

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

Plants need chloroplast to trap sunlight and convert it food in the chloroplast. Chloroplasts have lots of chlorophyll to capture light energy

2. What about the equation for photosynthesis and complete the following

These 2 molecules needed for photosynthesis:  $CO_2 + H_2O$

These 2 molecules 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 about the equation for cell respiration and complete the following

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

These 2 molecules produced by cell respiration:  $CO_2 + H_2O$

What is the "energy" molecule that is produced? ATP

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

How does structure relate to function in this organelle?

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

It has a double membrane with pores in between

What other organelle does it resemble?

The mitochondria produced by each process are what's needed for the other process!

products of photosynthesis are the reactants of C.R.

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6. How do the two processes connect energy-wise?

Energy can only flow from

sunlight into food energy (glucose) and ATP energy

into the mitochondria

