

Photosynthesis

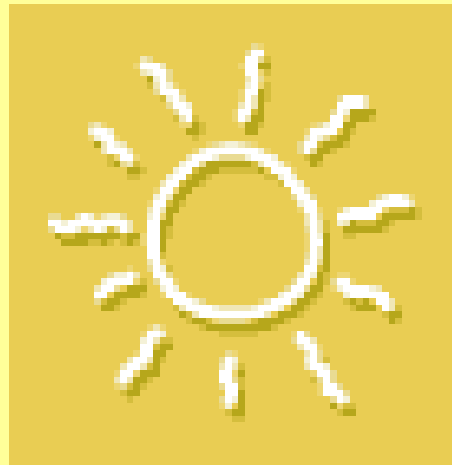




Name the compound that is essential to life.

Energy is essential to life.

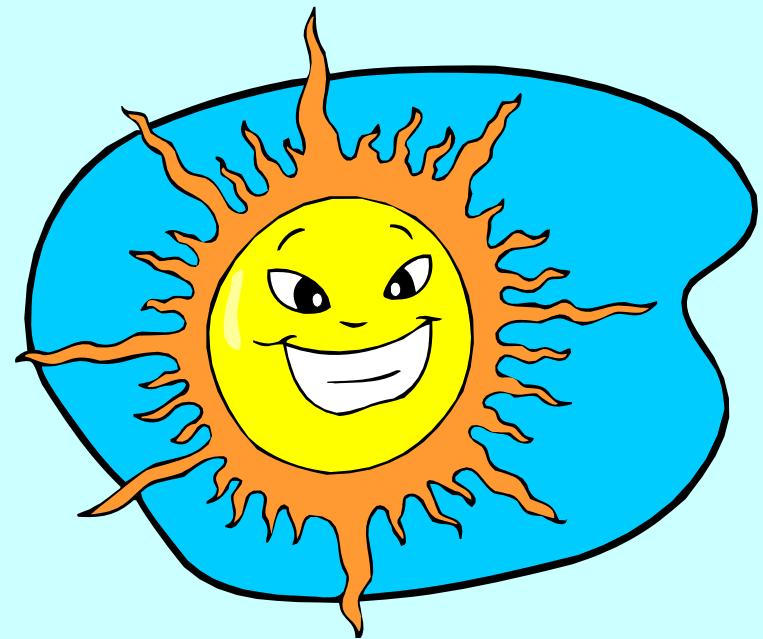
All living organisms must be able to obtain energy from environment in which they live.





How do plants obtain this essential element?

Trapping light energy in sunlight and storing in chemical bonds.





How do animals obtain this essential element?

By eating green plants.

In that way, animals obtain the energy stored in plants.





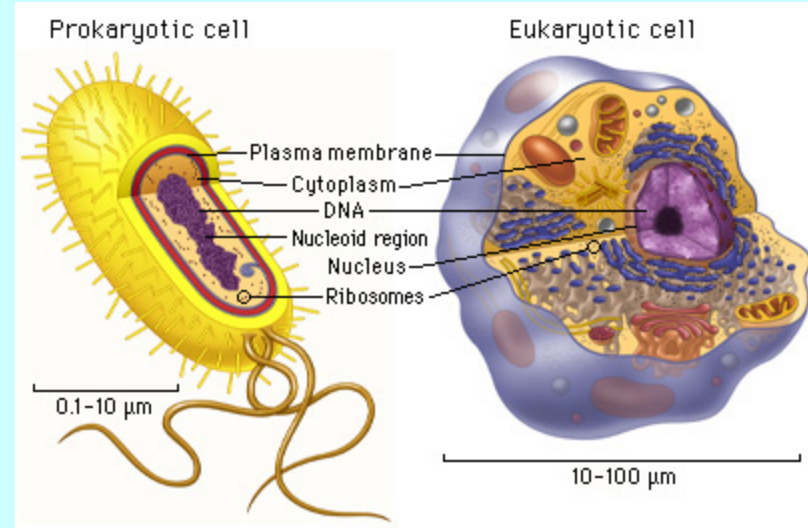
Name some cell processes that require energy?

Active Transport

Cell Division

Movement of Cilia and Flagella

Production, Transport, and Storage of Proteins



📖 Recall. Name the macromolecule that provides our cells with quickest source of energy.

