

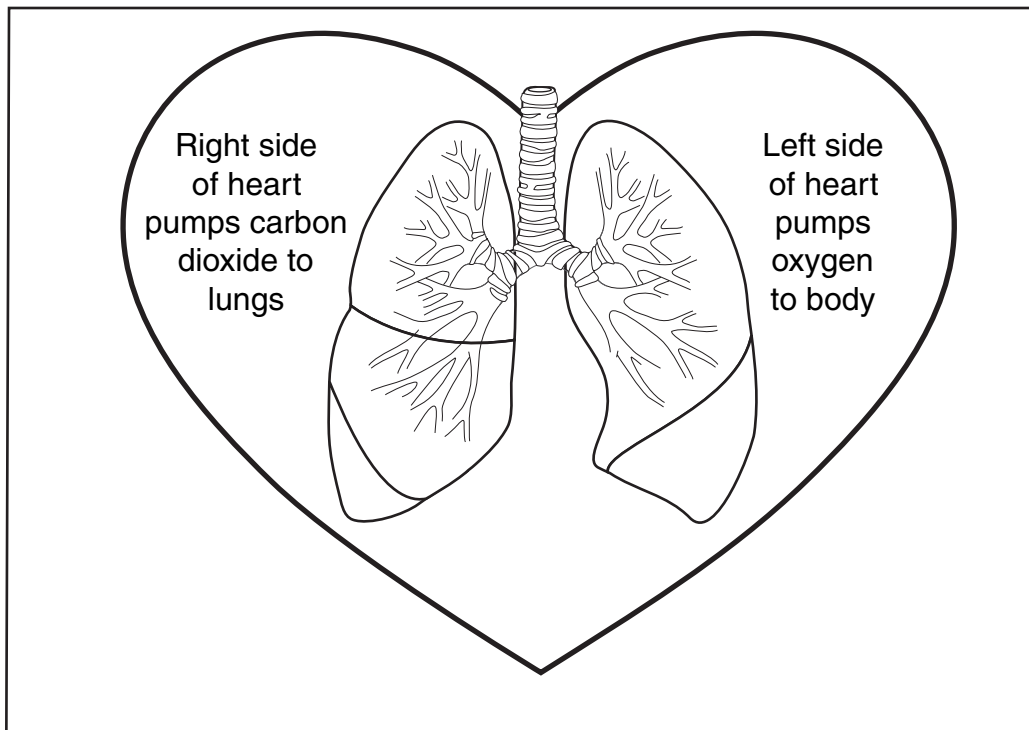
The Circulatory and Respiratory System

When you breathe in, your respiratory system receives fresh oxygen. The oxygen first goes into your lungs and then into the left side of your heart. It is then pumped by the heart into your blood stream. **Figure 1.2** shows the flow of oxygen and carbon dioxide pumped to the body.

Blood travels throughout your body. The heart pumps blood through a system of large and small pathways that make up the circulatory system. Blood delivers vital nutrients, oxygen, and other chemicals to every cell in your body. Once in the cells, oxygen burns nutrients to make energy. A waste gas called carbon dioxide is produced during this process.

The blood carries carbon dioxide into the right side of your heart, from which it is pumped to the lungs. When you breathe out, the carbon dioxide leaves your body through the lungs.

Figure 1.2



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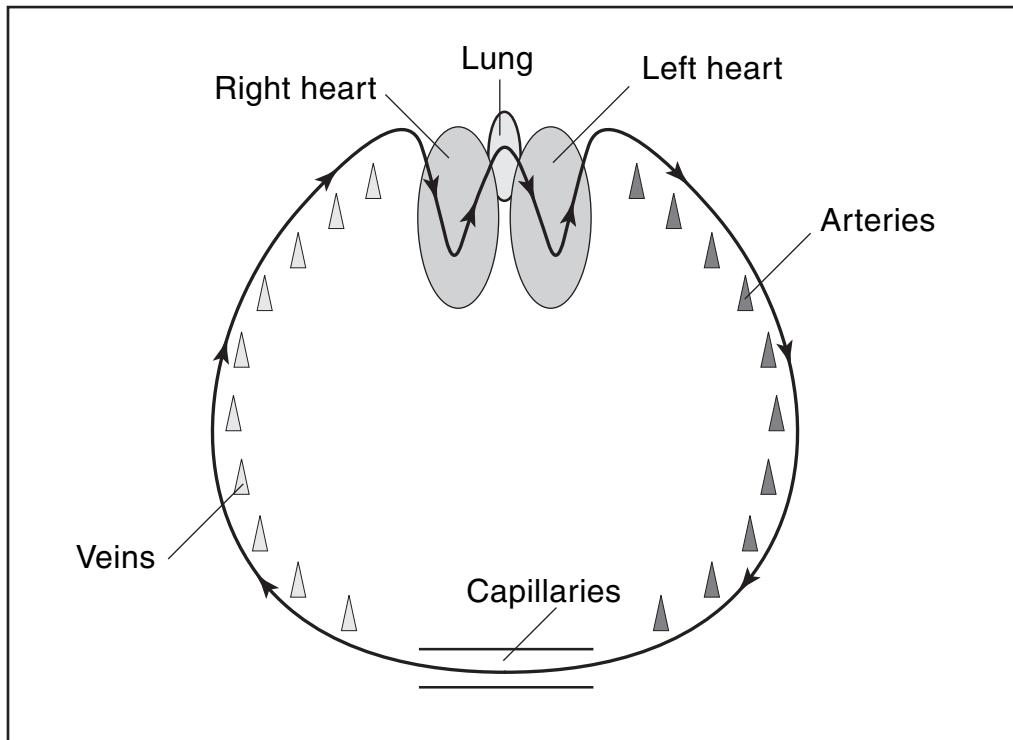
Name _____ Date _____ Class Period _____

Gas Exchange Activity

The purpose of this activity is to help you understand how oxygen and carbon dioxide are exchanged in the lungs. This is a simplified version of blood flow and gas exchange within the heart, circulatory system, and lungs. In this activity, different areas in a room or outdoor setting will represent different parts of the circulatory system. **Figure 1.3** shows an illustration of the gas exchange activity.

- The lung area should have papers with *oxygen* written on it or some object that represents oxygen.
- The capillary area should have papers with *carbon dioxide* written on it or some other object that represents carbon dioxide.
- Jump ropes and cones are used to define areas.

Figure 1.3



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For this activity, you will be working with a partner.

1. Partners start in the lung area and together pick up a paper with *oxy-*
gen written on it. They carry the paper or object indicating oxygen
through the heart, first to the left atrium, then to the left ventricle.
2. Then they run along the cones to the capillary area.
3. Partners place their paper or object representing oxygen on the floor
and pick up a paper or object representing carbon dioxide.
4. Partners run outside the cones into the heart, first to the right atrium,
then to the left atrium.
5. Partners run into the lungs where the process begins again. When
you are out of papers, the activity is over. The leader may want to
keep placing new paper into designated areas to keep the game going
on longer.

Evaluation

1. Explain how you think your heart and lungs work together.

2. What happens when you breathe in and out?

The Heart—Activity 2

Name _____ Date _____ Class Period _____



3. What does blood deliver?

4. Why is oxygen important to your body?

5. Describe the sequence of oxygen, carbon dioxide, and blood flow in your own words.
