Making Food and Getting Energy Graphic Organizer

Making Food: Glucose is made during photosynthesis

Getting Energy: Cellular Respiration produces ATP

Photosynthesis Cellular Respiration

1. What is it? Using light energy with CO2

and water to make carbohydrates (sugar) and release O2

2. What organelle? Chloroplast

3. Autotrophic or Heterotrophic? Autotrophic

1. What is it? Respiration is the process of using oxygen to breakdown carbs to get ATP.

2. What organelle? Mitochondria

3. Autotrophic or Heterotrophic? ALL!!!!

Two Parts Three Parts

1. Glycolysis = occurs in the cytoplasm and down carbohydrates into 2 pyruvic acids. Uses 2 ATP and we produce 4 ATP. Net =2 ATP

2. Kreb’s Cycle = occurs in the mitochondria

3. Electron Transport Chain (ETC) = also occurs in the mitochondria (Makes lots of ATP)

We get 36 total ATP from all of this.

1. Light Reaction – light breaks apart H2O and releases Oxygen, will “fuel” the Calvin Cycle

2. Calvin Cycle – Use products from the light reaction and CO2 to make carbohydrates.

6O2 + C6H12O6

Making Energy without Oxygen? Is it possible? Yes! Anaerobic Respiration (Lacks Oxygen)

1. Lactic Acid Fermentation – animals (Muscles)
2. Alcoholic Fermentation – fungi (yeast) and bacteria = produce breads and beverages

Only gain 2 ATP from this process.

It’s a cycle!!!!

The reactants of one are the products of the other

The equation:

Photosynthesis 6H2O + 6CO2 + light energy 6O2 + C6H12O6

Cellular Respiration 6O2 + C6H12O6 6H2O + 6CO2 + ATP