

Welcome to Biology

Monday
9/13/21

**Phones away and things
out of ears please -
Masks covering face
holes
Thank you!!**



Daily Agenda

1. The Characteristics of Life with the Amoeba Sisters

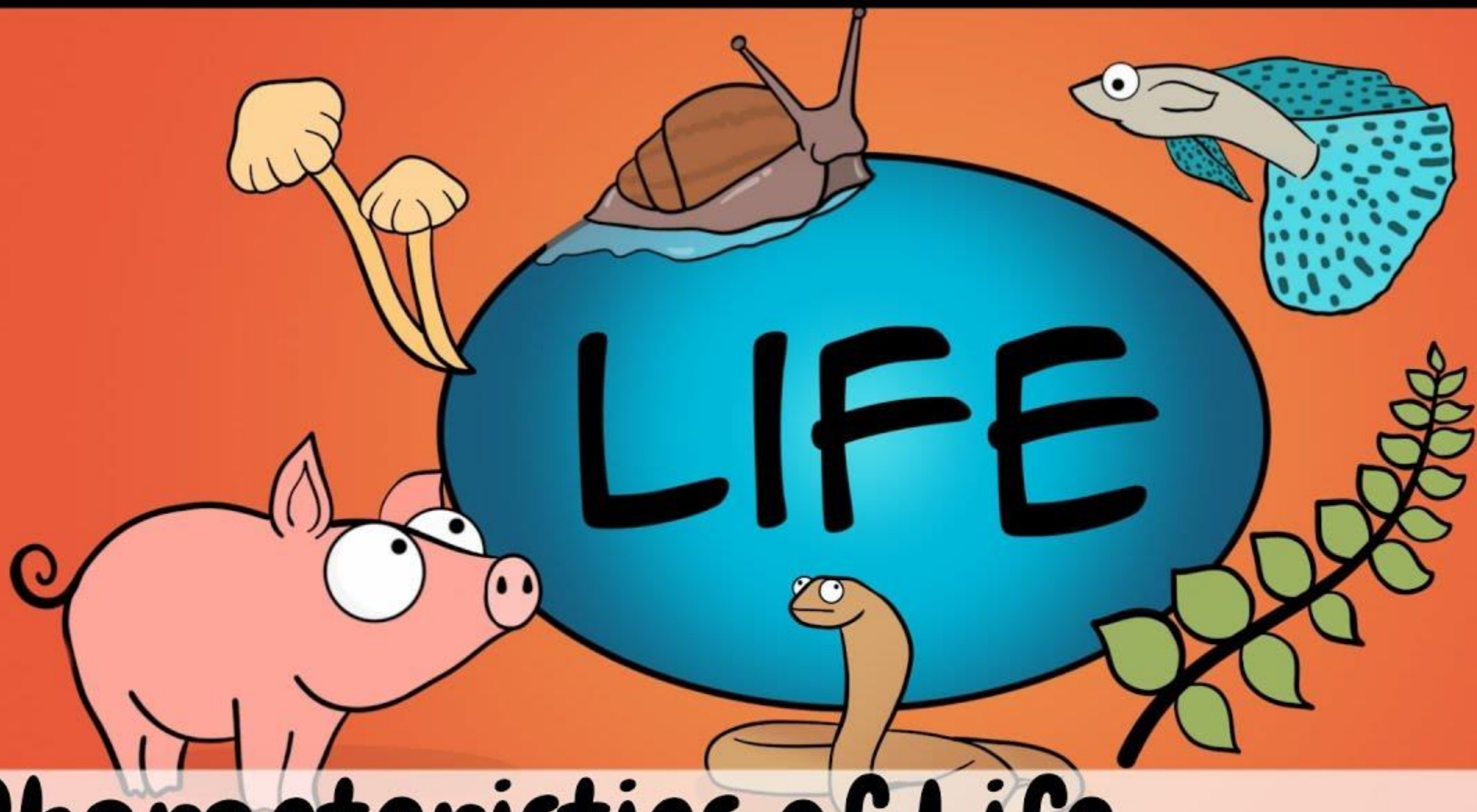
2. Unit 2:

Characteristics of Life

Lecture notes

3. Coloring: Growth and Development





Characteristics of Life

with the Amoeba Sisters

Unit 2: The Characteristics of Life

9/13/21

Before you take notes...

