Science 14

Unit C: Matter and energy in living systems

Photosynthesis and respiration

Photosynthesis and respiration in daily life

- The leaf stores sunlight in glucose.
- The walker releases energy from food molecules with each breath.

Photosynthesis and respiration

- Photosynthesis stores light energy in glucose and releases oxygen.
- Cellular respiration releases usable energy from glucose in the mitochondrion.

Key terms

photosynthesis

The process in which plants store light energy in glucose, using carbon dioxide and water and releasing oxygen.

cellular respiration

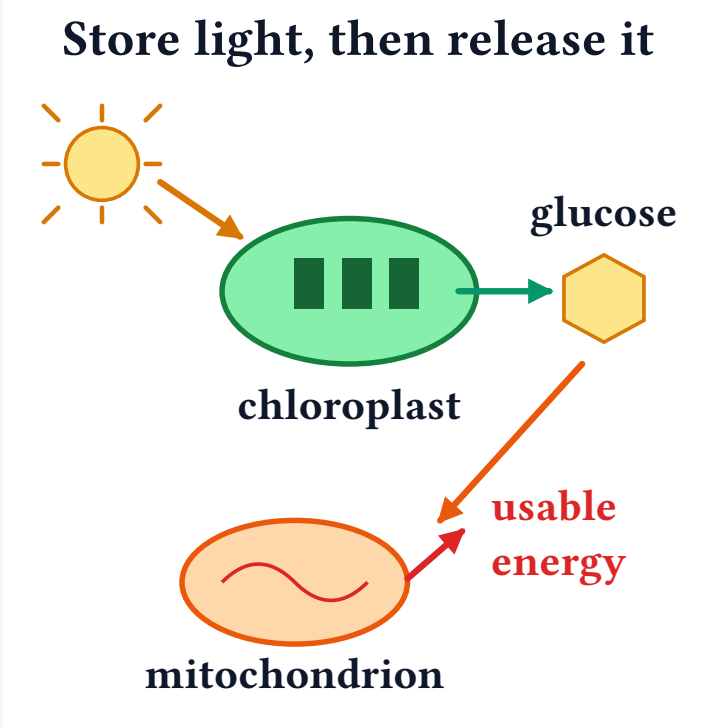
The process that releases usable energy from glucose, using oxygen and producing carbon dioxide and water.

life function

A job common to living systems: energy conversion, response, growth, reproduction, or managing thermal energy.

Energy storage and release

- Chloroplasts store light energy in glucose.
- Mitochondria release usable energy from glucose.



Where the energy sits

- A leaf is in the sun and a person is on a walk.
- Say where the energy in glucose comes from and where it is released.

Which process has the light

- Photosynthesis has light on the incoming side.
- Respiration starts with glucose and oxygen.

The word equation

- Write the word equation for photosynthesis from memory.
- Say what the arrow in that equation means.

Pair the equation with the organ

- Glucose is the stored form that links the leaf and the muscle.
- Sweat lets heat leave the skin. Hibernation and dormancy save energy through a hard season.