

It Circulates

Cross-Curricular Focus: Life Science



The **circulatory** system is the transport system of the human body. Your body is like a map filled with passageways of different sizes that are filled with blood. **Arteries** and **veins** are the body's largest blood vessels. Arteries carry oxygen-rich blood from the lungs and through the heart so it can be delivered to all the cells of the body. Veins carry carbon dioxide waste back to the heart and into the lungs so the carbon dioxide can be exhaled. **Capillaries** are the tiniest blood vessels. They are especially helpful in the lungs, where the gas exchanges take place in air sacs called alveoli. Under a microscope, alveoli look like grape clusters.

At the very center of the circulatory system is the **heart**. Your heart is about the same size as your fist, but it is made of muscle. Its job is to pump your blood through all those blood vessels. It never stops working, even when you are sleeping. It is the strongest muscle in your body. Your heart has four chambers, or spaces, inside it. They are the left and right **ventricles**, and the left and right atriums. Each chamber is separated by a valve that allows blood flow in only one direction. The opening and closing of the valves is what you can hear through a stethoscope when you visit the doctor. The blood being pushed through the valves is what you feel as your pulse.

Blood looks like a simple red liquid when you have a cut or a scrape. That's only because your eyes cannot see what is going on inside the blood at the microscopic level. The reason blood looks red to us is because it contains an iron-rich substance called hemoglobin. Hemoglobin allows blood to hold on to oxygen and carry it around the body. Hemoglobin is found in disc-shaped cells called red blood cells. There are also white blood cells in our blood. They are larger than red blood cells and are important because they help us fight disease. Platelets, another kind of cell found in our blood, help us form scabs when we are injured so we don't lose too much blood. All of these cells float in a liquid called plasma. Plasma also carries sugar to cells and waste products away from cells.

Name: _____

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

1) What is the function of the white blood cells?

2) How are arteries and veins alike?

3) Based on other information in the passage, what gases are being exchanged in the alveoli?

4) What is the main idea of this passage?

5) What does hemoglobin do?

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Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

Actual wording of answers may vary.

1) What is the function of the white blood cells?

They help fight disease.

2) How are arteries and veins alike?

They are both blood vessels that carry blood around the body.

3) Based on other information in the passage, what gases are being exchanged in the alveoli?

oxygen and carbon dioxide

4) What is the main idea of this passage?

The circulatory system transports blood throughout the body.

5) What does hemoglobin do?

Hemoglobin helps the blood hold on to oxygen as the blood goes through the body.