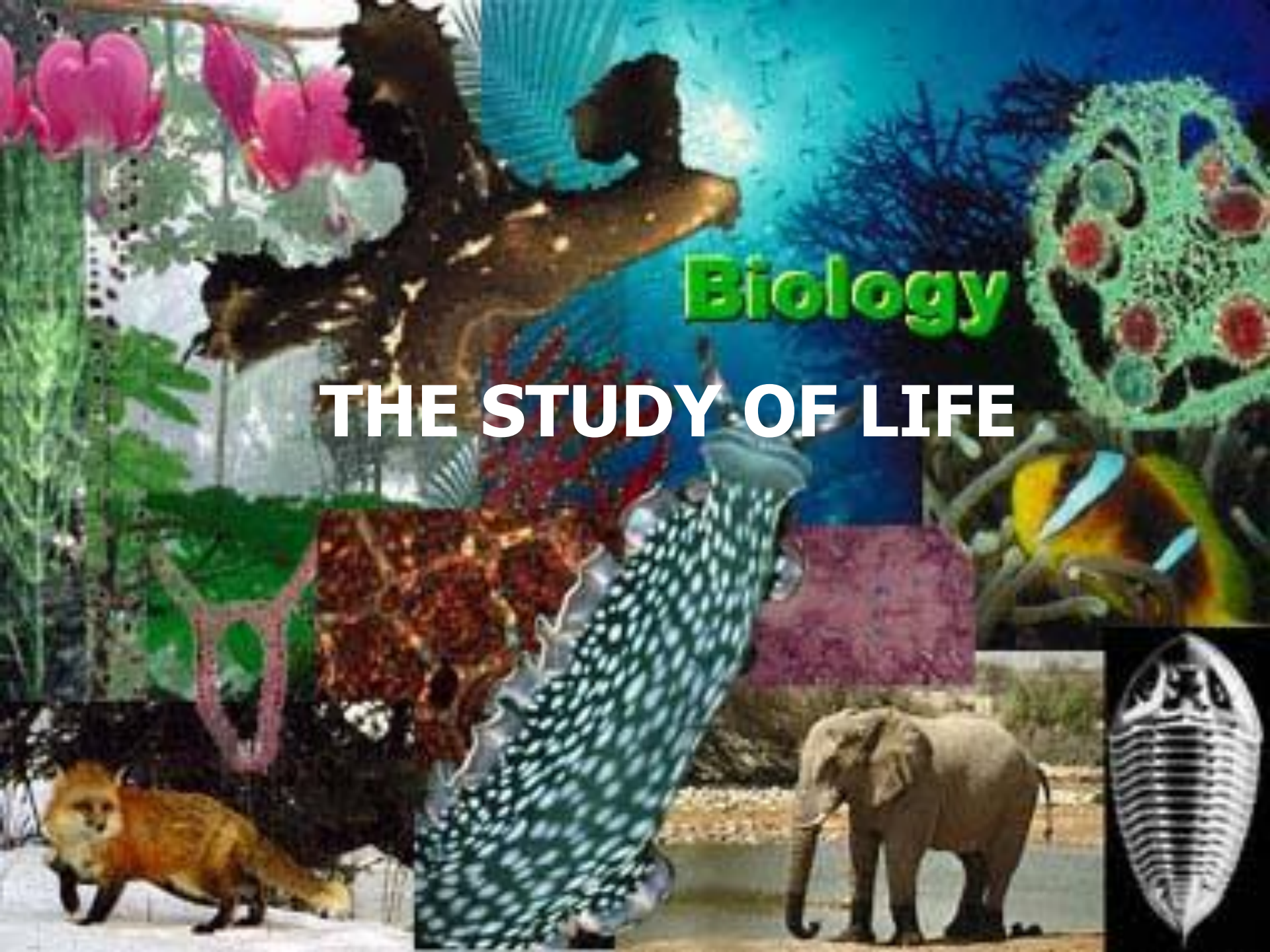
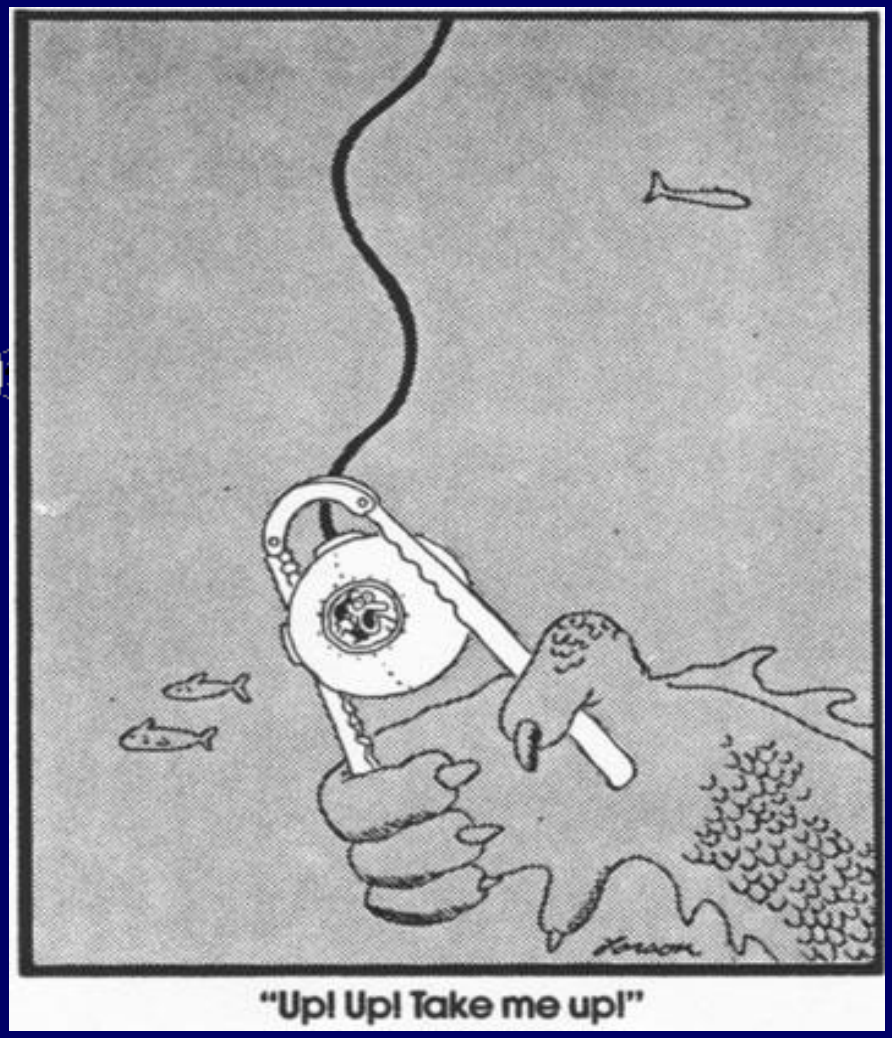