In this set of notes we will look briefly at 8 characteristics shared by all living things

We will look more closely at most of these characteristics throughout the semester



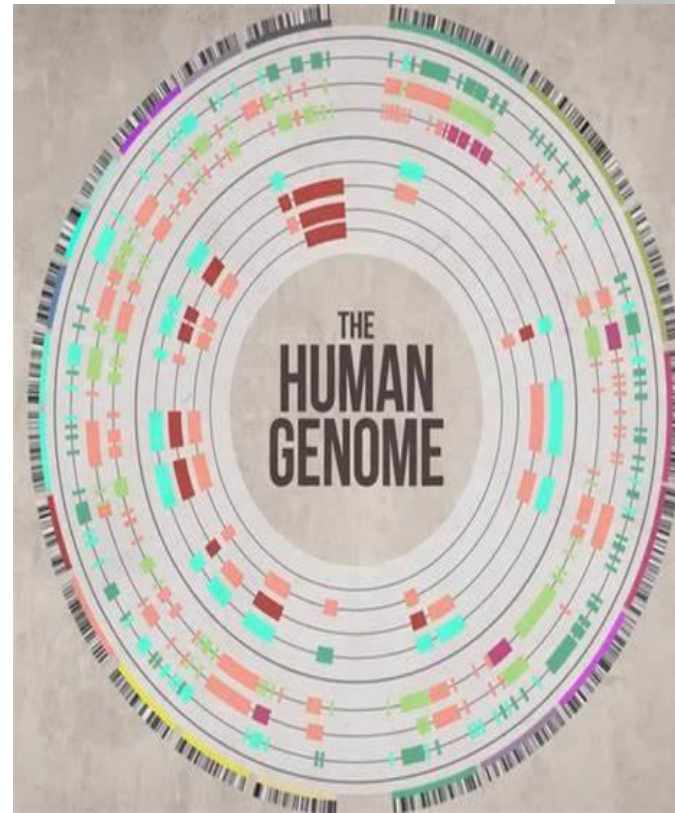
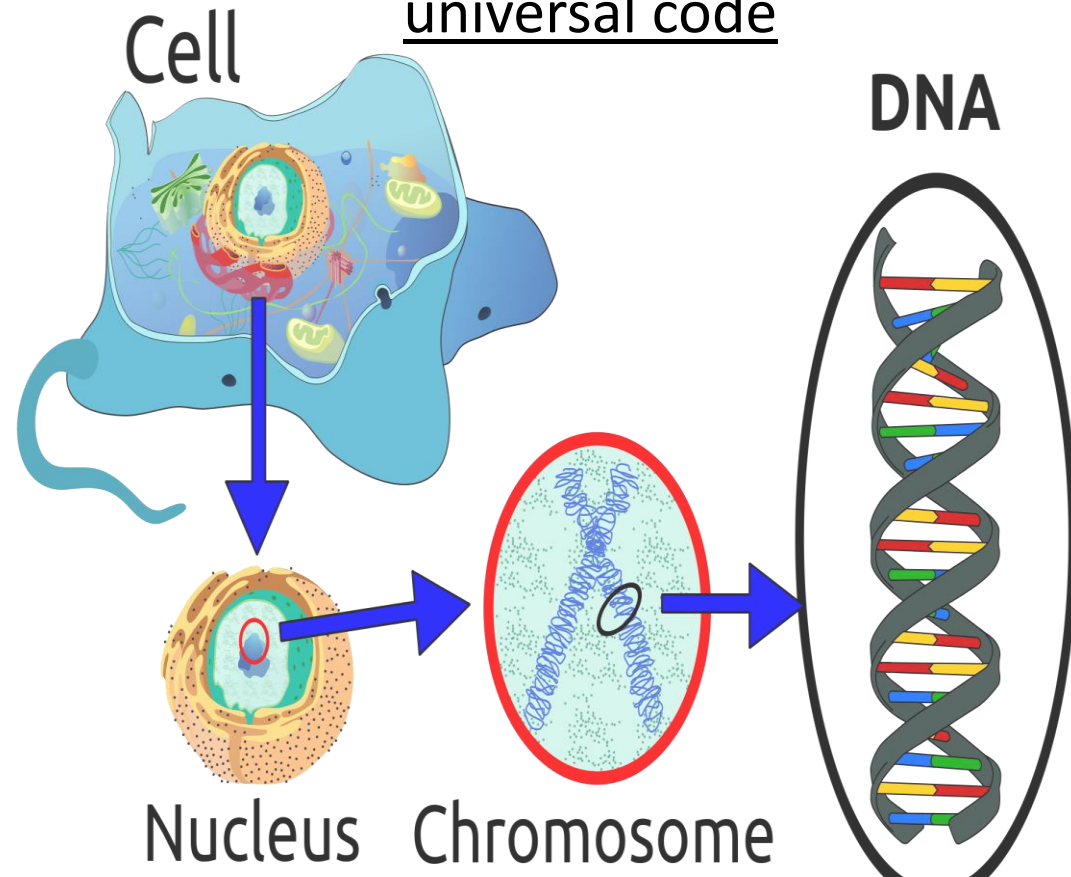
ALL LIVING THINGS...

