

# Warm-Up

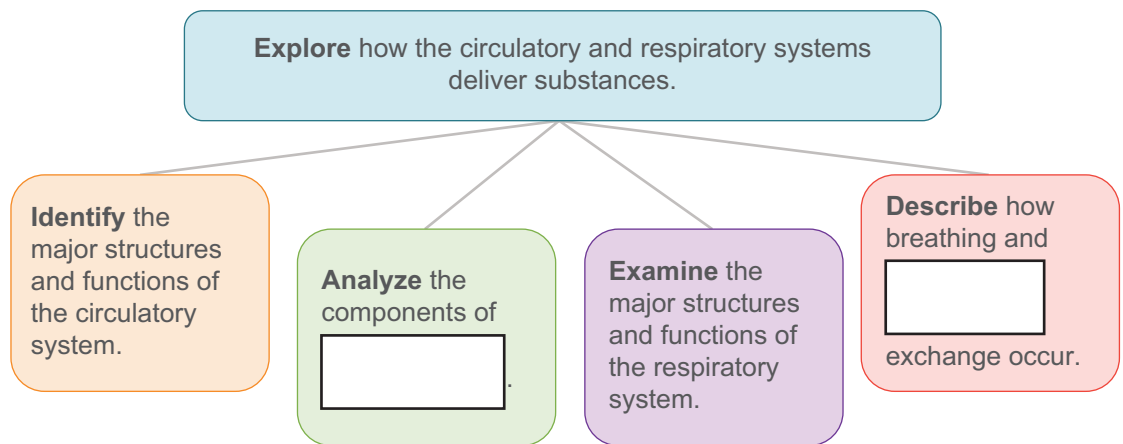
## The Circulatory and Respiratory Systems



### Lesson Question



### Lesson Goals



### Words to Know

Fill in this table as you work through the lesson. You may also use the glossary to help you.

	a blood vessel that carries blood back to the heart
	a blood vessel that carries blood away from the heart
	the lower chambers of the heart that receive blood from the atria and push it into the arteries
	the upper chambers of the heart that receive blood from veins and empty into the ventricles
	a very thin blood vessel that connects arteries and veins
	the structure connecting the larynx to the lungs; also known as the windpipe
	the structure connecting the pharynx to the trachea; also known as the voice box

Warm-Up

The Circulatory and Respiratory Systems



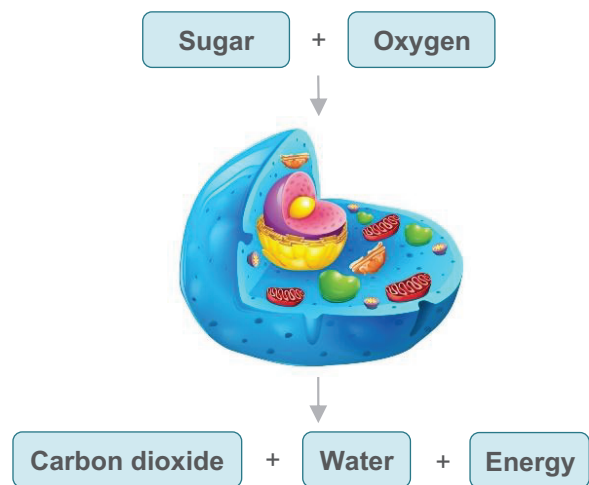
Words to Know

	the structure connecting the nasal and oral cavities to the larynx; also known as the throat
	the tubes in the respiratory system that serve as the airways connecting the trachea to the lungs
	the saclike structures in the lungs where gas exchange takes place
	the fluid part of blood
	an agent that can cause infection and disease
	a type of blood cell that carries oxygen throughout the body
	the cell fragments in blood that help in blood clotting
	a type of blood cell that protects against pathogens
	a structure within the body that ensures the flow of a fluid is only in one direction



Cellular Respiration

- Cells produce  through cellular respiration.
- In cellular respiration, sugar  react with  to produce carbon dioxide, water, and energy.



