

# Energy and Life

## Chapter 8-1

# What are some activities that require energy?

- When you're awake?
- What about when you're sleeping?



# Where do we get our energy?



- The sun is the primary source of energy for all living things
- Autotroph – Uses energy from the sun to produce food through photosynthesis
  - Plants, algae
- Heterotroph – Gets energy from food produced by autotrophs
  - Animals – eat plants or other animals
  - bacteria, fungi – decompose other organisms

# Food Chain

- You (heterotroph) eat a burger
- The Cow (heterotroph) ate grass
- Grass (autotroph) used energy from the sun



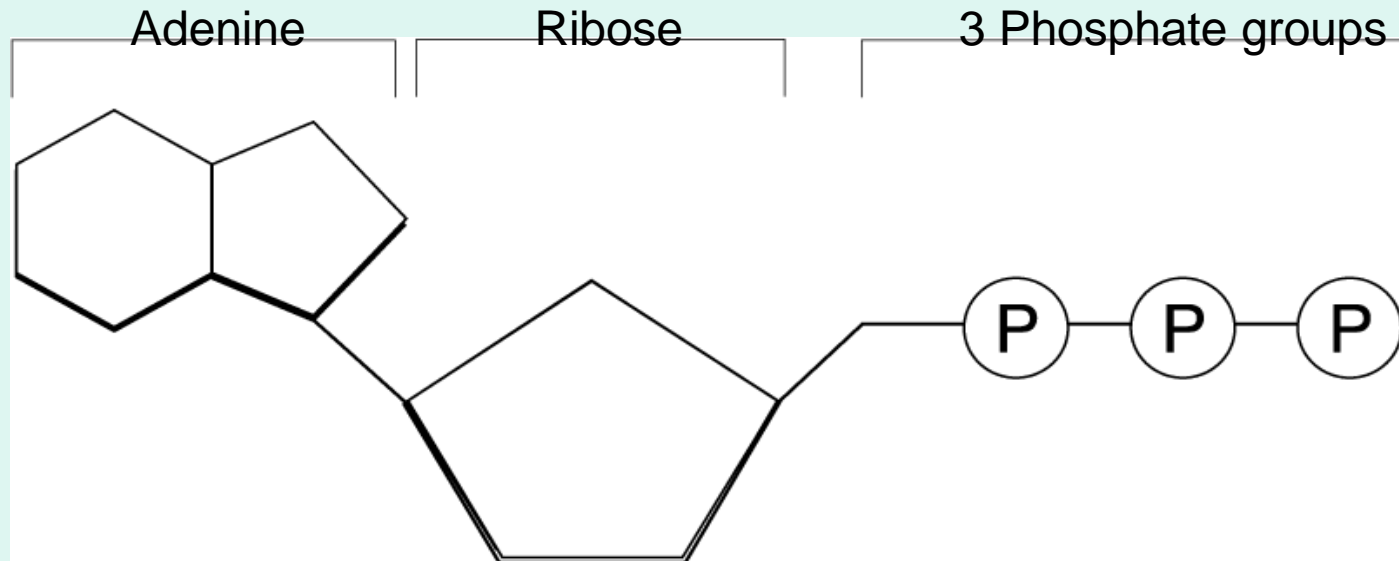
# Food chain

- Mold (heterotroph) decomposes bread
- Wheat (autotroph) gets energy from the sun



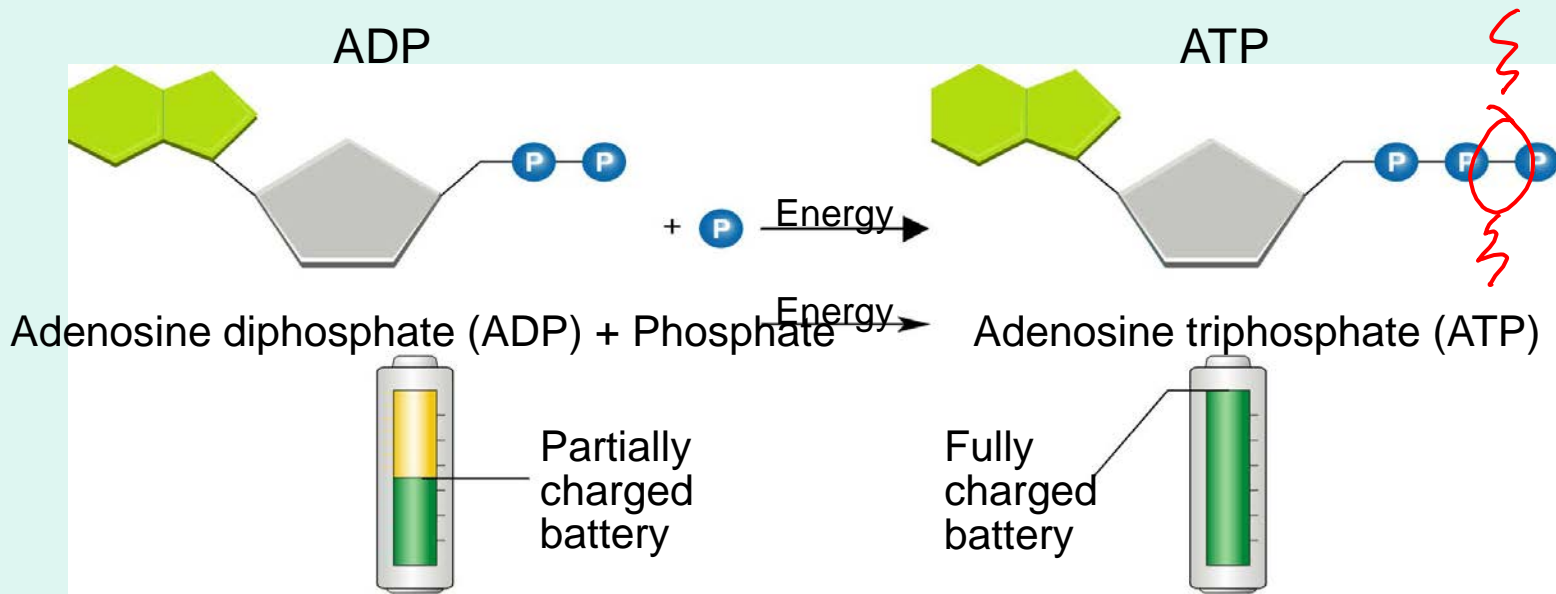
# ATP

- Adenosine triphosphate (ATP)
- Chemical energy used by cell
- Only stores energy for a few seconds



# Releasing Energy from ATP

- Energy from glucose is used to add the third phosphate to ADP (adenosine diphosphate)
- Energy is released when ATP is broken down to ADP and phosphate



# Energy Flow Chart

1. Solar Energy
2. Autotroph uses solar energy to make food
3. Heterotroph eats food autotroph made
4. That heterotroph is eaten by another heterotroph
5. The food is digested, glucose sent to the cells
6. Energy in glucose is used to turn ADP into ATP



# Energy Flow Chart

Solar Energy

Autotroph uses solar energy to make food

Heterotroph eats the food made by the autotroph

That heterotroph gets eaten by another heterotroph

Food is digested, glucose is sent to the cells

Energy in glucose is used to turn ADP into ATP