

Why do we eat?

Biosynthesis Metabolism: Food can be used to build you (may be referenced as 'bricks')

Energy Metabolism: Food can be used to make usable energy which can be used to power/fuel chemical reactions and interactions

What does Biosynthesis and Energy Metabolism do?

Biosynthesis	Energy Metabolism
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- Goal to build organic molecules	-Goal is to make usable energy (ATP)
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Autotrophs: CO ₂ -> all organics they need, which make food for all other heterotrophic organisms	-Can use chemical compounds inside their body for 1. (<i>all organisms perform Glycolysis</i>)
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Primary Producers	-To release heat as a by-product
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Heterotrophs- Organisms-> produce the organics they need, and must eat other organisms that have eaten autotrophs	Photoautotrophs- initial energy is from the sun
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Chemotrophs
Energy in chemical bonds

Glycolysis is the breakdown of glucose by enzymes

Types of Energy

Kinetic energy: Energy of movement (radiant, thermal, sound, mechanical and electrical)

Potential energy: Stored energy (gravitational, elastic, nuclear, chemical and thermal)

Field energy: electromagnetic (light) energy

Species Interactions

Amensalism: (-/0) One organism is harmed while the other is unaffected

Commensalism (+/0) One organism benefits while the other is unaffected

Mutualism (+/+) Facilitation can be mutualistic or commensalism

Consumer-Resource (+/-) One organism eats another organism

Interspecific competition (-/-) Both organisms competing over the same *limiting* resource

Resource Partitioning is the solution to this problem of interspecific competition

Species Interaction

Dominant Species	Keystone Species	Ecosystem Engineer
Abundant	Not abundant	Not Abundant
Hypothesis::Most competitive in exploiting resources	Many <i>indifferent</i> effects	Changes environment <i>directly</i>

Species Interaction (cont)

Hypothesis: Most successful at avoiding predation	Common that it's a predator
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	Impact through trophic/food interactions
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Ex: Kangaroo Rats	Ex: Bees & Hummingbirds	Ex: Trees & Beavers
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