Carbohydrates

Sugars





Define *ATP*

Adenosine
Triphosphate



Forming and Breaking Down ATP

3 Types of energy molecules

Adenosine --- (P) AMP Adenosine *mon*ophosphate

Adenosine --- (P) -- (P) ADP Adenosine *d*iphosphate

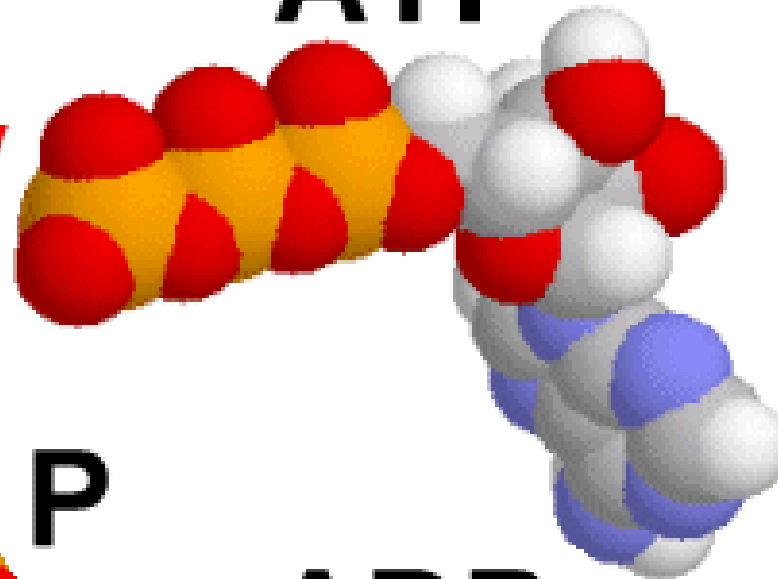
Adenosine --- (P) -- (P) -- (P) ATP Adenosine *tri*phosphate

Takes a lot of energy to join (P) together. **Why?** Has strong **positive** charge.