2. Have cells that contain DNA, an inherited macromolecule that instructs the cell and organism how to grow, develop and more

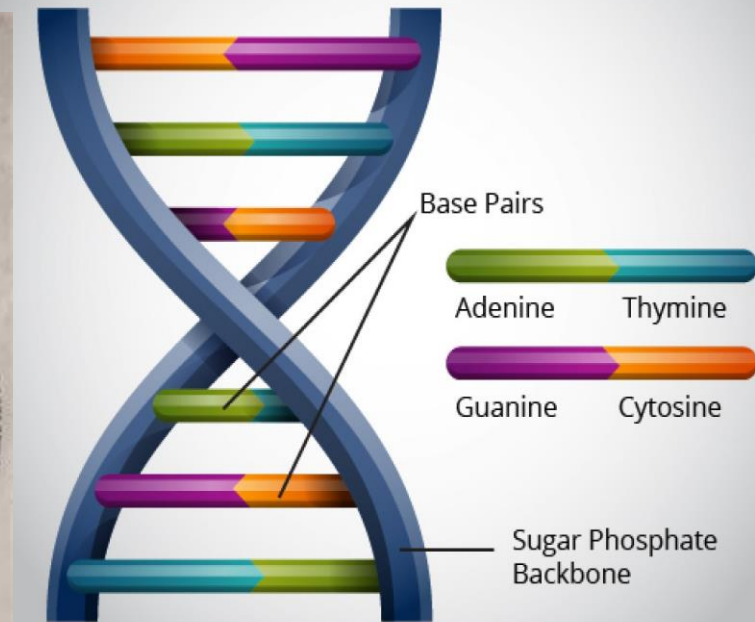
Genes are segments of DNA that have info to make the species

Every species has its own set of genes, or genome, that determine the characteristics of that species .

All organisms read the DNA code the same way, so it is called a universal code



DNA Structure



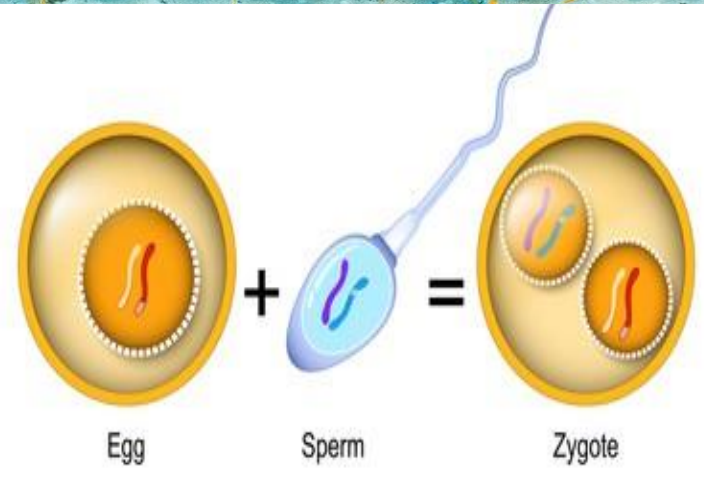
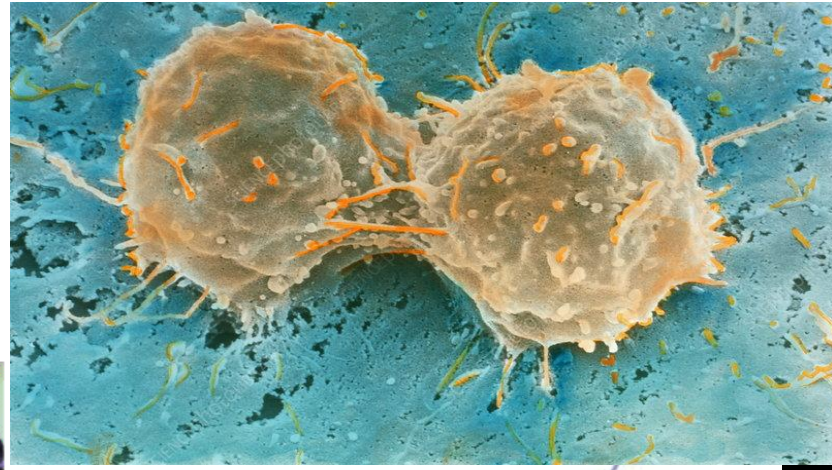
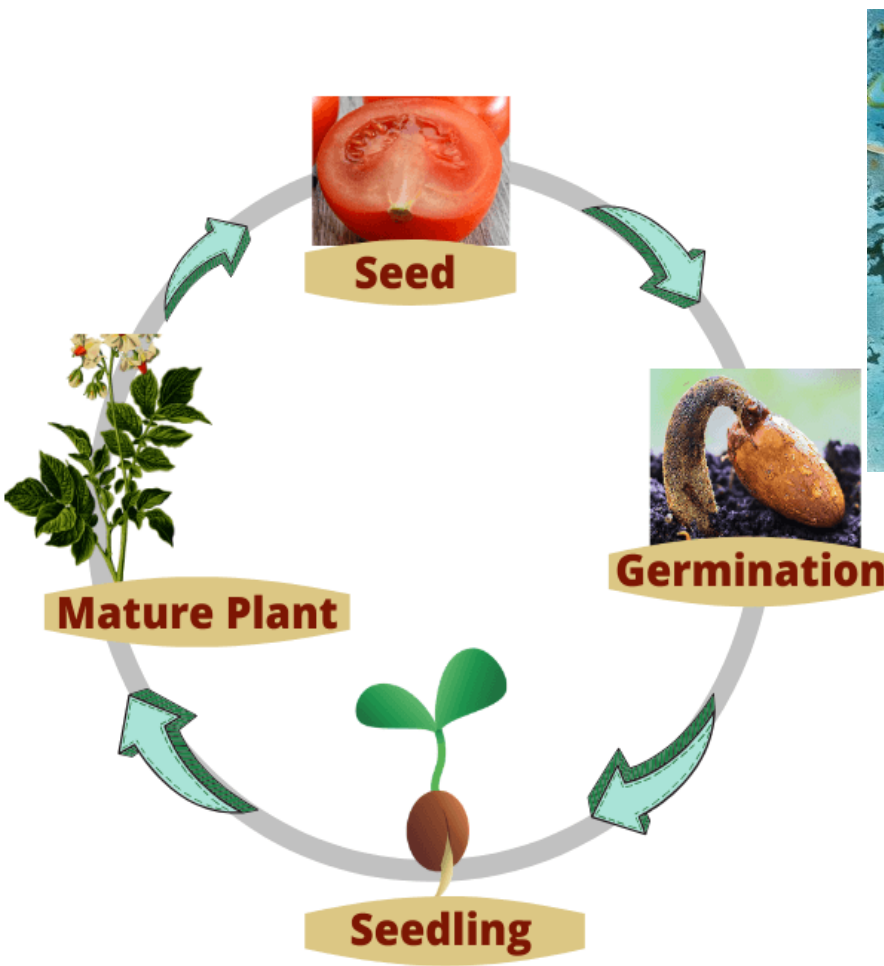
3. *Grow and develop*

