

Objective:

Students will be able to identify the characteristics that living things share by evaluating multiple objects and watching a power point.

Warm Up:

**Place the following in order from smallest to largest:
Atom, Biome, Biosphere, Cell, Community, Ecosystem,
Molecule, Organ, Organ System, Organelle,
Organism, Population, Tissue.**

**Correct Order: Atom, molecule, organelle, cell,
tissue, organ, organ system, organism, community,
ecosystem, biome, biosphere.**

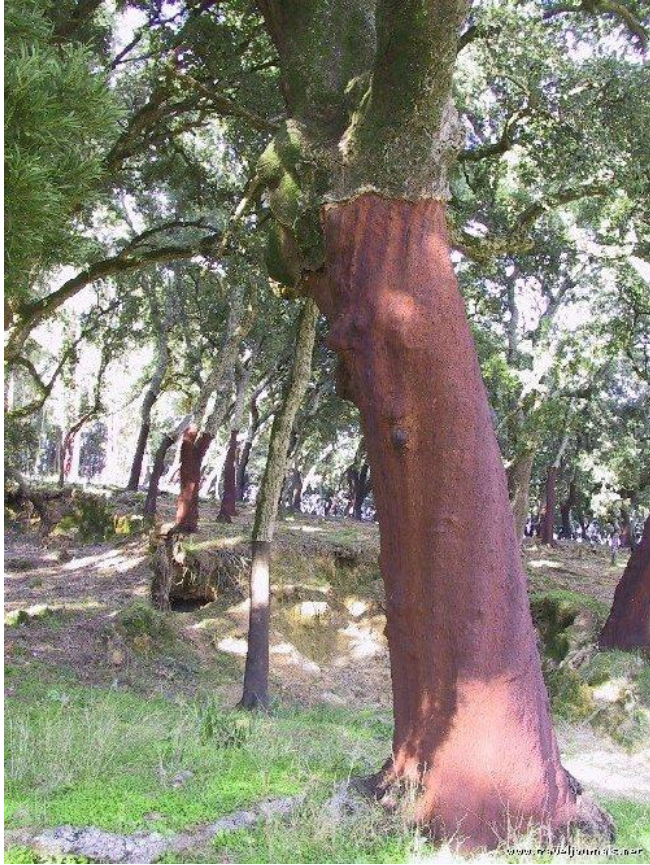
In your lab group, at your desks, decide on the characteristics of life that you believe living things possess.

Write them down on the lab worksheet.

Go to your lab table & observe the object.

Find the number that corresponds with its number on your lab sheet. Check off any of the characteristics that this objects possess.

When told rotate clock-wise around the room to the next table.



Living Things

HERE ARE A FEW EXAMPLES



Bacteria



Bread mold



Malaria
protozoan



Flatworm



Paramecium



Rotifer



Roundworm



Yeast



Snail



Spider



Tree



Sea lion



Turtle



Penguin



Humans

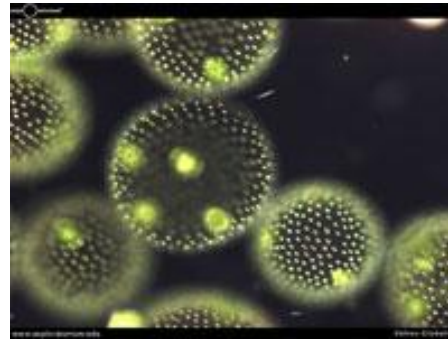
SO WHAT DO ALL OF THESE THINGS HAVE IN COMMON?

CELLS

ALL living things are composed of one or more cells.

