **pharynx**, or voice box, is the uppermost part of the air-only passage. This short tube contains a pair of vocal cords, which vibrate to make sounds.
- Air enters the lungs through these parts of the respiratory system, in this order:
 - Alveoli, bronchi, bronchioles
 - Alveoli, bronchioles, bronchi
 - Bronchi, bronchioles, alveoli
 - Bronchioles, alveoli, bronchi
- Name two ways to prevent many chronic lung and respiratory illnesses:
Any two of the following: don't smoke, try to stay away from pollutants and irritants, wash your hands often to avoid infection, and get regular medical checkups.
- The trachea, or windpipe, extends downward from the base of the larynx. It lies partly in the neck and partly in the chest cavity, and at its bottom end, it divides into left and right air tubes called bronchi, which connect to the lungs.
- Oxygen moves from alveoli to the blood through these tiny blood vessels that line the alveolar walls:
 - Chromosomes
 - Capillaries
 - Capybaras
 - Cilia
- and 10. At the bottom of the pharynx, the pathway for both food and air divides in two. One passageway is for food (the esophagus, which leads to the stomach) and the other is for air. The epiglottis, a small flap of tissue, covers the air-only passage when we swallow, keeping food and liquid from going into our lungs.