

Name: _____

Date: _____

The Circulatory System - Heart

Directions: Read the following information to learn about the circulatory system.

Vocabulary:

Atria: upper chambers of the heart

ventricles: lower chambers of the heart

valve: thin flap of tissue that acts like a one-way door

septum: thick tissue wall that separates the left and right sides of the heart

Our body is made up of about 600 muscles. Some of them are voluntary, which means we control them. Others are involuntary. This means that they work without having to think about it. Your heart is an example of a muscle that is involuntary. You do not have to think or tell your heart to beat, it does it on its own. Your heart is one of the most important muscles in your body. If it does not work correctly, you could die very quickly. Your heart has one job. Your heart needs to pump blood to each part of your body. All day long, this is what your heart is doing.

Your heart is divided into four parts called chambers. There are two chambers on top and two on the bottom.

Chambers:

Atria: The two upper chambers of the heart are called the atria. They are called the right and left atria. This part of the heart *receives* blood.

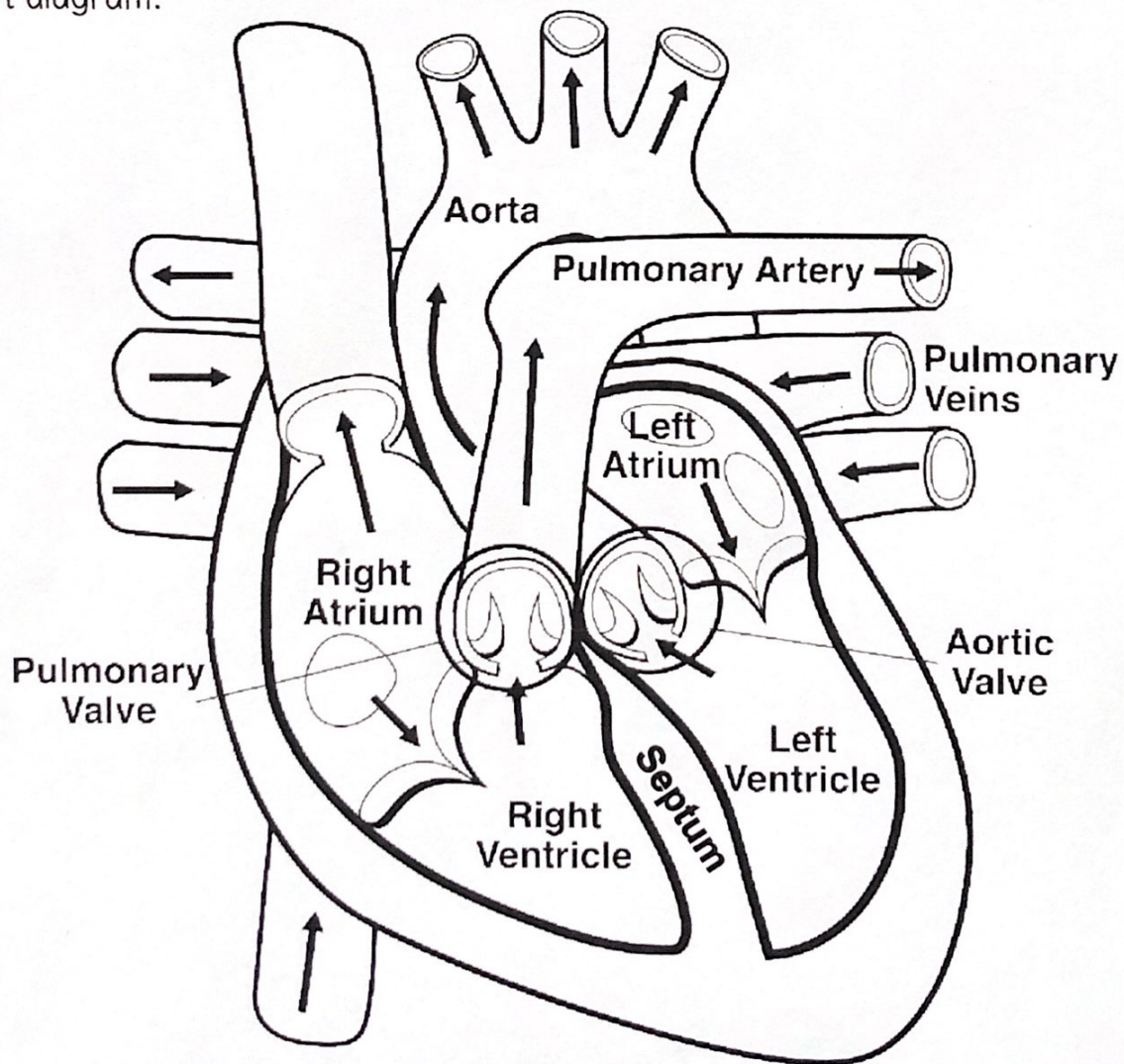
- Right atrium: Blood from all parts of the body come in through here. This blood has a lot of carbon dioxide and little oxygen.
- Left atrium: Receives blood from the lungs. Since the blood is coming straight from the lungs, it is rich in oxygen and low in carbon dioxide.