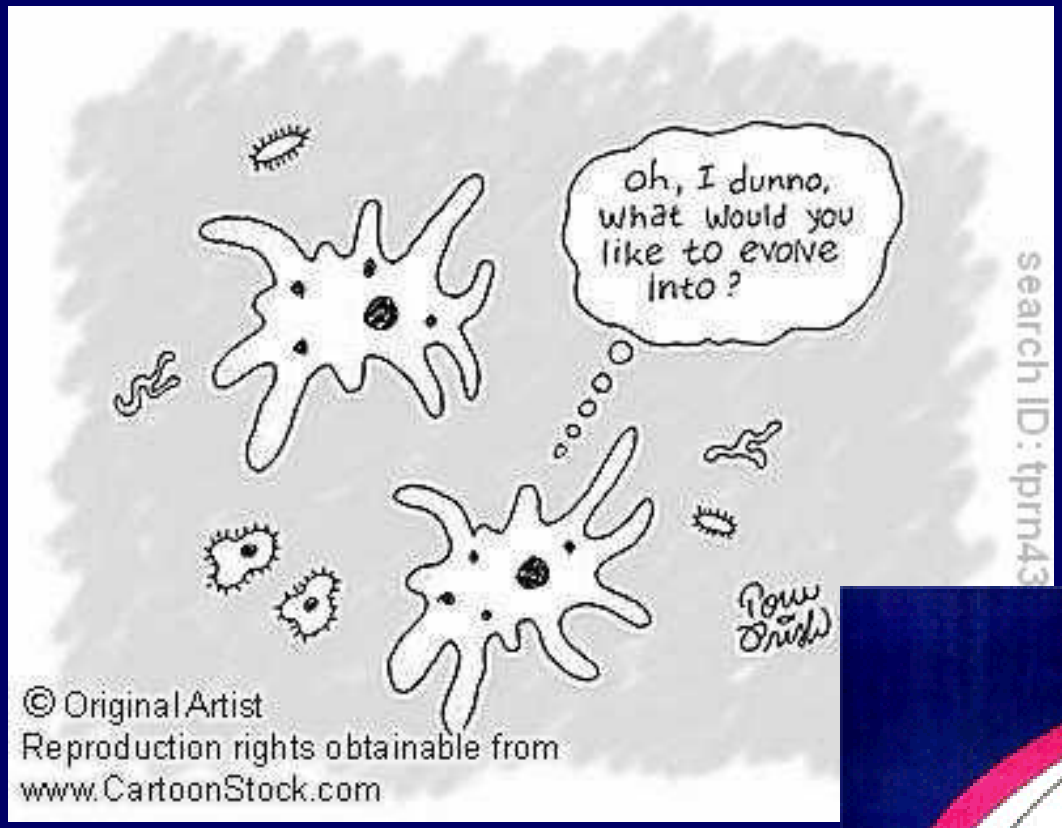

