LIVING, NON-LIVING, DEAD

How can you tell the difference?

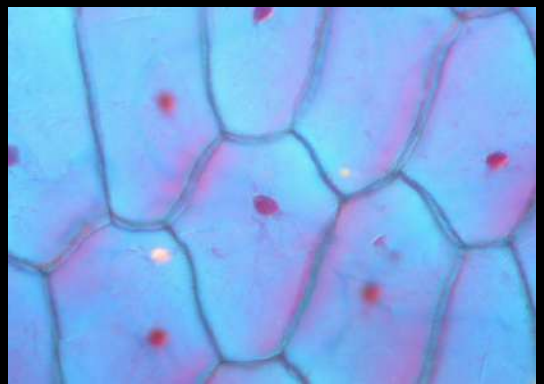
Living Things

- Living things have at least 6 common characteristics
  1. They have cellular ORGANIZATION
  2. They have similar CHEMICALS of life
  3. They use ENERGY
  4. They respond to STIMULI
  5. They GROW and DEVELOP
  6. They can REPRODUCE

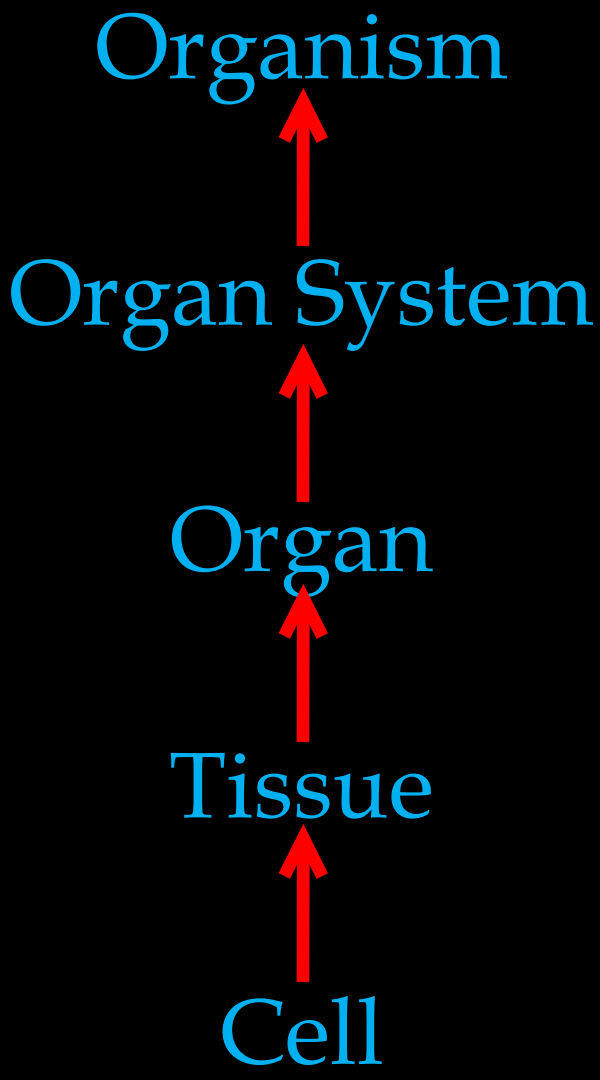
Organization

- **Organization** means that the living things are made up of cells

- Cells are orderly and structured living units that are capable of carrying out specific processes



Organization

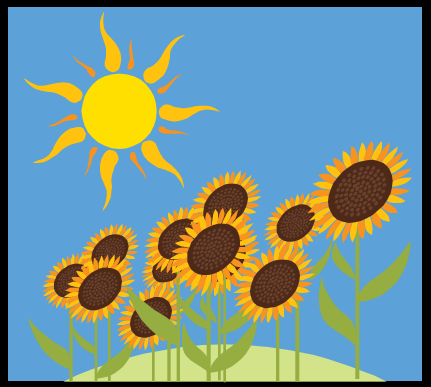


Uses Energy

- Living things need energy to live
  - Animals get energy from eating food
  - Plants make their own food using energy from the sun.
- The sun is the main source of energy for living things.

Respond to Stimuli

- A **stimulus** is anything that gets an organism to respond.
- Example: plants grow when sunlight is shown on them.
  - Sunlight is the stimulus
  - Plant growth is the response



Grows and Develops

- Living things have the ability to grow and change.

Can Reproduce

- **Reproduction** is when a living organism can make another living organism like itself.