Both sides of the heart receive blood at the same time.

The two lower chambers of the heart are called the ventricles. The ventricles send out the blood to all parts of the body. Like the atria, they are named the right and left ventricle.

- Right ventricle: Blood is pumped to the lungs. The blood that goes into the lungs has a lot of carbon dioxide and little oxygen. As it travels through the lungs, the carbon dioxide is let go and it picks up oxygen to bring to other parts of the body.
- Left ventricle: Blood is pumped everywhere else in the body except for the lungs. This blood is has a lot of oxygen and little carbon dioxide.

Heart diagram:



How does the heart work?

The heart has valves that open and close. A valve is a flap of tissue that prevents blood from flowing backward. These valves help it to work correctly. Valves separate the ventricles.

When your heart beats, the muscle contracts (squeezes closed) and the atria fills with blood. Then the atria contracts and squeezes blood through the valves and the blood goes into the ventricles. This causes the ventricles to contract. When the ventricles contract, the valve closes between the atria and the ventricles. This creates the first part of the heartbeat sound that we hear. It also squeezes the blood into the large blood vessels. Then the valves between the ventricles and blood vessels snap shut, which creates the second part of the heartbeat sound. While it might seem like all of this takes a long time to happen, it actually all takes less than one second to occur. Your body does this continuously throughout your lifespan.

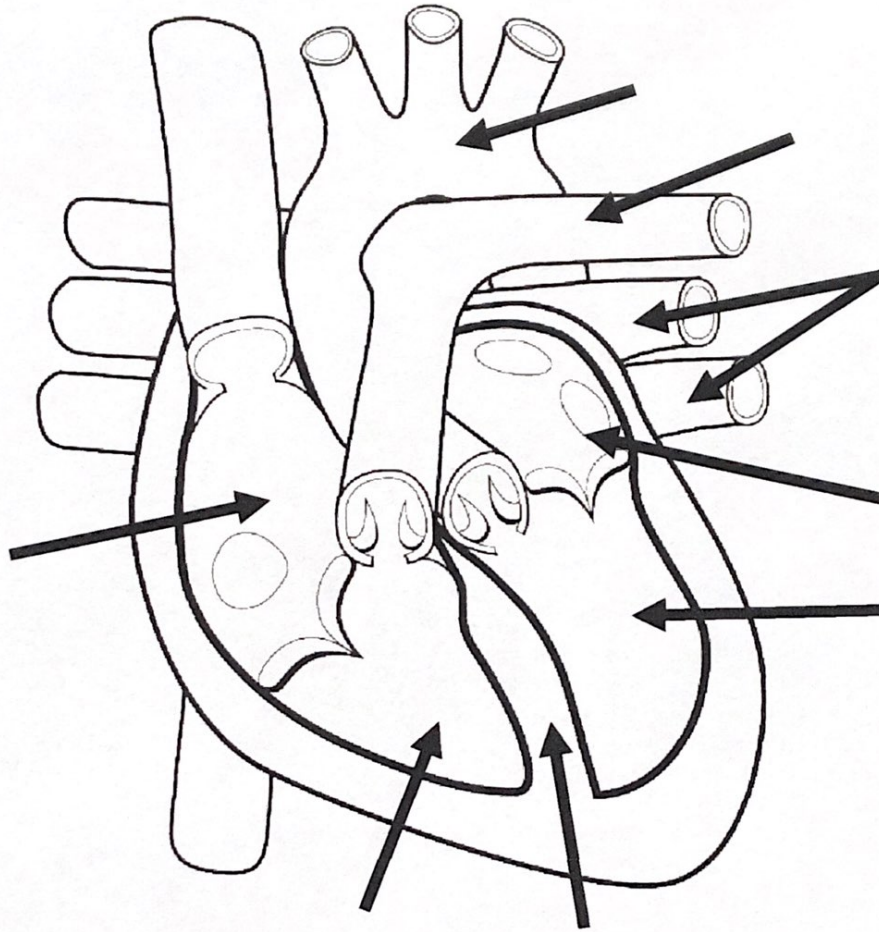
Answer These:

1. In the heart, what opens and closes to allow the blood to flow through? _____
2. What are the two upper chambers of the heart called? _____
3. What are the two lower chambers of the heart called? _____
4. Which part of the heart receives blood? _____
5. What do the ventricles do? _____
6. After the atria fills with blood, which part is next to receive blood?

7. What does contract mean? _____
8. What creates the second part of our heartbeat sound?

9. How quickly does it take for our hearts to beat?

Heart diagram: Label the diagram below. If needed, look back at your notes.



Answer These:

1. Which chamber is high in oxygen and low in carbon dioxide? _____
2. Which chamber is high in carbon dioxide and low in oxygen? _____
3. _____ True or false? Both sides of the heart receive blood at the same time.
4. What is the name of the fleshy tissue that separates the right and left sides of the heart? _____
5. Summarize how your heart beats.
