

Section 37–3 The Respiratory System (pages 956–963)

TEKS FOCUS: 3D Biology and careers; 4B Cellular processes and disposal of wastes; 10A Functions of the respiratory system; 11B Human response to external stimuli

This section identifies the structures of the respiratory system and explains how we breathe. It also describes how smoking affects the respiratory system.

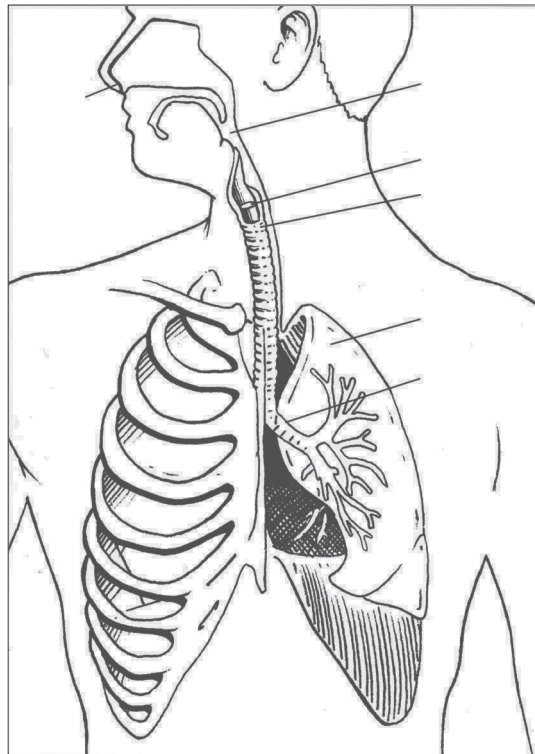
What Is Respiration? (page 956)

1. The process by which oxygen and carbon dioxide are exchanged between the lungs and the environment is known as _____.

The Human Respiratory System (pages 956–958)

2. What is the basic function performed by the human respiratory system? _____

3. Label each of the following structures in the drawing of the human respiratory system: nose, pharynx, larynx, trachea, bronchus, and lung.



4. Circle the letter of the choice that lists the respiratory structures from largest to smallest.
a. Alveoli, bronchioles, bronchi c. Bronchi, bronchioles, alveoli
b. Bronchioles, bronchi, alveoli d. Bronchi, alveoli, bronchioles
5. What prevents food from entering your trachea? _____

Match each structure of the respiratory system with its description.

Structure	Description
_____ 6. pharynx	a. Tiny air sacs where gas exchange occurs
_____ 7. trachea	b. Tiny projections that sweep trapped particles and mucus away from the lungs
_____ 8. cilia	c. Tube that serves as a passageway for both air and food
_____ 9. larynx	d. Large passageways in the chest that lead to the lungs
_____ 10. bronchi	e. Structure at the top of the trachea that contains the vocal cords
_____ 11. alveoli	f. Passageway between the pharynx and bronchi

Gas Exchange (page 958)

12. Gas exchange occurs in the _____.
13. Describe the process of gas exchange. _____

14. Circle the letter of each sentence that is true about gas exchange.
- a. It is a very efficient process.
 - b. Exhaled air usually contains no oxygen.
 - c. The lungs remove about half of the oxygen of inhaled air.
 - d. The lungs increase the carbon dioxide content of inhaled air by a factor of 100.
15. Why is hemoglobin needed? _____

Breathing (pages 959–960)

16. The movement of air into and out of the lungs is called _____.
17. The large, flat muscle at the bottom of the chest cavity is the _____.
18. Is the following sentence true or false? The force that drives air into the lungs comes from air pressure. _____
19. What happens when you inhale? _____

20. Circle the letter of the choice that describes what happens when pressure in the chest cavity becomes greater than atmospheric pressure.
- a. Air rushes into the lungs.
 - b. Air cannot escape from the lungs.
 - c. The diaphragm contracts.
 - d. Air rushes out of the lungs.

How Breathing Is Controlled (pages 960–961)

21. The part of the brain that controls breathing is the _____.
22. Is the following sentence true or false? Cells in the breathing center monitor the amount of oxygen in the blood. _____
23. Why do airplane passengers in emergency situations often have to be told to begin breathing pressurized oxygen? _____

Tobacco and the Respiratory System (pages 961–963)

24. List three of the most dangerous substances in tobacco smoke.
a. _____ b. _____ c. _____
25. Is the following sentence true or false? Nicotine is a stimulant drug that increases pulse rate and blood pressure. _____
26. Why is carbon monoxide dangerous? _____

27. List three respiratory diseases caused by smoking.
a. _____ b. _____ c. _____
28. Circle the letter of each sentence that is true about chronic bronchitis.
 - a. It is characterized by swollen bronchi.
 - b. It occurs only in heavy smokers.
 - c. It can make stair climbing and similar activities difficult.
 - d. It is unrelated to smoking.
29. What is emphysema? _____
30. Circle the letter of each sentence that is true about lung cancer.
 - a. Its most important cause is smoking.
 - b. It is often deadly.
 - c. It cannot spread to other parts of the body.
 - d. It is usually detected early enough for a cure.
31. Circle the letter of each way that smoking affects the cardiovascular system.
 - a. It constricts the blood vessels.
 - b. It causes blood pressure to rise.
 - c. It makes the heart work harder.
 - d. It causes heart disease.

32. Inhaling the smoke of others is called _____.
33. Why is passive smoking particularly harmful to young children? _____

34. Why is it so hard to quit smoking? _____

35. What is the best solution for dealing with tobacco? _____

WordWise

Match each definition in the left column with the correct term in the right column. Then, write the number of each term in the box below on the line under the appropriate letter. When you have filled in all the boxes, add up the numbers in each column, row, and two diagonals. All the sums should be the same.

Definition

- A. Fluid lost by the blood into surrounding tissue
- B. Thick layer of muscle in walls of heart
- C. Stimulant drug in tobacco smoke
- D. Passageway leading from the trachea to a lung
- E. Protein in red blood cells
- F. Small group of heart cells that set the pace for the heartbeat
- G. Lower chamber of the heart
- H. Disease in which tissues of the lungs lose elasticity
- I. Condition in which fatty deposits build up on the walls of arteries

Term

- 1. myocardium
- 2. ventricle
- 3. pacemaker
- 4. atherosclerosis
- 5. hemoglobin
- 6. lymph
- 7. bronchus
- 8. nicotine
- 9. emphysema

A _____	B _____	C _____	= _____
D _____	E _____	F _____	= _____
G _____	H _____	I _____	= _____
= _____	= _____	= _____	= _____