Needs of Living Things

- All living things need:
  - Water
  - Food
  - Living space (shelter)
  - Stable internal conditions (homeostasis)

Homeostasis

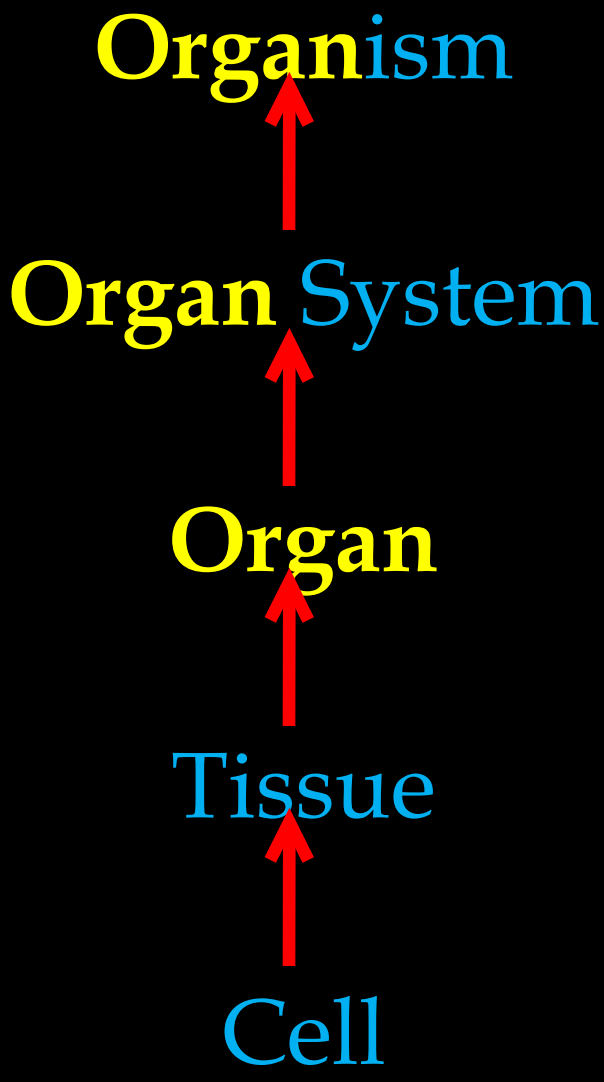
- **Homeostasis** is when a living thing can maintain a balance of proper conditions inside it so it can live.

- Homeostasis is one way an organism responds to stimuli.

Organism

- An **organism** is any living thing.

Organization



Living

- To be considered a living thing, it must have all 6 characteristics of living things

Non-Living

- In order to consider something non-living, **it must not have any of the 6 characteristics of living things.**
  - Examples: chair, pen, desk, water

or

- **It was living or dead and has been *processed*** (chemically altered)
  - Examples: paper, leather shoes, apple juice

Dead

- In order to consider something dead, it must have been alive at one time and it no longer has any of the six characteristics of living things.

Living, Non-Living or Dead? Let's Discuss

Tree

Tree

- Living
  - It is able to do all 6 functions necessary to all living things
    1. It is made up of cells (organization)
    2. It has similar chemicals
    3. It uses the sun's energy to make food
    4. It can respond to stimuli in its surroundings
    5. It can grow
    6. It can make seeds that can grow into more trees.

Wood

Wood

- Dead
  - It is NOT able to do all 6 functions necessary to all living things
    1. It is made up of cells (organization), but the cells are dead
    2. It cannot grow in response to sunlight
    3. It cannot uses the sun's energy to make food
    4. It cannot grow
    5. It cannot make seeds that can grow into more trees.
    6. It does not have similar chemicals of life

Paper

Paper

- Non-Living
  - Although as a tree it was once living, now it is NOT able to do all 6 functions necessary to all living things *and* it has been processed
    1. It *was* made up of cells (organization), but the cells were broken down when the wood was chopped up to make the paper
    2. It cannot grow in response to sunlight
    3. It cannot uses the sun's energy to make food
    4. It cannot grow
    5. It cannot make seeds that can grow into more trees.
    6. It does not have similar chemicals of life

Potential for life

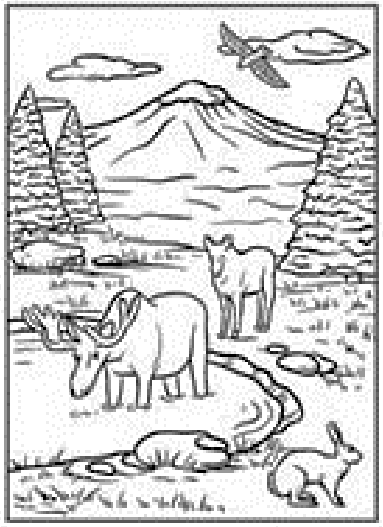
- When something has the potential for life, it means that it could have all of the characteristics of a living thing if it was under the right conditions.
  - Examples would be:
    - Seeds
    - Nuts
    - Eggs

Factors in an Ecosystem

- Abiotic: all the non-living factors in an ecosystem
  - Example: air, water, dirt, rocks, mountains, etc.
- Biotic: all the living factors in an ecosystem
  - Example: grass, trees, moose, humans, insects, etc

- All of the biotic factors in the ecosystem are dependent upon the abiotic factors

Factors in an Ecosystem



ECOSYSTEM