What is the Human Circulatory System?

Worksheet

The circulatory system uses the heart to pump blood through arteries, capillaries, and veins. Arteries carry oxygenated blood away from the heart; veins return deoxygenated blood; capillaries exchange oxygen and nutrients with tissues.

Questions

1. Which chamber of the heart pumps oxygenated blood to the body?

A) Right atrium
B) Right ventricle
C) Left atrium
D) Left ventricle

2. Where does gas exchange occur in the lungs?

A) Bronchi
B) Bronchioles
C) Alveoli
D) Trachea

3. Why is hemoglobin important?

A) Pumps blood
B) Carries oxygen
C) Prevents bleeding
D) Produces white blood cells

4. What is the difference between arteries and veins?

A) Arteries are thicker and carry oxygenated blood
B) Veins are thicker and carry oxygenated blood
C) Arteries are thinner and carry deoxygenated blood
D) They are identical

5. Trace the path of a red blood cell from the right atrium back to the right atrium.

6. Why do arteries have thick, muscular walls while veins are thinner?

7. What is the role of hemoglobin in red blood cells?

8. Define: What are the three types of blood vessels?

9. Define: What is the function of the heart?

10. Define: What is systemic circulation?

Answer Key

1. D) Left ventricle - The left ventricle is the most muscular chamber and pumps oxygenated blood through the aorta to the entire body.

2. C) Alveoli - Alveoli are tiny air sacs surrounded by capillaries where O diffuses into blood and CO diffuses out.

3. B) Carries oxygen - Hemoglobin in red blood cells binds to O in the lungs and releases it in tissues, enabling aerobic respiration.

4. A) Arteries are thicker and carry oxygenated blood - Arteries have thick, muscular walls and generally carry oxygenated blood away from the heart at high pressure. Veins are thinner and return deoxygenated blood to the heart at low pressure.

5. Right atrium right ventricle pulmonary artery lungs (picks up O) pulmonary veins left atrium left ventricle aorta body tissues (releases O) veins venae cavae right atrium.

6. Arteries carry blood at high pressure from the heart and must withstand the force. Thick, elastic muscular walls help push blood forward and prevent rupture. Veins carry blood at low pressure and rely on skeletal muscle contractions and one-way valves to return blood to the heart.

7. Hemoglobin is an iron-containing protein in red blood cells. It binds reversibly to O in the lungs and releases it in tissue. Each hemoglobin molecule can bind up to 4 O molecules.

8. Arteries (carry blood away from heart), veins (return blood to heart), and capillaries (exchange gases and nutrients with tissues).

9. To pump blood throughout the body. The right side pumps deoxygenated blood to the lungs; the left side pumps oxygenated blood to the body.

10. The circulation of oxygenated blood from the left heart through the body and return of deoxygenated blood to the right heart.