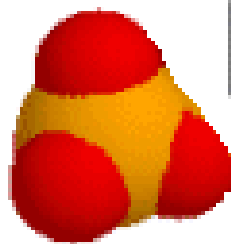
Who has the **most** energy? ATP

Hi
Energy

ATP

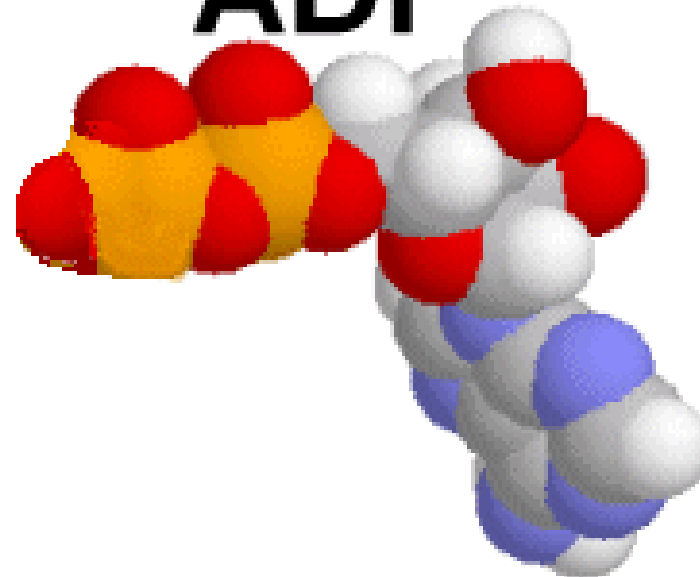


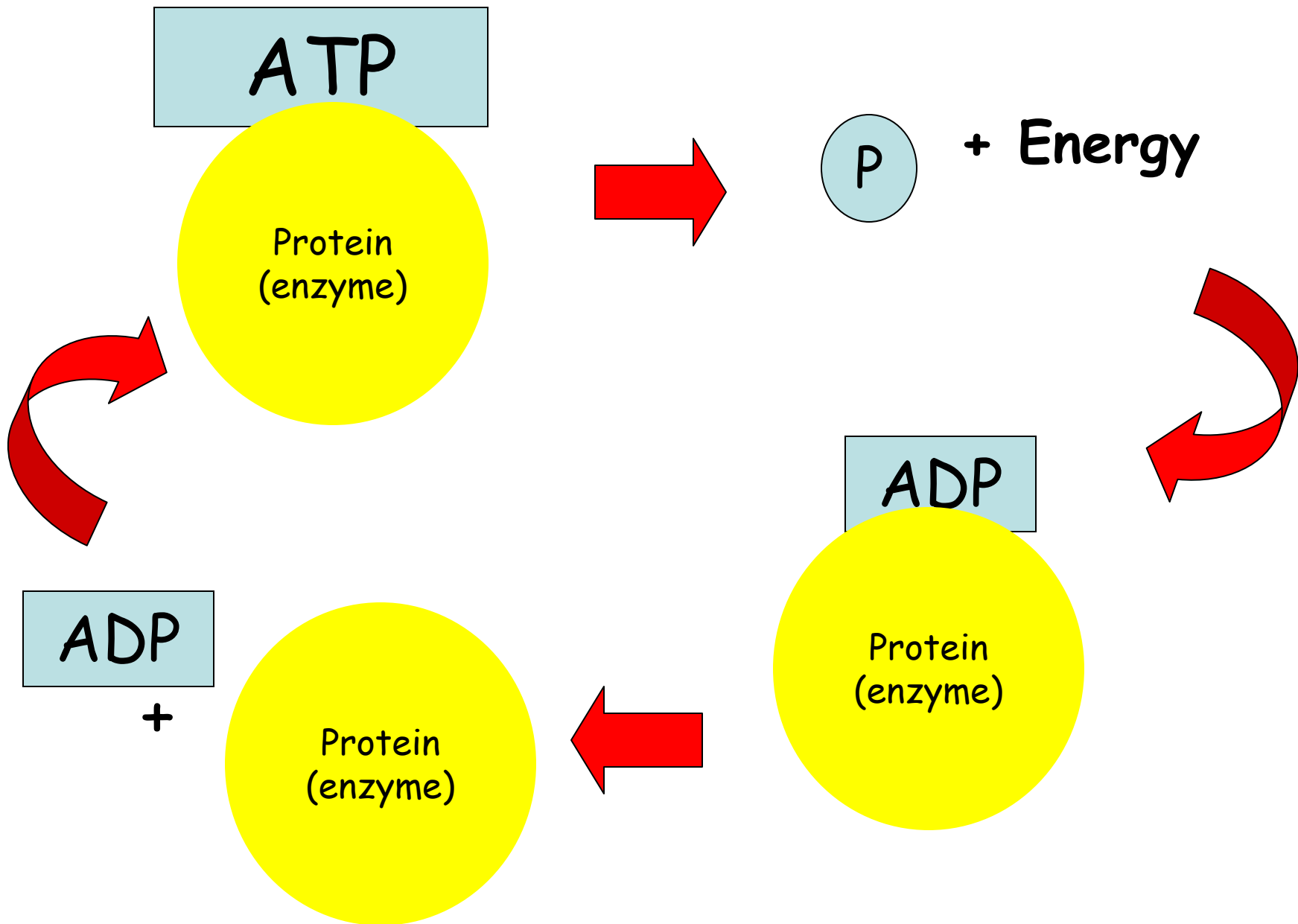
P



Low
Energy

ADP







Define *photosynthesis*.

The process that uses the sun's energy to make simple sugars is called *photosynthesis*.



💡 These simple sugars are then converted into complex carbohydrates, such as starches, which store energy.



How many phases are there in the process of photosynthesis?

2



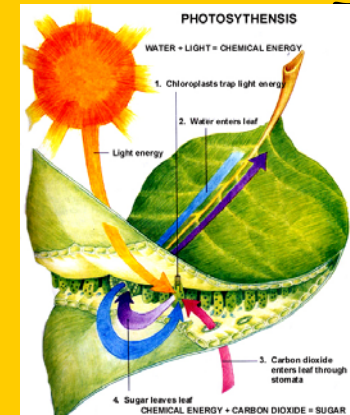
Name Phase 1

Light-Dependent Reactions



Describes what happens here.

Converts sunlight into chemical energy
(example: ATP molecules)



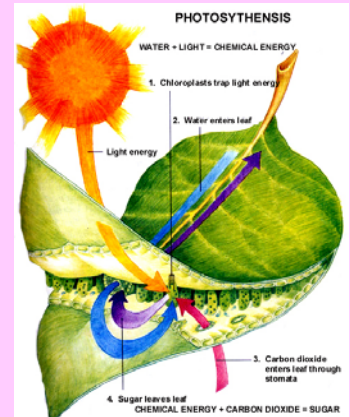
🧠 Name Phase 2

Light-Independent Reactions



Describes what happens here.

Uses ATP molecules to fuel the photosynthesis process to make simple sugars (glucose).



