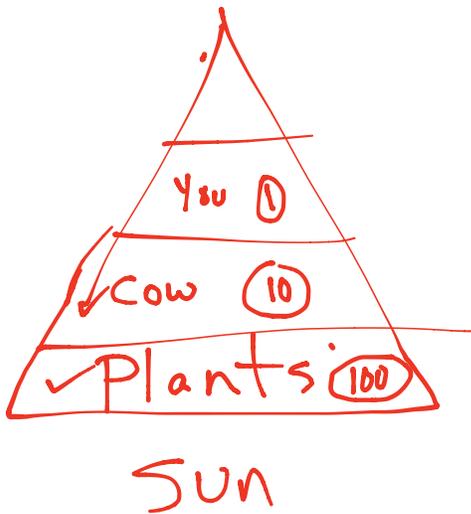


How is food or energy obtained?



What 2 ways is energy lost in a food chain?

Food chains

Food webs

Energy vs. nutrients

^{self} ^{feed}
Autotroph - an organism that can produce their own food, also called a producer

Photosynthesis - energy from the sun is converted into Sugar

Organisms that live on land and sea level do this

Chemosynthesis - energy from Sulfur (Volcano) inorganic chemicals is converted into Sugar

Organisms that live at the bottom of the ocean do this

^{other}
Heterotroph - an organism that must find food from other sources, they can't make their own (consumer)

- Herbivore - the organism eats only plants
- Carnivore - eats only animals
- Omnivore - eats both plants & animals
- Scavenger - eats only dead matter (detrivore)
- Decomposer - recycles nutrients when breaking down organic matter

1) Herbivores don't usually get much energy

2) 90 % is lost as heat from 1 trophic level to the next ^(from plants)

Show the flow of energy from 1 trophic level to another

Show many chains

Food webs are interconnected

Energy flows through - Need more

Nutrients are recycled ^{use same over. over}

Where is the energy from?

The ultimate source of energy is the Sun
Our food energy is Sugar which fuels our metabolism in the form of ATP (free energy)

Free energy

Free energy is energy available for life.
Examples of how our cells use it:

- Grow
- Move
- Reproduce
- Rebuild / Heal

What is metabolism?

metabolism - the sum of all chemical activities and changes in a cell or organism (a build-up or break down process)

Build-up

Synthesis - energy Requiring process, makes larger compounds (polymers) from smaller parts (monomers); ex - photosynthesis

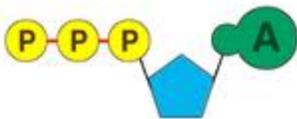


Breakdown

Decomposition - energy releasing process, makes smaller compounds (monomers) from larger ones (polymers); ex - cell respiration



ATP



ATP - adenosine triphosphate

- fully charged battery, can release energy for metabolism
- ATP is made by the mitochondria

ADP - adenosine diphosphate

- partially charged battery, can _____ E°
dead

Converting ADP into ATP is synthesis, needs energy from food (glucose) or light

Converting ATP into ADP is decomposition, releases energy for the organism