**Directions: Read the following passage. When you encounter a blank, use the word bank to fill in the word that completes the sentence accurately. You will use most of the words, and some words will be used more than once. Additionally, when you encounter a blank parentheses ( ), fill in the chemical formula – ie water (H2O). You may look up any answer you are usure of.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Mitochondria** | **Glucose** | **Kreb’s Cycle** | **Plants** | **H2O** |
| **Energy** | **Animals** | **Photosynthesis** | **CO2** | **Aerobic** |
| **Cytoplasm** | **Oxygen** | **Anaerobic** | **Glycolysis** | **ATP** |
| **Carbon Dioxide** | **Water** | **O2** | **C6H12O6** | **Electron Transport Chain** |

**Making Energy From Food**

Cellular respiration is the energy creating process in plants and animals that is the opposite of photosynthesis. During photosynthesis, plants make oxygen and , while in cellular respiration, they take in and glucose. By combining glucose from food and oxygen from the air in cellular respiration, plants and animals can make a lot of as well as carbon dioxide ( ) and water ( ). The type of organism that uses this ATP for growing, cell division and transporting glucose from their leaves to other parts are while are the organisms that use ATP for muscle movement, senses and cell repair.

There are three steps to cellular respiration, which is a process that

requires oxygen. The first step is glycolysis, which occurs in the of a cell. Glycolysis starts with a molecule, and breaks it down into a molecule called pyruvate. This step creates and NADH (electron carriers). This first step of cellular respiration is anaerobic, so it does not require .

Then next step is called , and it occurs in the mitochondria. This step takes in the pyruvate molecule, and creates more NADH molecules. This step produces the byproduct

which is eliminated by exhaling. This step also produces two ATP molecules. Since it does require oxygen, this step is known as

The final step of cellular respiration is called the electron transport chain, and it occurs in the

of the cell. This step requires oxygen, so it is known as an process. In the ETC, electrons from NADH go through a series of reactions to produce many molecules. A byproduct of this reaction is .

Overall, the main point of cellular respiration is to break food down into usable .

It is a process that happens in plants and animals, and is necessary to make energy for cell function.

# Cellular Respiration

1. What is cellular respiration?
2. How do glucose and oxygen get to your cells?
3. Where does aerobic respiration take place?
4. What are some of the things our cells use ATP for?
5. Who does cellular respiration? Only plants? Only animals? Both?
6. What does AEROBIC mean?
7. What happens when there isn’t any oxygen? (In muscle cells? In yeast cells?)

# Cellular Respiration questions:

1. What are the three steps, in order?
2. What is the balanced chemical equation?
3. What is the purpose of cellular respiration?
4. What are the byproducts made?
5. What does cellular respiration have to do with breathing?