

Living vs. Non-Living

Which of these things are living? Which are non-living?



mushroom



teddy



zebra



skateboard



fish



crocodile



tree



doll



dragon fly



chair



ball



flower



cloud



bird



frog

How did you distinguish between the living and the non-living? What characteristics must an object have in order to be considered “alive?”

Living Things



- An organism is any living thing.
- An object is only an organism if it meets 6 key criteria.

How do scientists know?



Scientists have proven that all living things have these things in common:

- Living things grow and develop.
- Living things respond to their environment.
- Living things reproduce.
- Living things use energy.
- Living things are organized.
- Living things are made of cells.

Living things grow and develop.



In a lifetime, a butterfly will go through many stages of growth and development.

Living things respond to their environment.



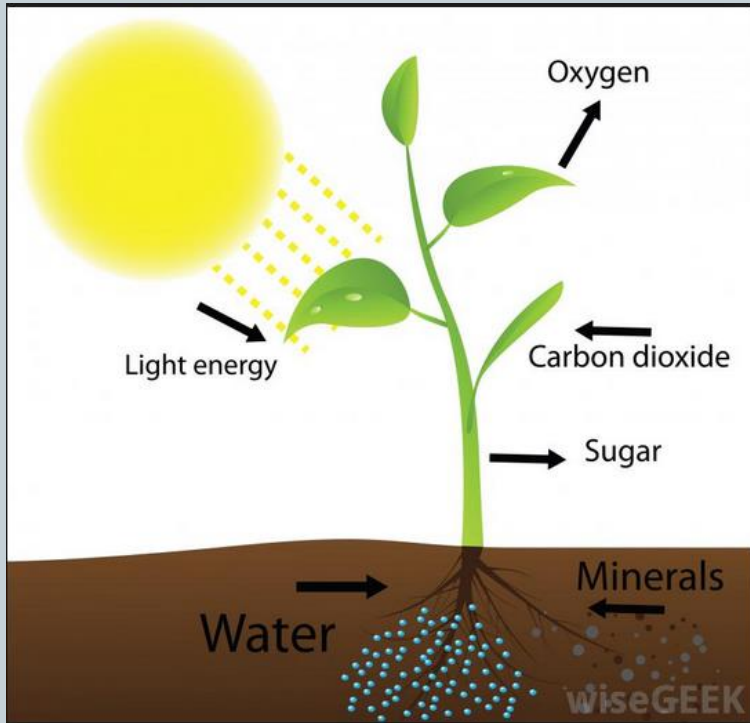
The eye dilates when it is exposed to varying amounts of light.

Living things reproduce.



Organisms can create offspring of the same species.

Living things use energy.



Autotrophs are organisms that get energy from inorganic (non-living) substances like light and air.

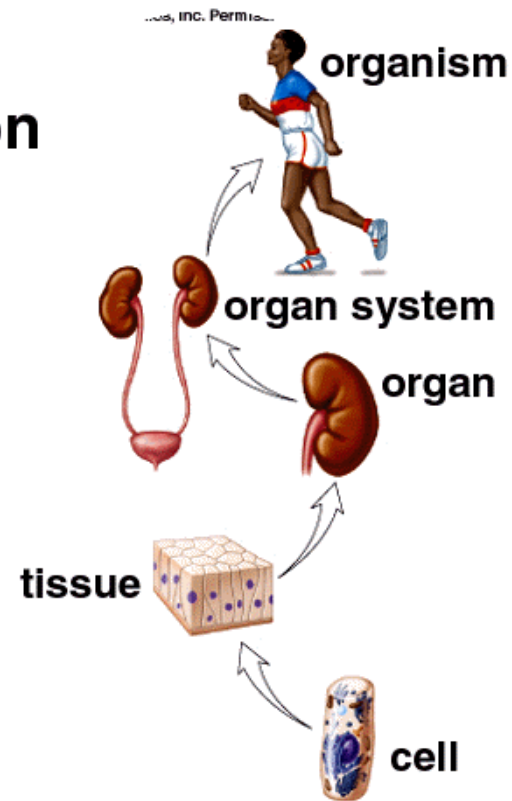


Heterotrophs are organisms that must consume organic (living) substances in order to get energy

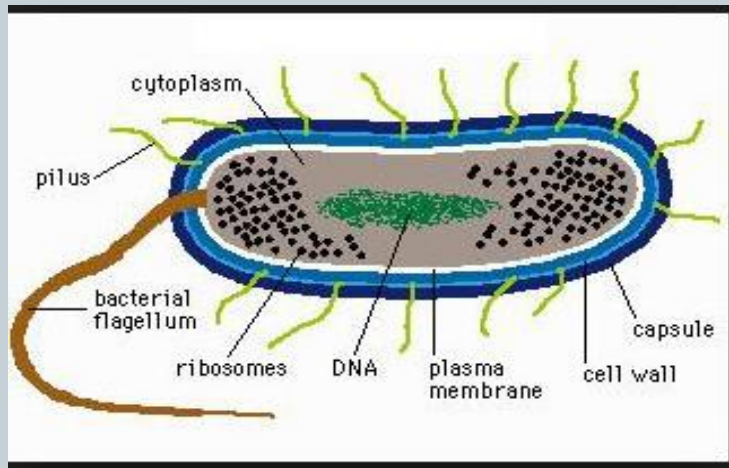
Living things are organized.

Small parts work together to form bigger parts that perform important functions.

Levels of organization

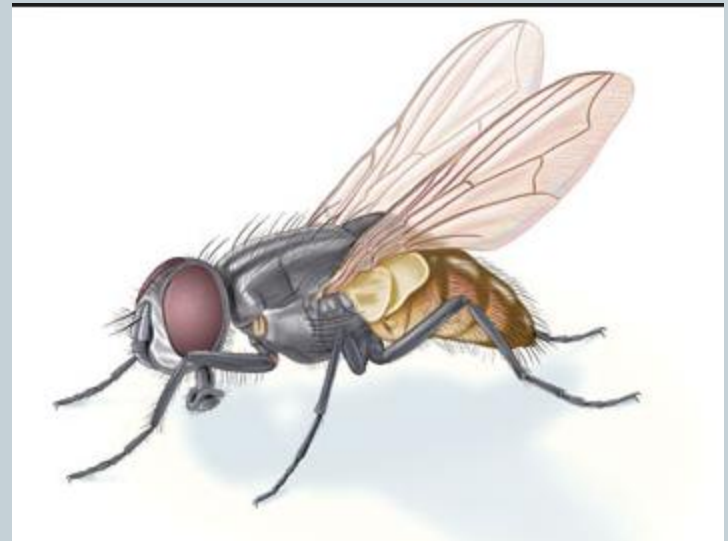


Living things are made of cells.



Unicellular organisms are made up entirely of just ONE CELL! Most unicellular organisms are microscopic and can't be seen with the naked eye. Examples include amoebas and bacteria (left)

Multicellular organisms are made up of trillions of different cells. This fly has muscle cells that help it move, optic nerve cells that help it to see, blood cells that transport materials throughout the body and many, many more!



Basic Needs of All Organisms



- Steady supply of energy (either from inorganic substances or organic substances). This means all organisms need food.
- Water.
- An appropriate habitat.
- An essential gas such as oxygen, nitrogen, carbon dioxide, etc. The specific materials vary based on the organism (for example, plants need carbon dioxide while humans benefit most from oxygen).