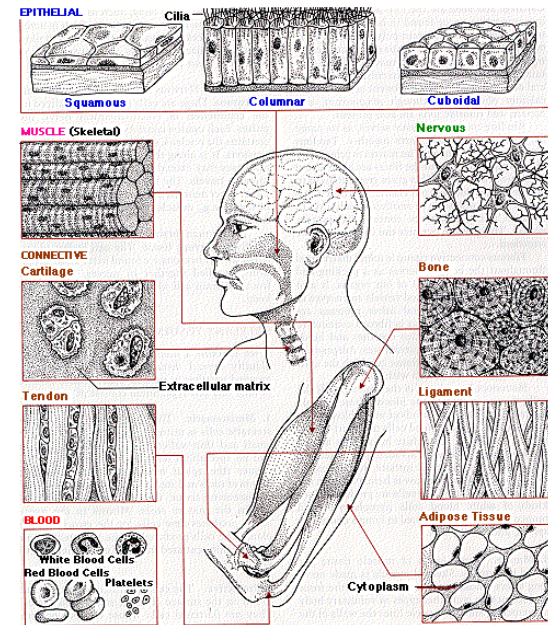


One celled



Colonial volvox

Many cells working together



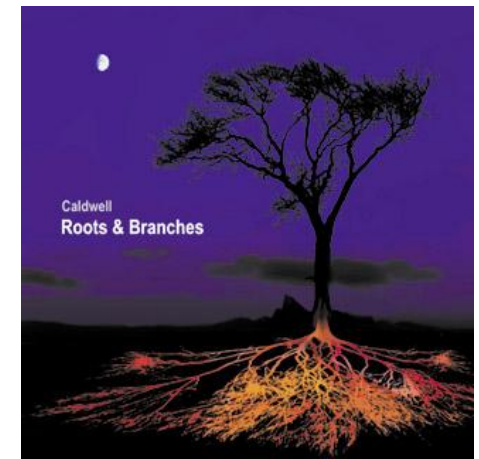
Multi-cellular

METABOLISM

Metabolism – using energy in chemical reactions. This energy is needed to maintain molecular & cellular structure as well as to grow & reproduce.

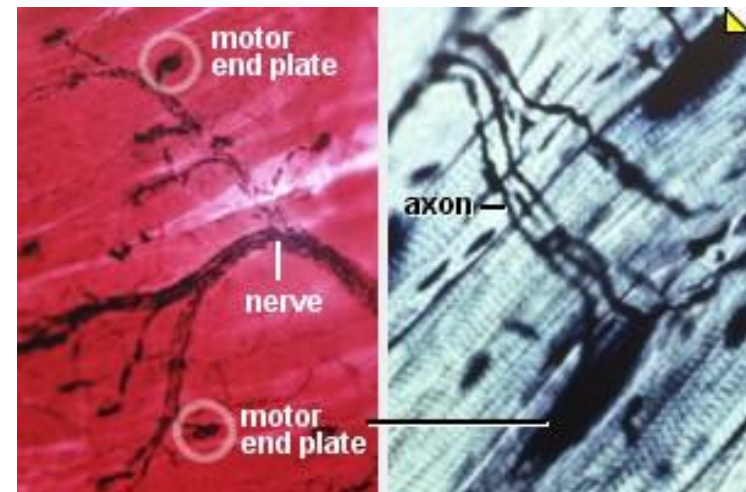
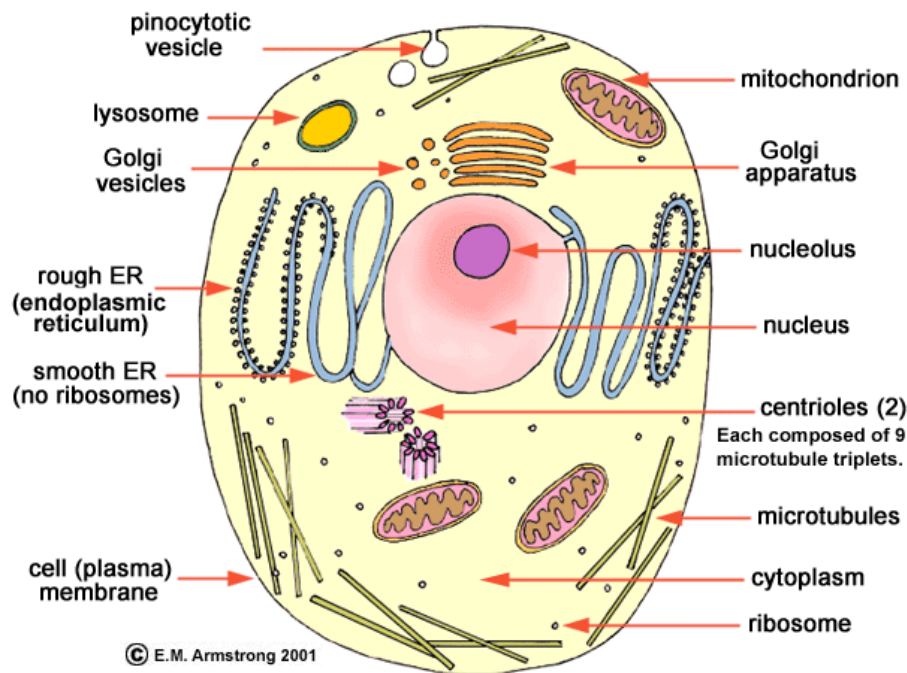


[paramecium animation](#)



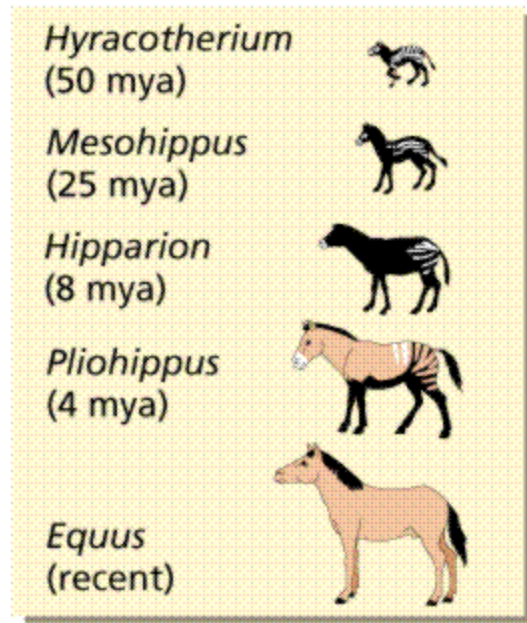
ORGANIZED

Highly organized – all living things are highly organized at both the molecular and cellular levels. Groups of cells work together in multi-cellular level