Grow – get bigger

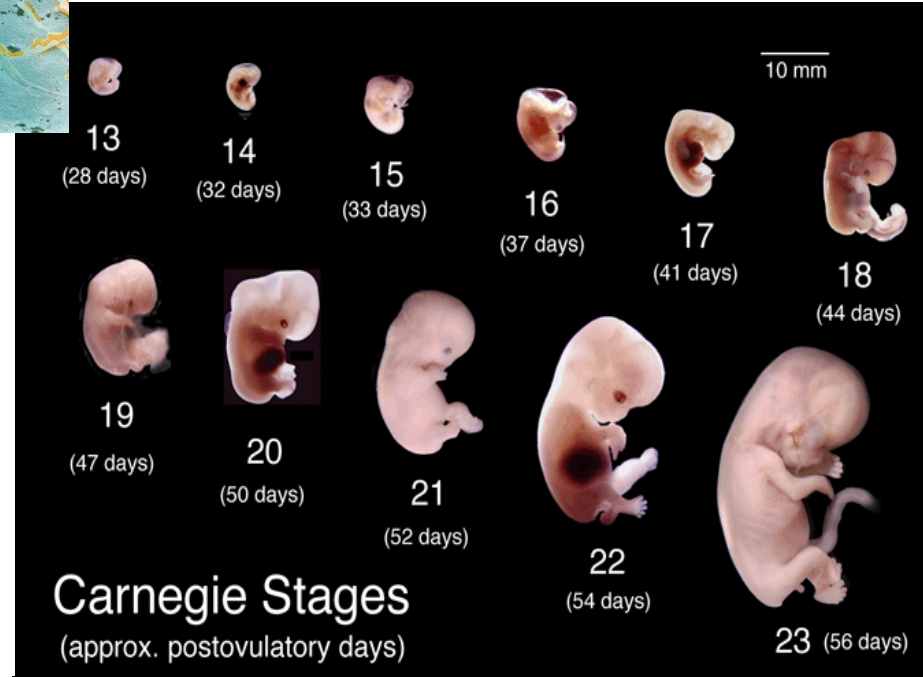
Develop – become more complex

Life cycle - the stages an organism goes through as it grows, develops and reproduces, and ages to death

