Name _____

Date _____

Period _____

Cell Energy Sketch

Remember the equation for photosynthesis and cellular respiration?

Photosynthesis: $6CO_2 + 6H_2O$ + light energy ---> $C_6H_{12}O_6 + 6O_2$

Cellular Respiration: $C_6H_{12}O_6 + 6O_2$ ---> $6CO_2 + 6H_2O$ + ATP (energy)

Let's turn those into a diagram to explain how chloroplasts and mitochondria make food and energy for their cells.

Follow the directions below and look at page 150 in your textbook (or on the overhead!) to complete a sketch of the photosynthesis and cellular respiration cycle.

1. Sketch and label a chloroplast and a mitochondrion on the other side of this page.
2. Chloroplasts use light energy during photosynthesis. To your drawing, add a light source and an arrow from the light source to the chloroplast.
3. Chloroplasts give off O_2 (oxygen) and $C_6H_{12}O_6$ (glucose) during photosynthesis. Mitochondria use O_2 (oxygen) and $C_6H_{12}O_6$ (glucose) during cellular respiration. Add this information to your diagram, using arrows.
4. During cellular respiration, mitochondria produce ATP (energy). Add this information to your diagram, using arrows.
5. Chloroplasts also use CO_2 (carbon dioxide) and H_2O (water) to make $C_6H_{12}O_6$ (glucose). Add these to the sketch , using arrows.
6. Mitochondria also give off CO_2 and H_2O when they make ATP. Add these to the sketch, using arrows.