Biology
THE STUDY OF LIFE

FIRST LIFE FORMS:

- ~3.5 BILLION YEARS AGO
- SINGLE CELLED IN THE OCEANS
- ONLY ~ 5% OF ALL ORGANISMS HAVE BEEN IDENTIFIED




Oh, I dunno, what would you like to evolve into?
search ID: tprn43
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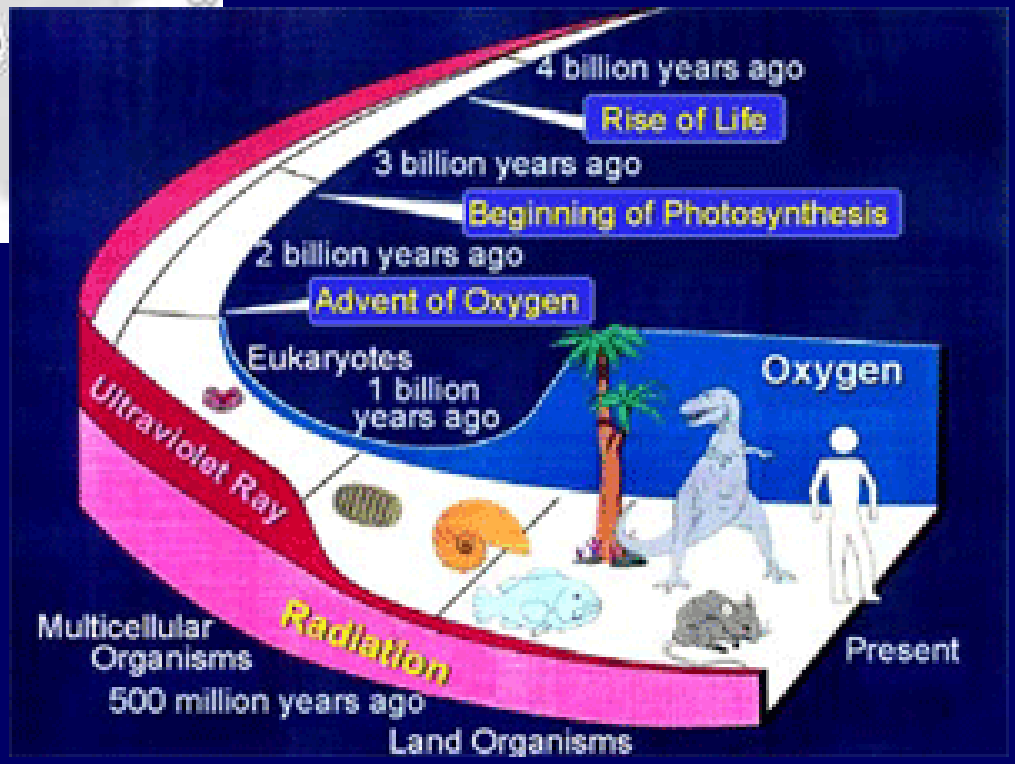
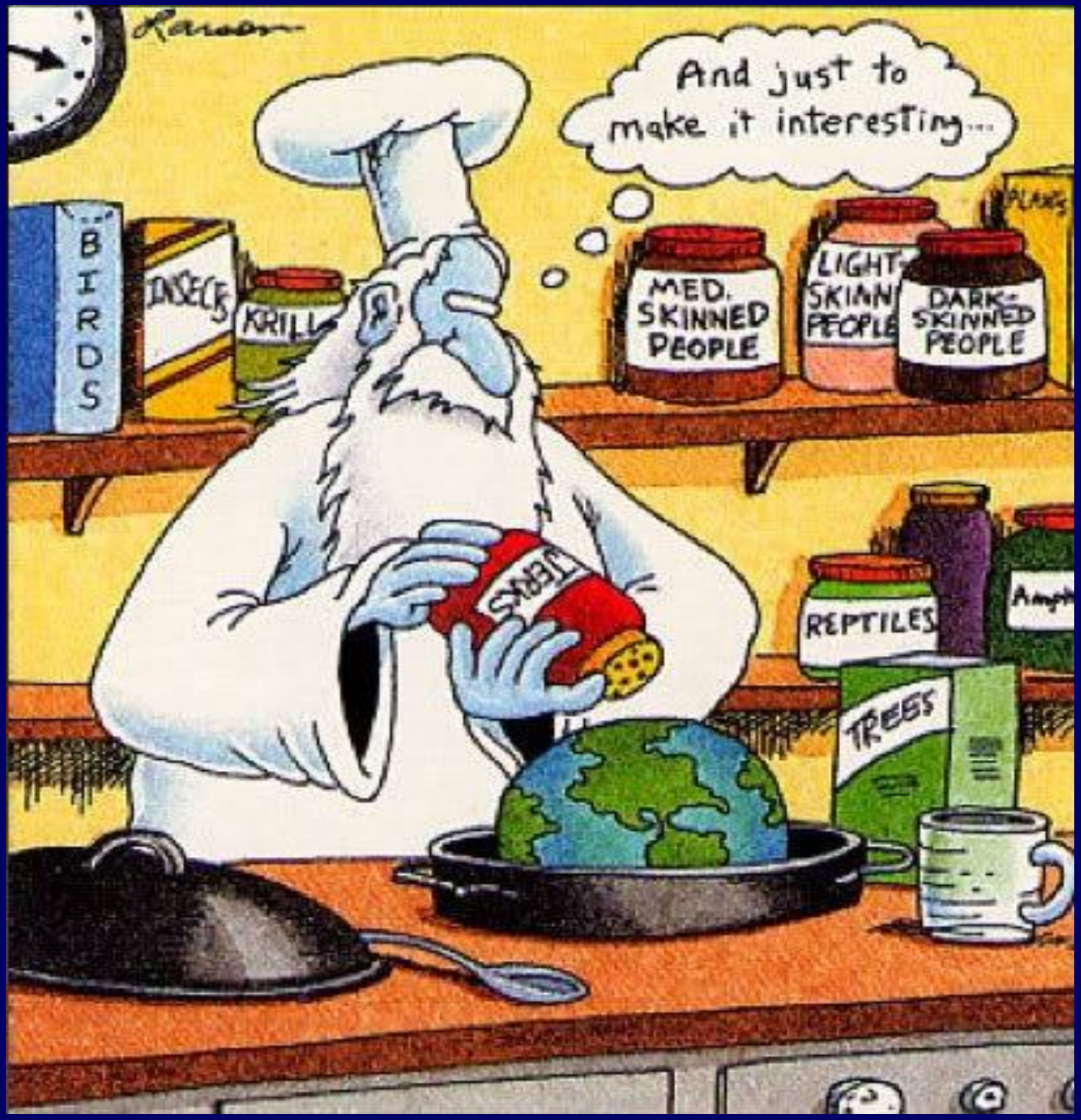