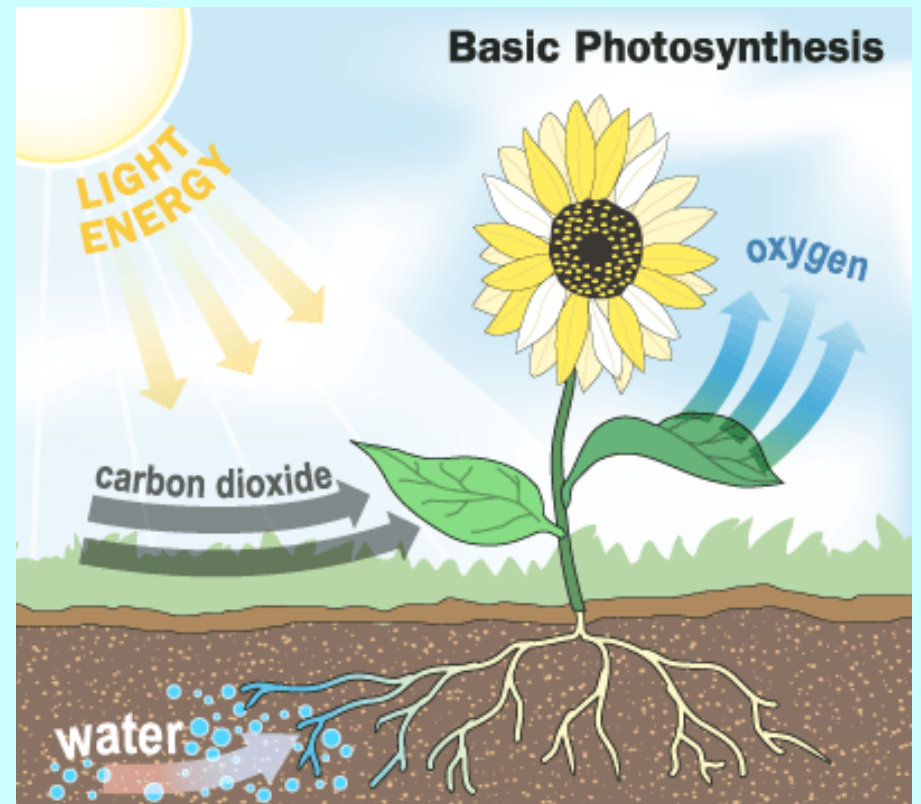


Name the 3 reactants needed for photosynthesis to occur.

Carbon dioxide (CO_2)

Water (H_2O)

Sunlight

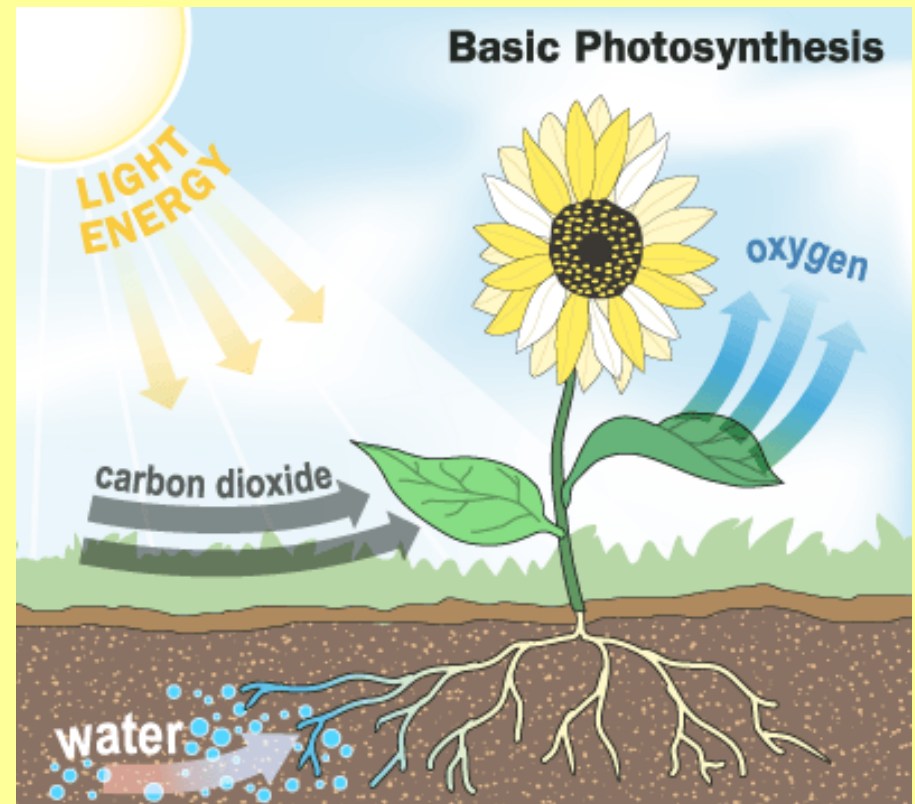




Name the by-products of photosynthesis.

Oxygen (O_2)

Sugars (glucose)



📖 Now, knowing the reactants and products, write the general equation for the process of photosynthesis.





Name the organelle (part of the cell) where photosynthesis occurs.

Chloroplast

