WLHS/ Biology/ Oppelt NAME_____

Photosynthesis and Cellular Respiration Worksheet

Part A. Write the correct term from the list below in the space next to the definition.

Aerobic	Cellular Respiration	Anaerobic	Chlorophyll	Pigment
Krebs cycle	Photosynthesis	Electron transport chain	Glycolysis	Calvin cycle
Metabolism	Stroma	Thylakoid		

1. _____ the process by which light energy is converted to chemical energy
2. _____ the process by which cells get energy from food
3. _____ a substance that absorbs light
4. _____ the primary pigment involved in photosynthesis
5. _____ the series of proteins that carry electrons through the membrane of the mitrochondria
6. _____ the making of carbon dioxide into organic carbon compounds
7. _____ making 2 pyruvate from one glucose
8. _____ cluster of proteins and pigments that capture the sun's energy
9. _____ a process that requires oxygen
10. _____ a process that does not require oxygen
11. _____ the cycle that pyruvate enters after glycolysis
12. _____ the process of getting energy from food
13. _____ space on the interior of a chloroplast; the light-independent reactions take place here

Part B. Place the following steps in order and write the number of each step in the space provided.

1. _____ animals eat plants to get energy
2. _____ plant absorbs sunlight
3. _____ plant uses chemical energy to make organic compound (glucose)
4. _____ light from the sun reaches Earth
5. _____ plant converts sunlight to chemical energy

Part C. Formulas and equations!!

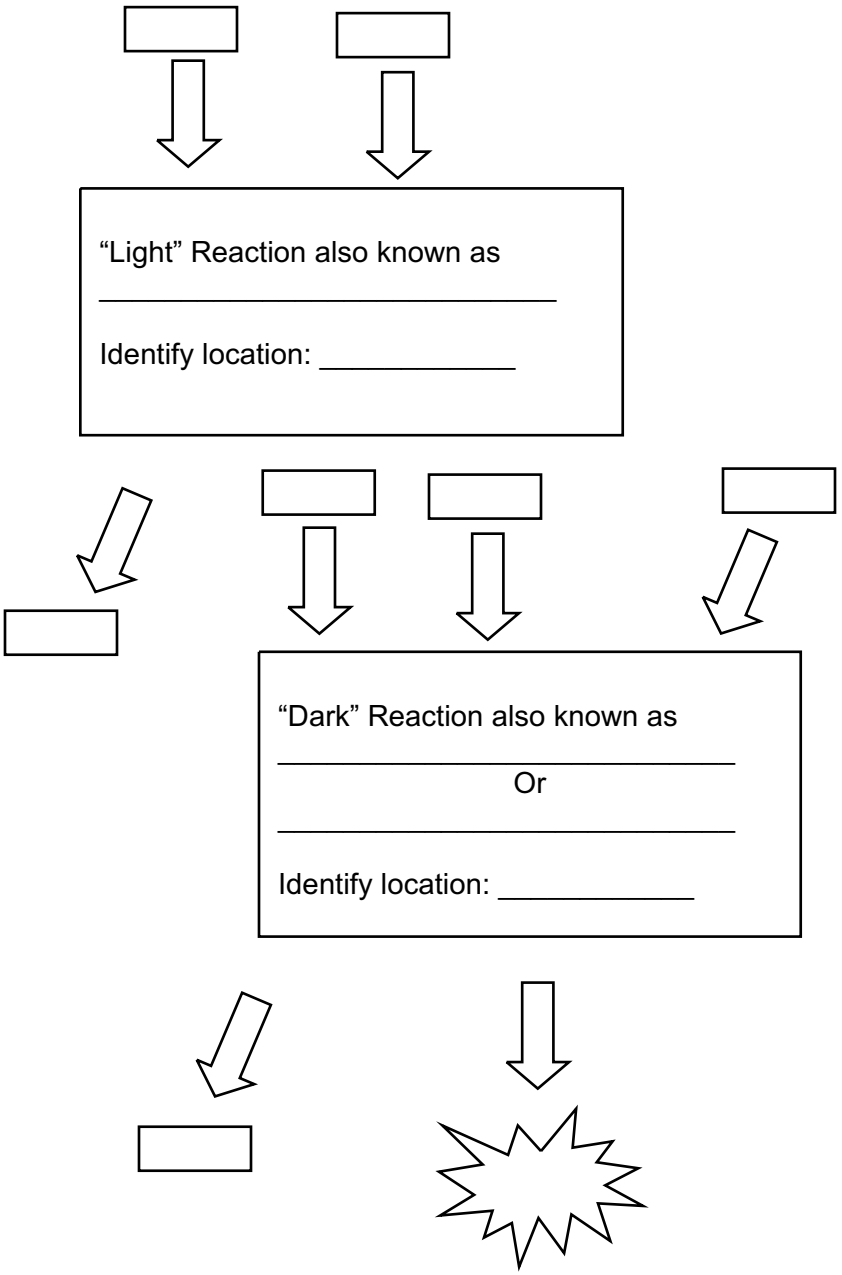
1. What is the chemical equation for photosynthesis? Identify the reactants and the products.