4 billion years ago
Rise of Life
3 billion years ago
Beginning of Photosynthesis
2 billion years ago
Advent of Oxygen
Eukaryotes
1 billion
years ago
Oxygen
Ultraviolet Ray
Radiation
Multicellular
Organisms
500 million years ago
Land Organisms
Present


And just to make it interesting...
BIRDS
INSECTS
KRILL
MED. SKINNED PEOPLE
LIGHT-SKINNED PEOPLE
DARK-SKINNED PEOPLE
REPTILES
TREES

ORGANISM CLASSIFICATIONS:

- UNICELLULAR-COMPOSED OF ONE CELL
- MULTICELLULAR-COMPOSED OF MORE THAN ONE CELL
- PROKARYOTES-SIMPLE ORGANISMS THAT LACK A MEMBRANE BOUND NUCLEUS AND SOME ORGANELLES
- EUKARYOTES-COMPLEX ORGANISMS THAT HAVE A MEMBRANE BOUND NUCLEUS AND CONTAINS ALL ORGANELLES

SPONTANEOUS GENERATION:

hypothesis stating that life could come from nonliving matter.

Geese from the mud banks of rivers

Salamanders from wood & fire

Bees from the decayed body of a bull

Redi's Experiment on Spontaneous Generation-flies and meat

BIOGENESIS: "life comes from life."

Redi's Experiment on Spontaneous Generation-flies and meat

Pasteur's Experiment with broth proved that

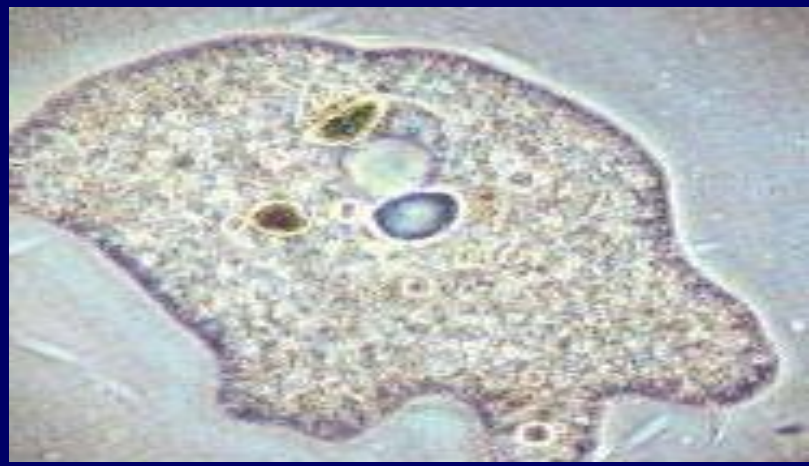
Characteristics of Life:

1. Cells
2. Reproduce
3. Universal Genetic Code
4. Grow and Develop
5. Obtain and Use Energy
6. Respond
7. Homeostasis
8. Evolve

Living things or organisms are made up of units called cells.