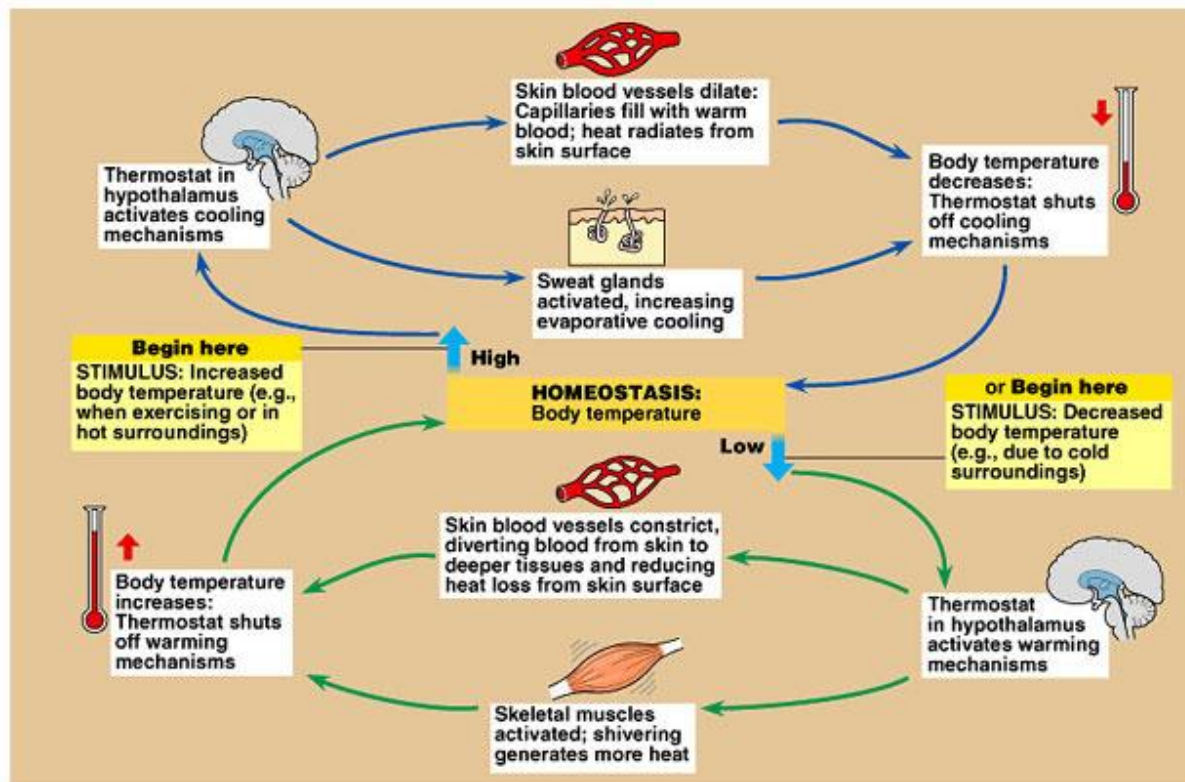
Evolution

Populations of organisms evolve over time primarily by Natural Selection.



HOMEOSTASIS

Homeostasis – maintain a stable internal environment. All living things must maintain a stable temperature, water, mineral & sugar content.



GROWTH

Living things grow by cell division whereas non-living things grow by accumulating more material.



REPRODUCTION

Reproduction is necessary for the survival of the species. In sexual reproduction genetic material is combined. In asexual reproduction, cells divide by a process called fission.



Yeast dividing.

[Tai shan's 1st year in slides](#)



[Panda cam](#)

Mei Xing and new baby.

Cows Must Only Eat Hay Grown Right.

Cells

Metabolism (energy use)

Organization

Evolution .

Homeostasis

Growth

Reproduction.

Let's review the 6 characteristics that all living things share:

1. Composed of one or more cells.

2. Metabolism = energy use in chemical reactions. This energy is needed to maintain molecular & cellular structure as well as to grow & reproduce.

3. Organized at both the cellular & multi-cellular level.

4. Evolution -Populations of organisms evolve over time primarily by Natural Selection.

5. Homeostasis – maintain a stable internal environment. All living things must maintain a stable temperature, water, mineral & sugar content.

6. Growth by cell division. (Non-living things grow by accumulating more material.

7. Reproduction is necessary for the survival of the species. In sexual reproduction genetic material is combined. In asexual reproduction, cells divide by a process called fission.

So why isn't a virus considered living?



It is not composed of one or more cells.

All living things possess all 6 characteristics.