

**Bozeman Biology**

**Photosynthesis and Respiration video**

<http://bit.ly/W3oAKW>

1. What is an autotroph?. What are the two strategies they use to utilize energy?

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2. What is a heterotroph?. What are the two strategies they use to utilize energy?

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3. Do plants respire?

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4. Where and how does chemosynthesis occur? What are the raw materials and the products?

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5. What are two types of fermentation and how do they differ from respiration?

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6. Write out the equation for photosynthesis

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7. What is the  $\Delta G$  of this reaction?

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8. Where does photosynthesis occur?

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9. What are the two parts of photosynthesis?

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10. Where does the light dependant part of the process occur?

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11. What happens in the light reaction?

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12. What are the raw materials and the products of this process?

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13. Where does the Calvin cycle occur?

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14. What are the raw materials and the products of this process?

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15. Draw and label the chloroplast and indicate where each part of the process occurs

16. List the role of the following in the steps of the light reaction.
- a. light : \_\_\_\_\_
  - b. Chlorophyll: \_\_\_\_\_
  - c. Electron: \_\_\_\_\_
  - d. Water: \_\_\_\_\_
  - e. Hydrogen ions (aka: \_\_\_\_\_)
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17. Where does the oxygen come from in photosynthesis?

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18. Into which space are the protons being pumped?

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19. What is the charge on the inside of the membrane?

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20. The name of the molecule through which the protons escape is \_\_\_\_\_

21. What happens in the Calvin cycle? What are the raw materials and the products?

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22. What is different in cellular respiration from photosynthesis?

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23. What is  $\Delta G$  in respiration?

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24. Draw and label the mitochondrion and indicate where the different parts of respiration occurs.

25. How is glucose broken down in glycolysis?

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26. What is the Krebs' cycle and where does it occur?

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27. What does NADH and FADH<sub>2</sub> do with the electrons they harvest?

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28. What is the role of the electrons in the ETC?

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29. Where are the protons pumped into?

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30. Where do the protons escape through?

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31. How are the electrons “pulled” down the ETC?

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32. What is the final Electron acceptor?

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