-some are **uni**cellular

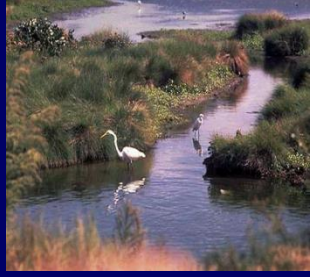
(bacteria & protists)



-some are **multi**cellular

(plants, fungi & animals)

LEVELS OF ORGANIZATION



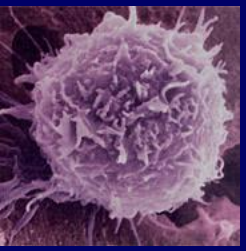
Ecosystem

Population & Community

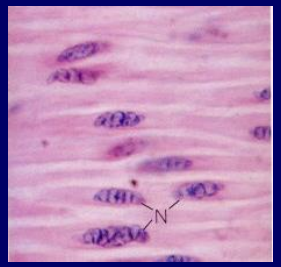
Individual

Systems

Organs

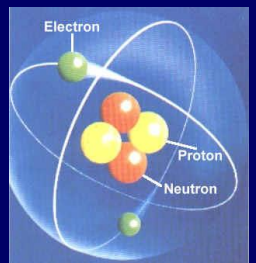


Tissues



Cells

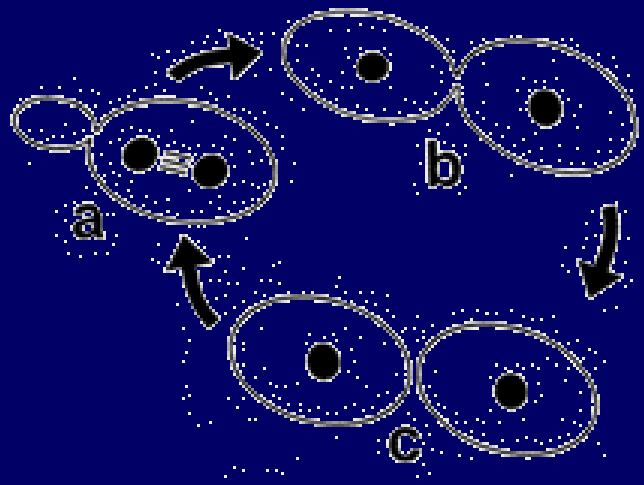
Atoms & Molecules



REPRODUCTION: produce new organisms

Asexual: single parent

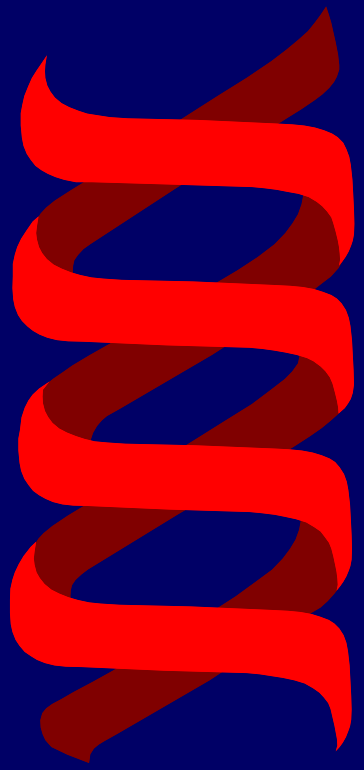
(budding, binary fission and regeneration)



Sexual: 2 parents (egg & sperm or pollen)

Universal Genetic Code

- Directions for inheritance are carried by molecule called DNA.