## Instruction

## The Circulatory and Respiratory Systems

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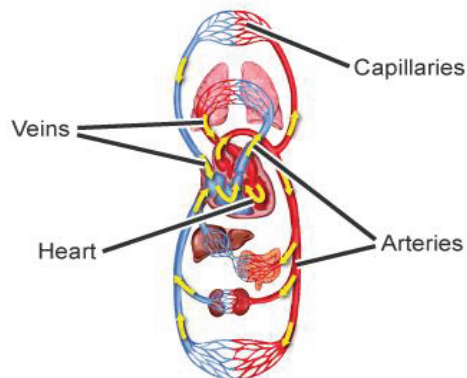
**Functions of the Circulatory System**

- Carries and delivers important substances to the cells
  - , sugars,  acids, and other substances
- Picks up  materials from the cells
  - Carbon dioxide

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**Structures of the Circulatory System**

- vessels
  - An  carries blood away from the heart.
  - A  carries blood back to the heart.
  - A , a very thin blood vessel, connects arteries and .



## Instruction

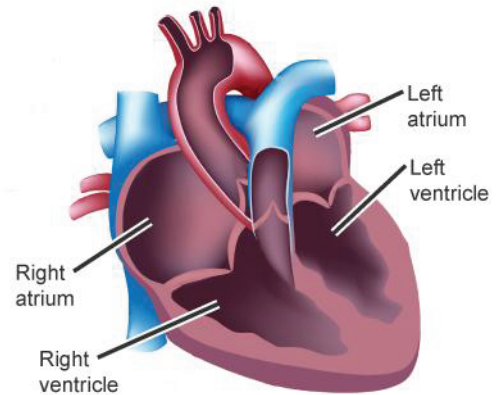
## The Circulatory and Respiratory Systems

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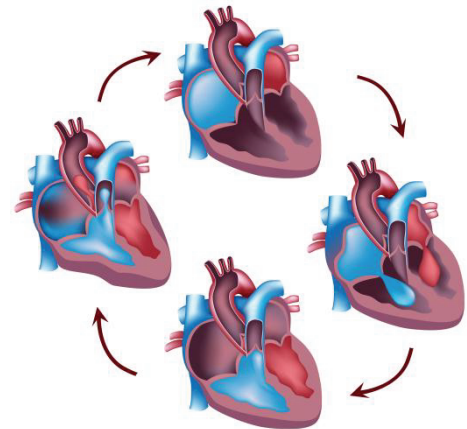
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**The Heart**

- The heart is an organ with  chambers, or open spaces.
  - are the upper chambers of the heart that receive blood from veins and empty into the ventricles.
  - are the lower chambers of the heart that receive blood from the atria and push it into the arteries.
  - are structures that ensure the flow of blood in one direction.

**The Function of the Heart**

- The heart pumps blood when its muscles .
  - When atria , blood flows into the heart.
  - When atria contract and the ventricles relax, blood is pushed into the .
  - When the ventricles contract, blood is pushed out of the heart.



## Instruction

## The Circulatory and Respiratory Systems

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**Blood Pressure**

- Blood pressure against the walls of the arteries is made by the beating of your .
- Blood pressure is  in the arteries near the heart.
- Blood pressure must be maintained at a certain  to keep the body healthy.

**Flow of Blood in the Body**

- Blood without oxygen goes to the  to pick up oxygen and then goes back to the heart.
- Blood with oxygen goes to the  of the body.
- As blood flows through the circulatory system, it picks up waste materials, like carbon dioxide.



## Instruction

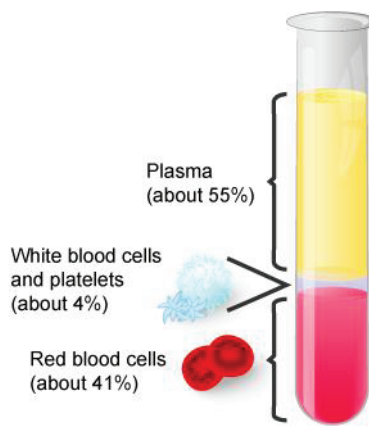
## The Circulatory and Respiratory Systems

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**Components of Blood****WHITE BLOOD CELL**

- The  is the fluid part of the blood.
- A  **blood cell** is a type of blood cell that protects against pathogens.
  - A pathogen is an agent that can cause infection and disease.

**Components of Blood****RED BLOOD CELL**

- are cell fragments in blood that help in blood clotting.
- A  **blood cell** is a type of blood cell that carries oxygen throughout the body.

