Name Period Date

SECTION 30.2

RESPIRATION AND GAS EXCHANGE

Study Guide

KEY CONCEPT

The respiratory system exchanges oxygen and carbon dioxide.

VOCABULARY	
red blood cell	emphysema
hemoglobin	asthma

MAIN IDEA: Gas exchange occurs in the alveoli of the lungs.

1. What are the three principles of gas exchange?

2. What is the advantage of having so many clusters of alveoli in the lungs?

Fill in diagram A about oxygen diffusion and diagram B about carbon dioxide diffusion. Add arrows to show the direction in which the gases move.

A

Alveolus	Capillary and alveolus walls	Capillary
O_2 concentrations are higher than in the capillary.		

B

Alveolus	Capillary and alveolus walls	Capillary
		CO_2 and water vapor concentrations are higher than in alveolus.

3. What is the function of hemoglobin in red blood cells?

4. When CO_2 levels in the blood increase, how does the nervous system respond?

MAIN IDEA: Respiratory diseases interfere with gas exchange.

5. In the chart below, summarize how each activity or disease affects the lungs' ability to exchange gases.

Activity or Disease	Effect on Lungs
smoking	
emphysema	
asthma	
cystic fibrosis	

Vocabulary Check

6. *Asthma* comes from the Greek word *asthma*, which means "to pant." How does this meaning relate to the definition of *asthma*?

7. What is the definition of *hemoglobin*? Why does it give blood its reddish color?