GROWTH & DEVELOPMENT:

*** Growth is an increase in size**

vs.

Infant

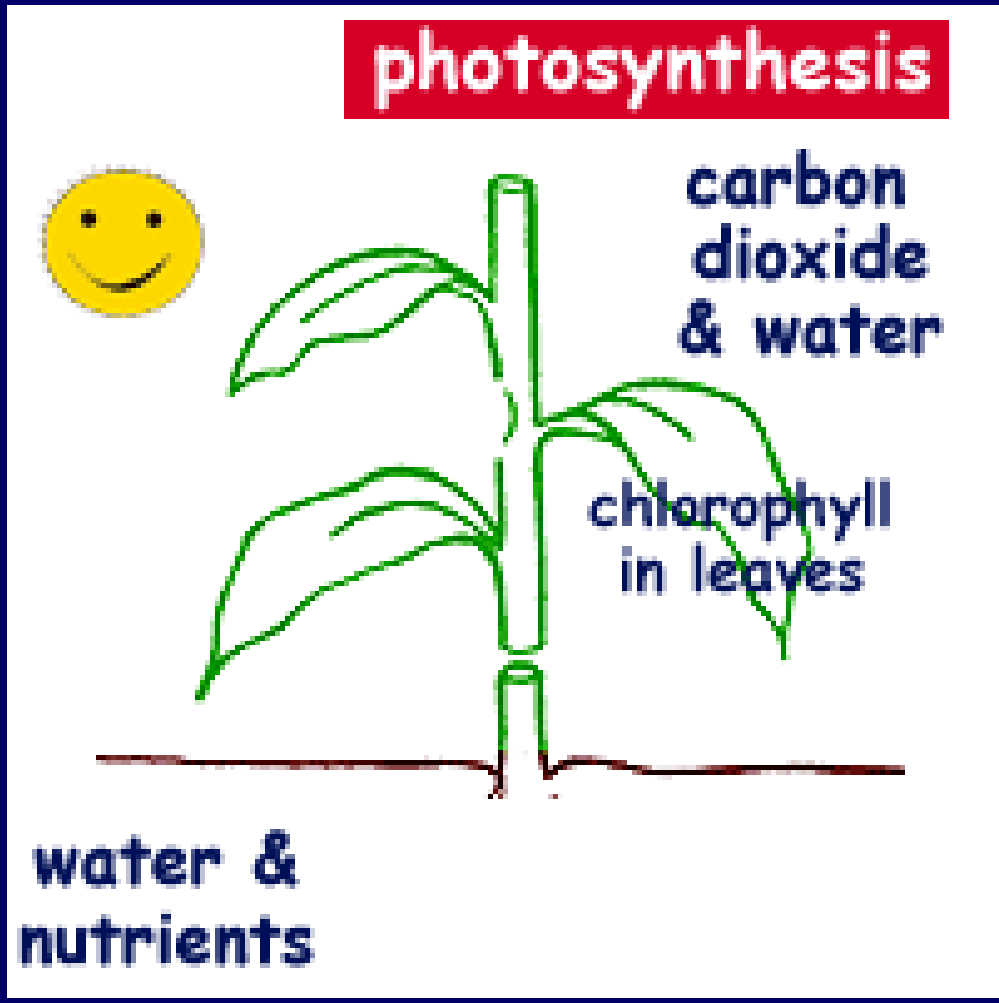
Adolescent/teen

* **Development is a change in <u>shape</u>.**

<u>Example</u>: Metamorphosis of a caterpillar to a butterfly

Obtain and Use ENERGY:

