

Write one important fact from each paragraph in this space.

Science Shorts -7

Respiration: What Is It?

We have been learning about the respiratory system: It's functions and its parts. Now we need to try to understand what respiration is. After all, the system seems to have been named for it.

Respiration is a process that takes place in your body cells. Sometimes it is called internal respiration or cellular respiration. It is the process by which oxygen actually combines with glucose to release energy. Let's take a look at the sequence leading to respiration, step by step.

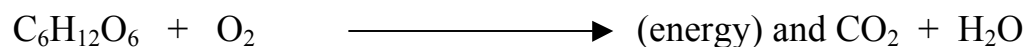
First, we need to learn a little about the digestive system. The function of the digestive system is to change the food we eat to a form that body cells can use. When food passes through the digestive system, it is broken down into simple molecules. One type of molecule that your body cells must have is called glucose. Glucose moves from the digestive system into the circulatory system. The circulatory system then carries the glucose to each of the body cells.

We know that breathing brings oxygen into the body. The oxygen passes from the air through the respiratory system and ends up in the lungs. The circulatory system plays the next part in the sequence. The oxygen molecules pass from the lungs into the blood. The circulatory system then delivers the oxygen to the body cells.

When the oxygen arrives at the body cells, it combines with the glucose provided by the digestive and circulatory systems. When the glucose and oxygen combine in a chemical reaction, energy is released. Waste materials are also produced. The wastes are carbon dioxide and water. The combination of the two materials, the release of energy, and the production of the waste materials is the process known as respiration.

The circulatory system plays a second role in this sequence. The carbon dioxide produced during respiration must be removed from the cells. It moves into the blood and carried by the circulatory system until it arrives at the lungs. While in the lungs the blood gives up the carbon dioxide and takes on more oxygen.

The Chemical Equation of Respiration

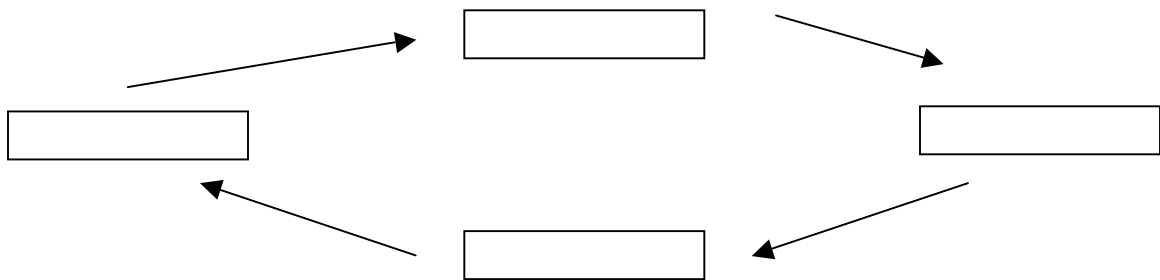


Glucose + oxygen gives energy and carbon dioxide + water

1. Where does respiration take place? _____
2. How does the digestive system work with the respiratory system in during respiration? _____
3. How does the circulatory system work with the respiratory system during respiration? _____
4. What two things must combine during respiration? _____
5. What three things does respiration release? _____
6. What are the two wastes created during respiration? _____
7. What is the chemical equation for respiration?

8. The process of respiration is part of a cycle. Look at the boxes below. Using the words from the word bank, fill in the boxes in the correct sequence for respiration. Some word will be used more than once.

Word Bank:	breathing	circulation	respiration
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9. Place the following in correct order from first to last.

- _____ Carbon dioxide is exhaled.
- _____ Oxygen is inhaled.
- _____ Oxygen and glucose combine in a chemical reaction to release energy.
- _____ Oxygen is carried to the cells.
- _____ Carbon dioxide is carried to the lungs.