2. What is the chemical equation for cellular respiration? Identify the reactants and the products.

3. How are equations above the similar? How are they different?

4. What is the chemical equation for alcoholic fermentation?

Part D. Fill in the diagram showing photosynthesis below using the following terms (NOTE: 1 term will be used twice): **Calvin Cycle, ATP, Oxygen, NADH, Thylakoid membrane, Light, Light -Dependent, Light-Independent, Glucose, Water, Stroma, and CO_2**



Using the diagram above, answer the following questions.

1. What are 2 waste products? _____

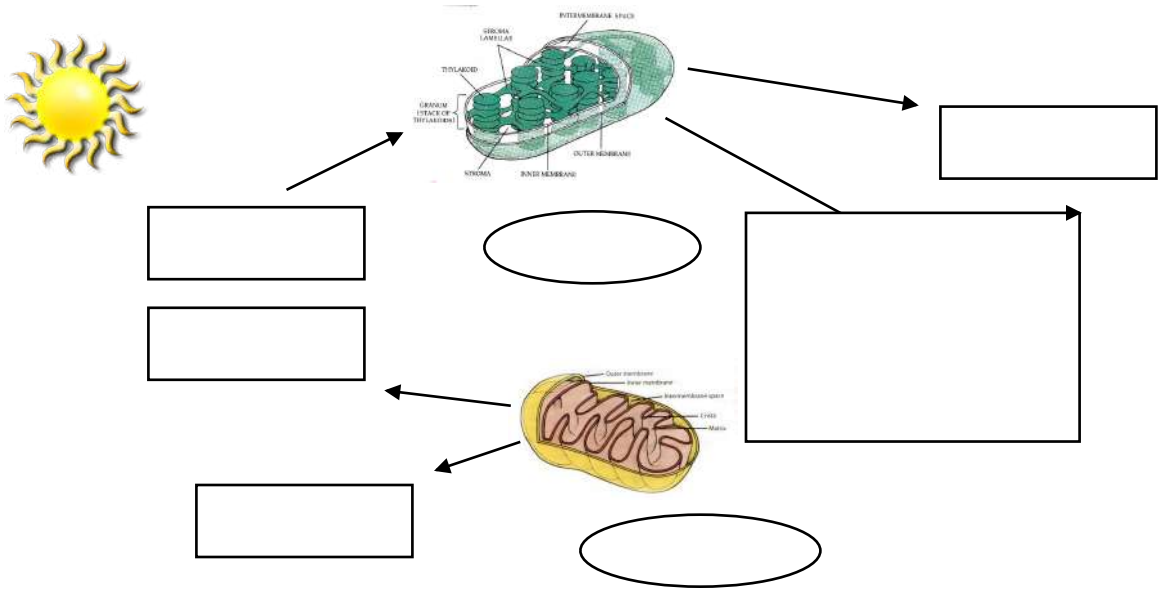
2. What are two products that are recycled back to the Light Dependent reaction from the Light Independent reaction? (NOTE: They are not mentioned in the diagram)

3. What organism does this process occur in? _____ What specific location within the cell does this occur in? _____

Part E. Read the clues for the jumbled words that appear below. Unscramble the words and place them on the blanks provided.

1. Organelle containing chlorophyll	SHORLAPLOCT	_____
2. Fuel used by cells	COGULES	_____
3. Atmospheric gas used by most cells	NEGOXY	_____
4. End product of glycolysis	PRYVUCI CAID	_____
5. Organelle with two membranes	TRIDIMONOCHON	_____
6. Waste product from cell energy production	BOCARN DIDIXOE	_____
(2 words)	and TEWAR	_____
7. Energy storage molecule	DINNEOASE	_____
(2 words)	SOPHTRIPATHE	_____
8. Needs energy to bond with a phosphate group	EDOISANNE	_____
(2 words)	OSPITAPHEDH	_____

Part F. Use the words that were unscrambled from Part E and put them in the correct blank in the diagram below.



Part G. Using the diagram above, answer the following questions.

1. Which cell process does the top half of the diagram represent?

2. In what types of organisms does this process occur?

3. Which cell process does the bottom half of the diagram represent?

4. In what types of organisms does this process occur?

5. What happens when the chemical bonds of ATP are broken?

6. How are photosynthesis and cellular respiration both similar and different?