Metabolism: all the chemical reactions within an organism



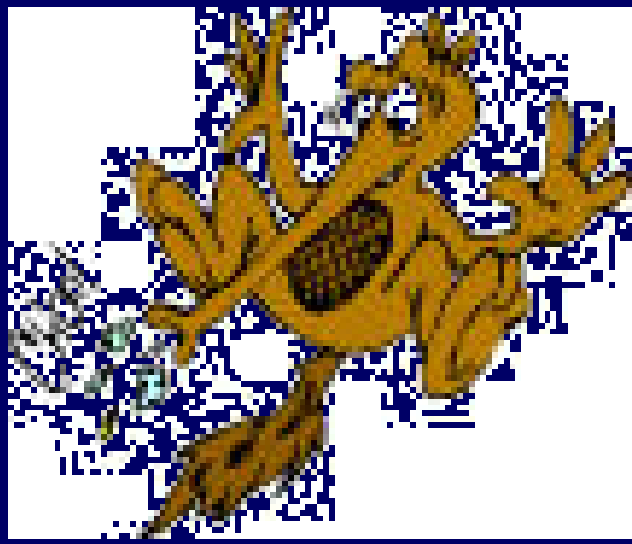
Example:

plants and photosynthesis

RESPOND to Environment:

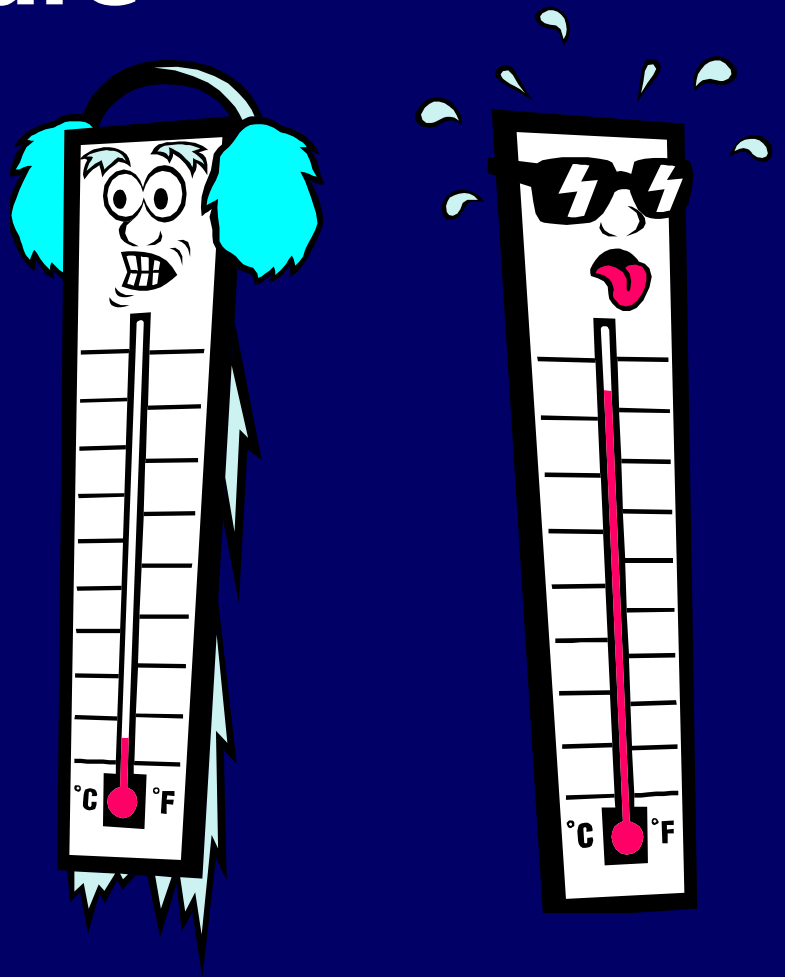
___react to a stimulus

Ex. Sneezing due to dust, plants growing toward light, birds migrating.



HOMEOSTASIS

- **Maintaining stable internal condition**
- **Ex. Body temperature**
  - **–shivering**
  - **–sweating**



Evolution

- As a group, organisms can change over time.

VIRUSES: Are they organisms (alive)?

- Require a host
- Replicate, do not reproduce
- not made-up of cells