For most organisms, from bacteria to humans, life begins as a single cell



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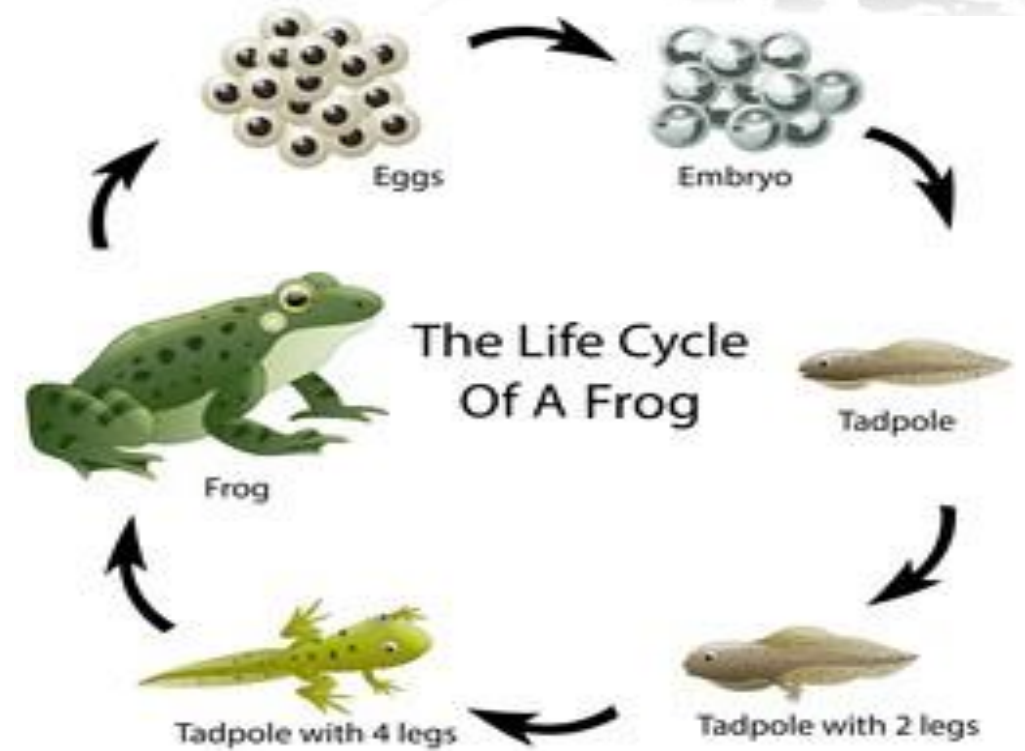


Some organisms just seem to enlarge (like humans)

Some organisms change a good deal

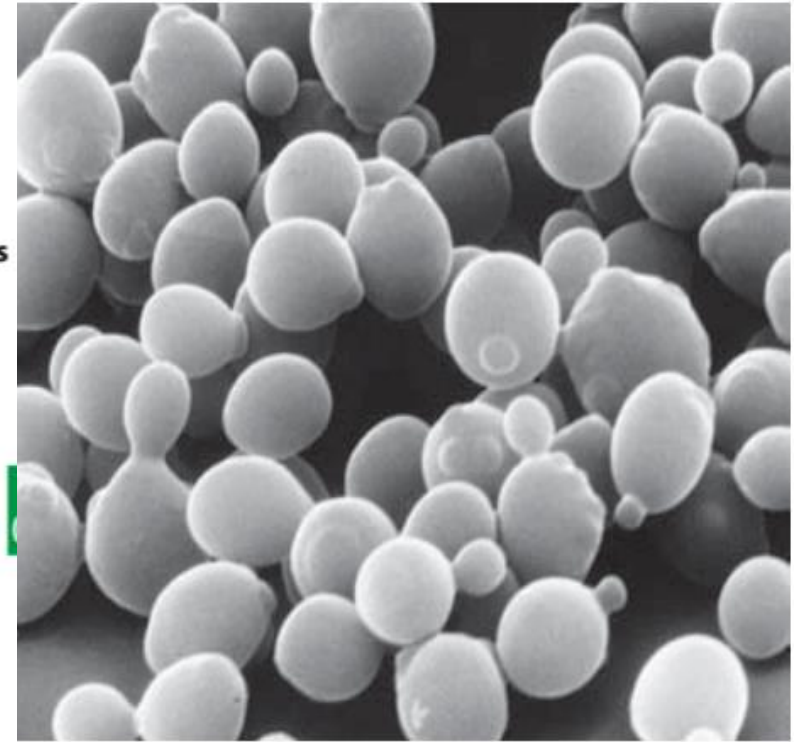
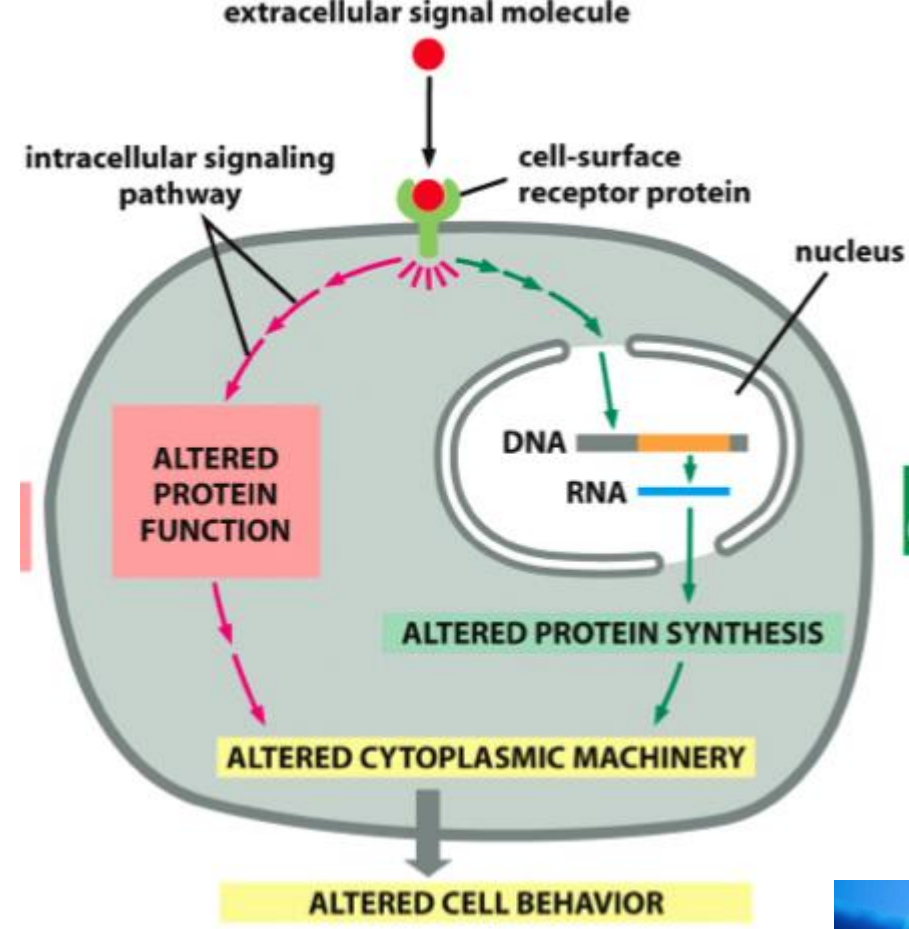
Metamorphosis

