Life on Earth

Characteristics of living things

- must do/have ALL in order to be living:
- have cellular organization
- contain similar chemicals
- use energy
- respond to their surroundings
- grow and develop
- reproduce

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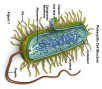
Cellular organization

- unicellular- single celled organisms (bacteria
- multicellular- many cells (plants, animals)



Similar chemicals

- most abundant is water
- carbohydrates- provide energy
- proteins and lipids- building blocks of cells
- nucleic acids- genetic material of cell

Energy use

- cells use energy to perform a variety of functions
- release energy through respiration

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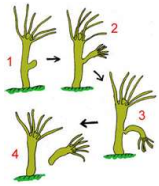
Responds to surroundings

- causes the organism to react- stimulus
- reaction to stimulus- response

Grow and develop

- growth- to become larger
- development- process that produces a more complex life



Reproduction

- produce offspring by sexual or asexual reproduction
  - -sexual- two parents; different offspring
  - -asexual- one parent; identical offspring

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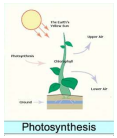
What do living things need?



- Food
  - - used for energy
  - - Autotroph- makes own food
  - - Heterotroph- cannot make own food; have to find food by eating other organisms
- Water
  - - needed to perform functions inside the body
- Living space
- Homeostasis
  - - must maintain internal conditions for cells to function properly
  - - example- animal wadding in water to cool off to maintain body temperature

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Classifying living things

- taxonomy- used to organize organisms
  - -Domain
  - -Kingdom
  - -Phylum
  - -Class
  - -Order
  - -Family
  - -Genus
  - -Species

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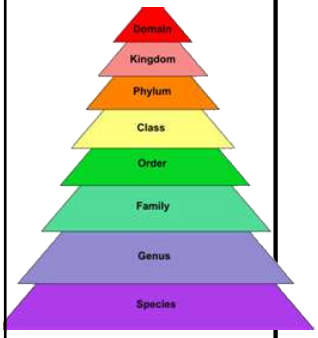
Domain



- Bacteria- unicellular prokaryotes (no nucleus in cell)
  - autotrophs and heterotrophs
  - also called eubacteria
- Archaea- unicellular prokaryotes
  - autotrophs and heterotrophs
  - live in hot gas vents in deep ocean
  - some can move
  - also called archaebacteria
- Eukarya- eukaryotes (have nucleus in cell)
  - protists, fungi, plants and animals

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Kingdom	• Organisms are placed into kingdoms based on their ability to make food and the number of cells in their body. -Plantae -Animalia -Protista -Fungi -Monera

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Phylum	• The first major division for each kingdom
Class, Order and Family	• These levels become even more specific and will include fewer organisms that have more in common with each other as they move down the levels.

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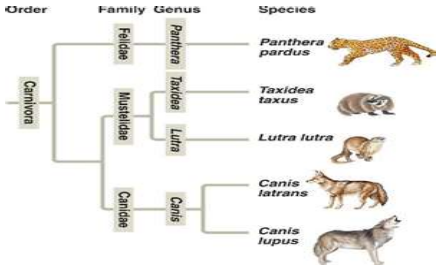
Genus	• group that contains similar, closely related organisms (ex. Felis- cat, Canis- Dog)
Species	• group that can mate with one another and produce offspring that can also mate and reproduce
Scientifc Names	• Binomial nomenclature- using the genus and species to name an organism • It is always written in latin, italics and the genus is capitalized (ex- *Canis lupus, Felis domesticus*)



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