

Answers

1. What is photosynthesis?

How autotrophs use sunlight to convert  $CO_2 + H_2O$  into food (glucose)

The chloroplasts do most of the work  
They have green chlorophyll to absorb the light energy

Plants need chlorophyll to trap sunlight and convert it into the high-energy molecules of carbohydrates. Chlorophyll is best found in the upper part of the leaf.

2. What are the reactants for photosynthesis and complete the following:

These reactants needed for photosynthesis:  $CO_2 + H_2O$

These products produced by photosynthesis: glucose (C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>) + O<sub>2</sub>

3. What is cellular respiration?

How cells convert food (glucose) into ATP energy (cellular energy)

4. What are the reactants for cell respiration and complete the following:

These reactants needed for cellular respiration: C<sub>6</sub>H<sub>12</sub>O<sub>6</sub> + O<sub>2</sub>

These products produced by cell respiration:  $CO_2 + H_2O$

What is the "energy" source that is released? ATP

5. In what cell organelle does respiration take place in eukaryotes? Mitochondria

They have green chlorophyll to absorb the light energy

Mitochondria has a lot of inner membranes (it folded up) and this membrane contains the enzymes that build ATP

It has small pores that allow in and out of the organelle!

What other organelle is present in the cell?

The chloroplasts produced by each process are what's needed for the other process!  
Products of photosynthesis are the reactants of C.R.,  
and products of C.R. are the reactants of photosynthesis!

6. How do the two processes connect energy?

Energy can only flow from

sunlight into food energy (glucose) and ATP or that energy

into the respiration