Many animals undergo radical changes in body plan in order to become reproductively fertile

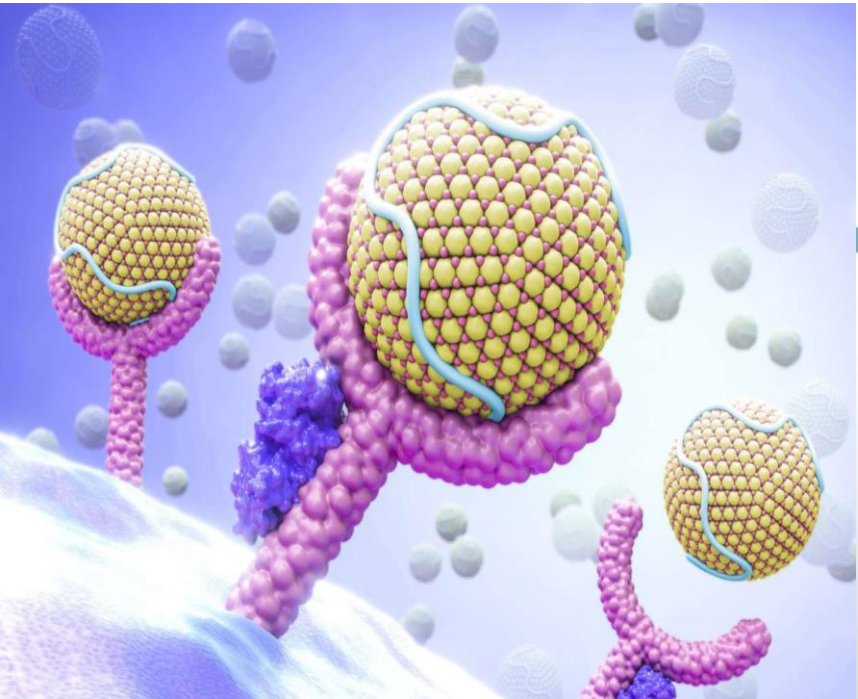


4. Respond to signals from their environment

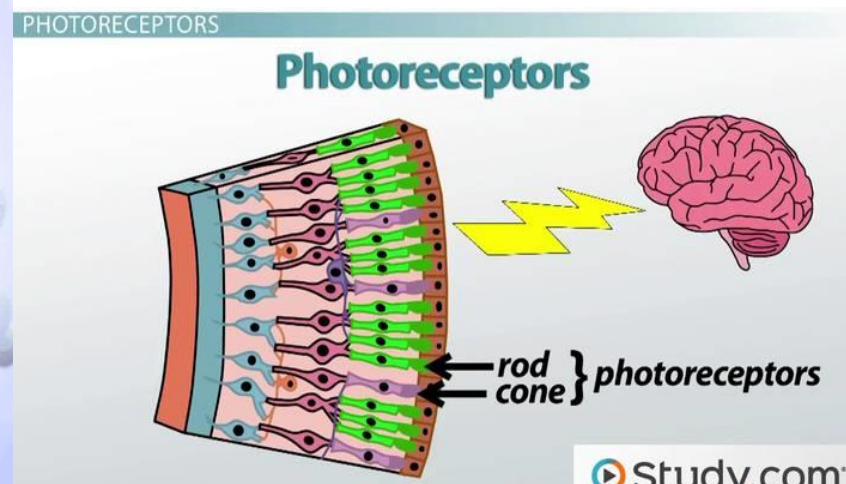
Cells have surface receptors that sense chemicals and other signals from other cells and from their environment. (stimuli)



