**Photosynthesis, and Cellular Respiration Test Review** Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Fill out the following chart for cellular energy to compare photosynthesis and respiration.*

|  |  |  |
| --- | --- | --- |
|  | Photosynthesis | Cellular Respiration |
| Organelle it happens in |  |  |
| Type of organisms it happens in |  |  |
| Chemical equation |  |  |
| Source of energy |  |  |
| Reactants (what does it need)?Highlight or circle which are energy |  |  |
| Products (what does it make)?Highlight or circle which are energy |  |  |
| Drawing of organelle where it occurs |  |  |

1. Determine if the statements below describe photosynthesis or cellular respiration:

a) Energy is required for carbon dioxide molecules to form glucose. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b) The energy in the bonds of glucose is transferred to the phosphate bonds in ATP. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c) Energy from organic molecules is stored in ATP. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. When would a plant produce oxygen? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What would cause a plant to produce carbon dioxide? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Since animals cannot directly use energy from the sun, what must they do to obtain energy?
4. What must happen to ATP in order for a cell to get energy?
5. Why do cells need ATP?
6. How are photosynthesis and cellular respiration alike?
7. How are photosynthesis and cellular respiration different?
8. Energy conversions:
	1. In chloroplasts, energy from \_\_\_\_\_\_\_\_\_\_\_\_\_ is used to convert \_\_\_\_\_\_\_ (gas) into a sugar called \_\_\_\_\_\_\_\_\_\_\_.
	2. In mitochondria, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is converted into the cell’s energy carrier \_\_\_\_\_\_\_\_\_ ,a process that also uses \_\_\_\_\_\_\_ (gas).
9. Why are photosynthesis and cellular respiration often considered the opposite of each other?
10. How do Cellular respiration and Photosynthesis affect the cycle shown here? Fill in the missing pieces

**Pre-AP:
Use the word bank to fill in the following, Some words may be used more than once.**

**Glycolysis, Electron Transport Chain, Calvin Cycle, Dark Reaction, Light Reaction, H2O, CO2, O2, Mitochondria, Cytoplasm, ATP, 2, 32, Krebs, Oxidative Phosphorylation, C6H12O6, Glucose, Pyruvate**

Steps of Photosynthesis:

Step 1 is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. It needs \_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_ and produces \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Step 2 is called \_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_. It uses \_\_\_\_\_\_\_\_\_\_\_\_\_ to produce \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Steps of Cellular Respiration:

Step 1 is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_. During this step \_\_\_\_\_\_\_\_\_\_\_\_\_ is broken into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. No \_\_\_\_\_\_\_\_\_\_\_ is required for this step and it takes place outside the mitochondria in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. A total of 2 \_\_\_\_\_\_ is created.

Step 2 is the \_\_\_\_\_\_\_\_\_\_\_ cycle it occurs in the \_\_\_\_\_\_\_\_\_\_\_\_\_. It produces \_\_\_\_ ATP

Step 3 is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This steps requires the use of \_\_\_\_\_\_\_\_\_\_ and produces a total of \_\_\_\_\_\_\_ ATP.