**Assignment**

**Photosynthesis and Respiration**

1. Photosynthesis is the conversion of light energy to chemical energy.
   1. List the substrates for photosynthesis.

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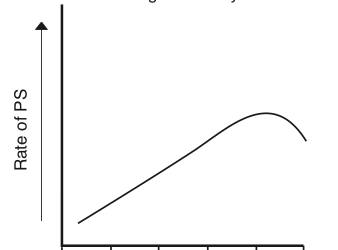
* 1. Explain why the graph below is more likely to represent the limiting factor of temperature rather than CO2. Be precise in your answer.

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1. Organisms can be divided into autotrophs and heterotrophs.
   1. Explain why both use the process of aerobic respiration, and not just heterotrophs.

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* 1. What is the advantage of respiration occurring in a series of small, regulated steps?

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1. Respiration can occur in the absence or presence of oxygen.
2. Is this process more efficient in the presence of absence of oxygen? Explain.

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1. Explain why, in the process of beer making, the beer will have a large percentage of dissolved carbon dioxide.

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1. Aerobic respiration is about 40% efficient in transferring energy to ATP for cells. Explain what happens to the remaining 60%.

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1. Both alcohol formation and lactic acid formation are fermentation processes.
2. Explain the key differences between the two (as far as products are concerned).

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1. Sprinting relies heavily on a different type of respiration than long distance running. Explain why this makes sense.

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1. List 3 key areas in an organism’s lifespan that require energy in large quantities.

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