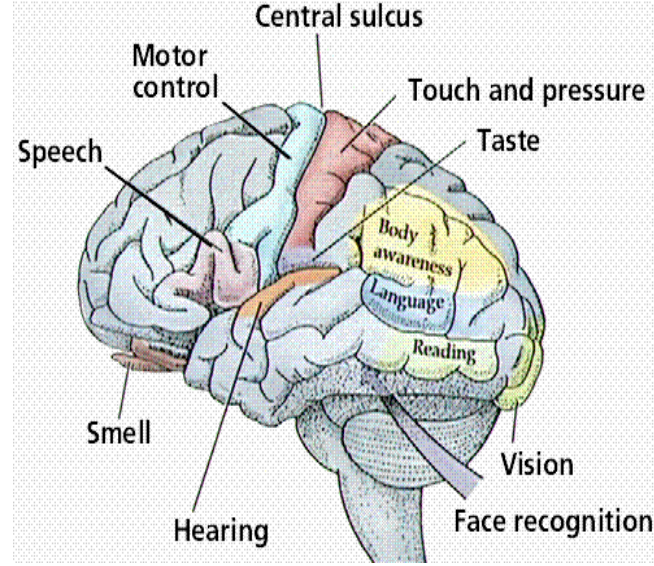
Yeast 10 μm



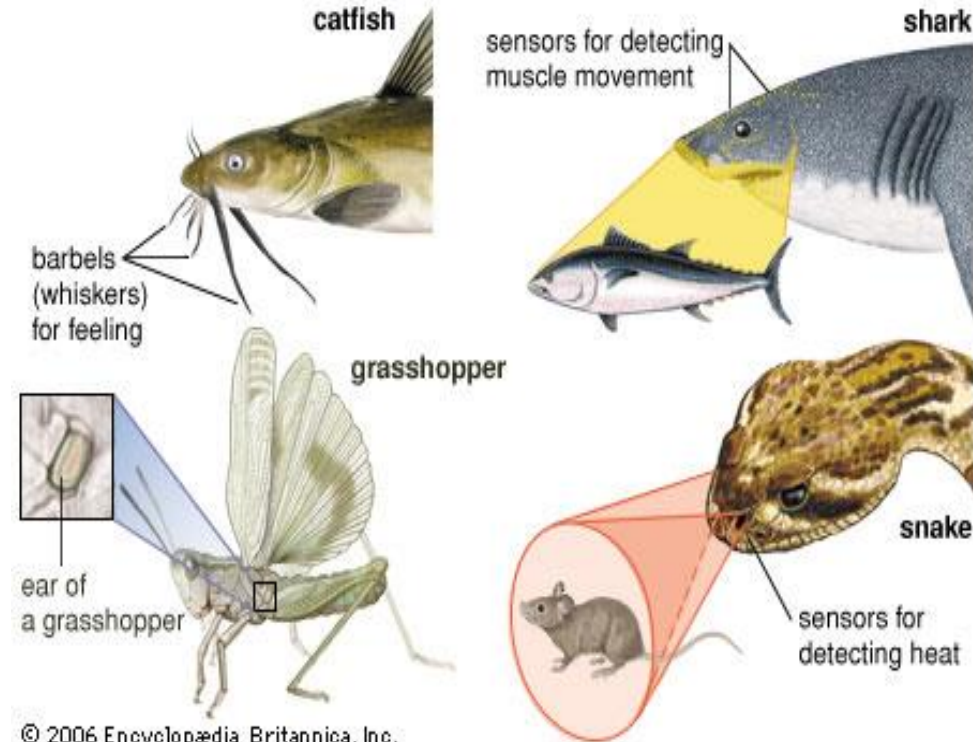
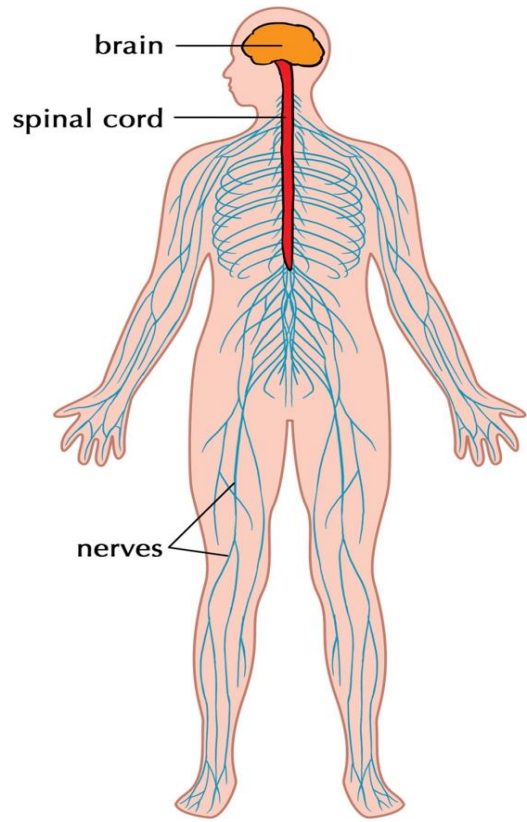
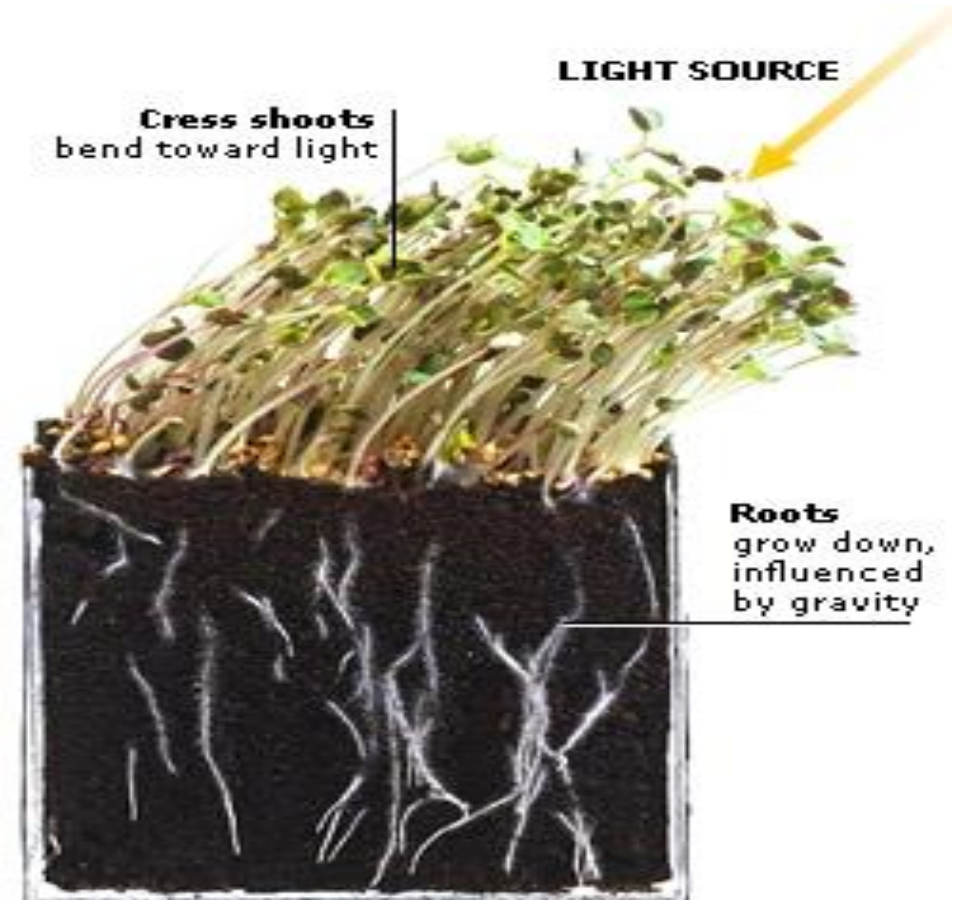
Bacteria



All organisms, even plants and fungi, can respond to changes in light, temperature and other signals from their environment. Cells detect stimuli and initiate response. (No nervous system)



Most animals have complex nervous system with sensory organs (eyes, antennae, ears, etc.) that have cells that sense stimuli and initiate response, which often involves the muscular system.



- **Ontogeny** (also ontogenesis) is the origination and development of an organism usually from the time of fertilization of the egg to adult.
- Phylogenetics is **the study of evolutionary relationships among biological entities** – often species, individuals or genes (which may be referred to as taxa).