Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_\_\_\_

**Photosynthesis and Cellular Respiration Comparison**

***Directions:*** *For each row, you must describe a similarity or difference between the processes that relates to the given “Topic for Comparison.”*

|  |  |  |
| --- | --- | --- |
| **Topics for Comparison** | **Similarity or difference?** | **Explanation of the similarity or difference** |
| Location of the process in a eukaryotic cell (i.e. the organelle used in the process) |  |  |
| overall goal of the process |  |  |
| reactants (starting molecules) |  |  |
| products (ending molecules) |  |  |
| types of organisms that use this process (photoautotrophs, chemoautotrophs, heterotrophs, etc.) |  |  |
| how energy is converted |  |  |
| where H+ are pumped in the ETC |  |  |
| electron carrier molecules used |  |  |
| how H+ are used to power ATP synthase |  |  |

***Follow Up Question:*** Scientists often argue that photosynthesis and cellular respiration work together like a cycle. Provide an explanation to support this argument. Use the information from the chart and from the diagrams below to provide evidence for your answer. Your answer should include multiple pieces of evidence and should be 4-6 sentences in length.