

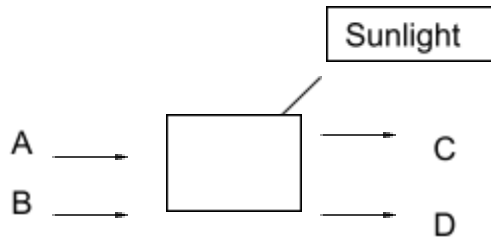
## Carbon Cycle: Photosynthesis and Cellular Respiration

### Part A: Photosynthesis

1. A green plant cell makes the food it needs by photosynthesis. Write the chemical reaction for photosynthesis then connect reactants with products showing which molecule is reduced and which molecule is oxidized. (Obj 1.1)

2. In and Out (Obj 1.1)

A) At the right is a drawing of a green plant cell. A and B represents the two kinds of molecules which must enter the cell for photosynthesis to occur.



What are they?

B) In the drawing above, C and D represent the two kinds of molecules that must eventually pass out of the cell. What are they?

3. Chloroplast (Obj 1.2)

A) What part of Chloroplast does the light reaction take place? What is its main role in photosynthesis?

B) What part of Chloroplast does the Calvin Cycle take place? What is its main role in photosynthesis?

### Part B: Cellular Respiration

4. To release energy, all cells must require food. Write the chemical reaction for aerobic cellular respiration then connect reactants with products showing which molecule is reduced and which molecule is oxidized. (Obj 1.1)

5. At the right is a drawing of an animal Cell. A and B at the right represent the two kinds of molecules which must enter the cell in order for aerobic cellular respiration to take place. What are they? (Obj 1.1)



6. As a result of respiration, two wastes must be removed. What are C and D? (Obj 1.1)

7. In animal cells, whether the pyruvate formed at the end of glycolysis will be changed to lactate (or alcohol) or acetate is determined by presence of \_\_\_\_\_. (Obj 1.4)

8. In which organelle of the cell do Krebs cycle and electron transport of an aerobic cellular respiration take place? (Obj 1.2)

9. How does aerobic respiration differ from anaerobic respiration? Discuss in terms of energy (ATP production). (Obj 1.4)

10. What is ATP? How is energy released in ATP? (Obj 2.1)

11. How is lactic acid fermentation different from alcohol fermentation? (Obj 1.4)

### Part C: Carbon Cycle

12. Identify the process indicated by I and II. (Obj 2.2)

13. Discuss the energy conversion in both processes. (Obj 2.1)

14. Discuss the fate of the carbon molecule in each process. (Obj. 2.1)

(Obj. 2.1)

15. Explain how the process of photosynthesis and cellular respiration are interdependent. (Obj 2.2)

