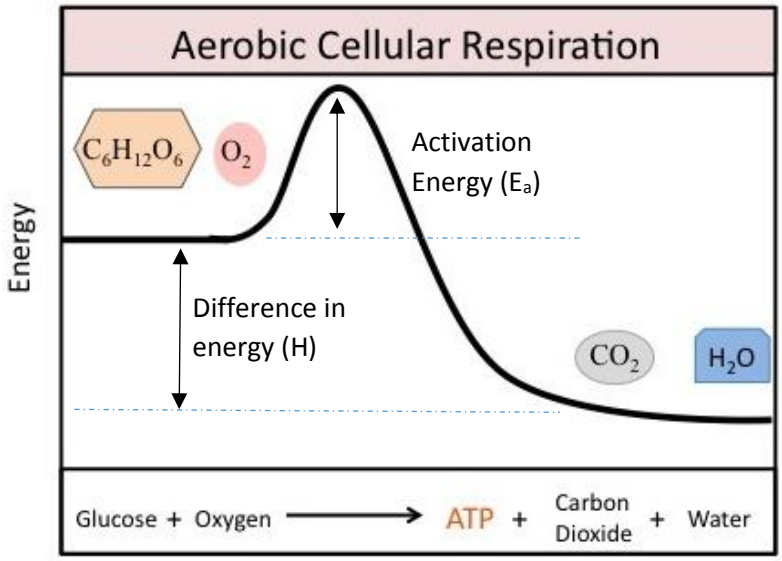


Nom _____

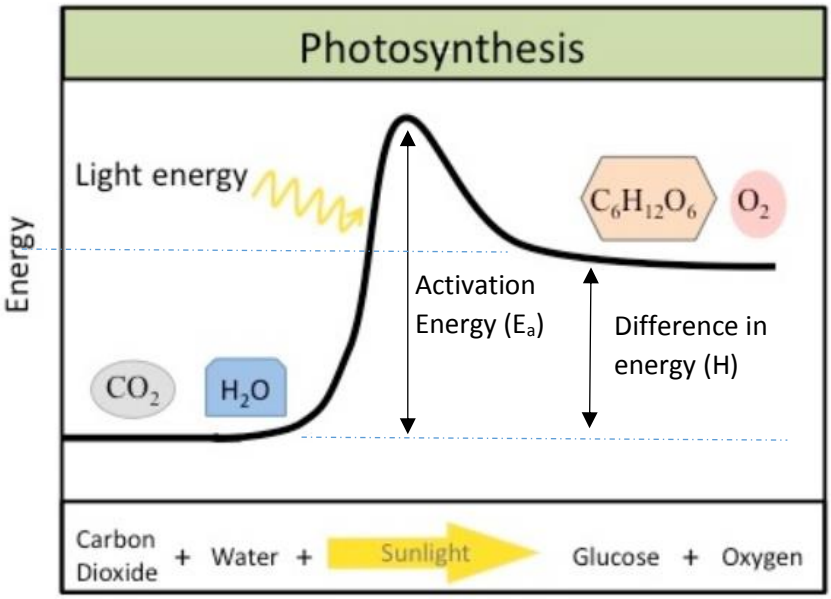
ENERGY & ENZYMES IN CELLULAR RESPIRATION INVESTIGATION

1. Is the reaction shown to the left an example of a **LYTIC (aka catabolic, or splitting) reaction** or a **SYNTHESIS (aka anabolic, or fusion) reaction**? Explain the reasoning for your answer.

2. Describe the energy level of the reactants and compare them to the energy level seen for the products. Is energy released (given off) or stored (held within the molecule/s)? Use the relative levels in the graphic to support your answer.

3. Based on the diagram and the patterns seen, what do you think **activation energy** means?

4. Is the reaction shown to the right an example of a **LYTIC (aka catabolic, or splitting) reaction** or a **SYNTHESIS (aka anabolic, or fusion) reaction**? Explain the reasoning for your answer.



5. Describe the energy level of the reactants and compare them to the energy level seen for the products. Is energy released (given off) or stored (held within the molecule/s)? Use the relative levels in the graphic to support your answer.

6. Which of the processes we've studied to date, has a lower activation energy? Why do you think this is the case?

7. Using the following reading, explain which graph represents an endergonic reaction and which represents an exergonic reaction. If you need more space, write the question number on the back of this page.

8. Enzymes are proteins made by cells to specifically speed up chemical reactions in the body with almost no change in temperature or pH. Enzymes lower the activation energy needed to start a reaction. The lower the activation energy for the reaction, the faster the rate. In the area below, sketch a graph showing how the chemical reaction in photosynthesis or respiration (your choice) would appear if an enzyme was present. Include how the activation energy would change as a result. Be sure to label your x and y axes.