## Instruction

## The Circulatory and Respiratory Systems

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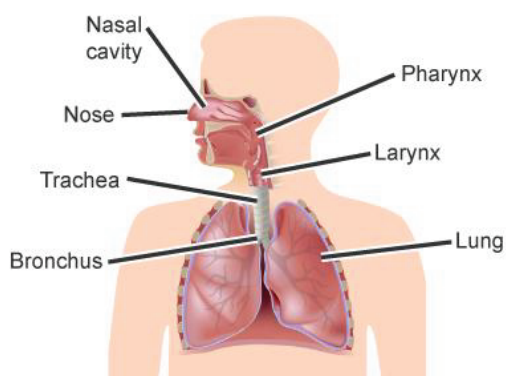
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**Functions of the Respiratory System**

- Provides a way for oxygen from the air to enter the body
- Delivers  to the blood
- Removes and releases  dioxide from the blood

**Pathway of Air through the Respiratory System**

- Air enters the human body through the two openings of the nose.
- Air passes through the nasal , or empty space in the nose.
- Air then travels to the .
- The pharynx connects the nasal cavity to the .



## Instruction

## The Circulatory and Respiratory Systems

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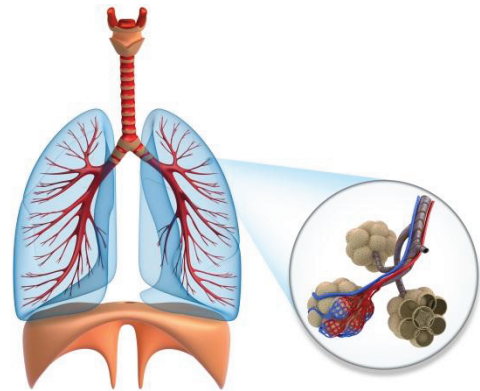
## Pathway of Air through the Respiratory System

- From the pharynx, air travels to the larynx.
  - The larynx connects the pharynx to the , which connects the larynx to the lungs.
- Air enters the , tubes that connect the trachea to the lungs.
- Air then flows into the lungs, where oxygen is absorbed by the body.

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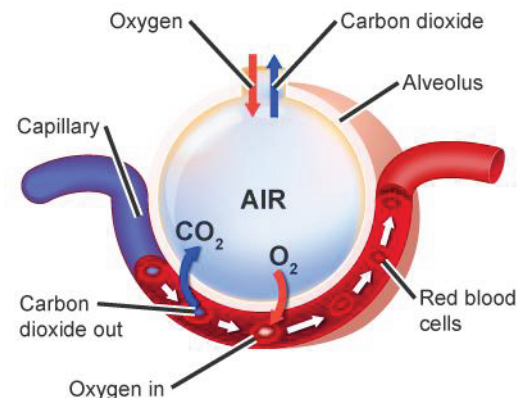
## Alveoli

- In the lung, the bronchi branch out and end in **alveoli**.
  - Alveoli are the  structures in the lungs where  exchange takes place.



## Gas Exchange

- Carbon dioxide ( $\text{CO}_2$ ) from the blood is  by the alveoli.
- Oxygen ( $\text{O}_2$ ) in the alveoli is absorbed by the .





## Summary

## The Circulatory and Respiratory Systems

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**Lesson Question**

How do the circulatory and respiratory systems deliver important substances?

✓

**Answer**

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**Review: Key Concepts**

- The  system
  - delivers important substances to the cells of the body.
  - picks up waste materials from the cells of the body.
  - protects the body from pathogens that can cause diseases.
- The main structures of the circulatory system are the  and the blood vessels.
- Blood is another important component of the circulatory system.
  - Blood is made of plasma, white blood cells, platelets, and red blood cells.

## Summary

## The Circulatory and Respiratory Systems

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**Review: Key Concepts**

- The  system
  - provides a way for oxygen to enter the body.
  - delivers oxygen to the blood.
  - removes carbon dioxide from the blood.
- The main structures of the respiratory system are the nose, nasal cavity, pharynx, larynx, , bronchi, and lungs.
- In the lungs, structures called alveoli are responsible for gas exchange.
  - Oxygen is absorbed by blood, and carbon dioxide is released into the alveoli.

*Use this space to write any questions or thoughts about this lesson.*