Biol 0871 Basic Vocabulary

Biology: Is the study of life.

What makes something ALIVE?

1.) Made up of cells.
2.) Require nutrients, need to be able to get rid of wastes.
3.) Reproduce
4.) Respond to their environment.
5.) Have a universal genetic code: DNA
6.) Grow / evolve.
7.) Maintain a stable internal environment. (Homeostasis)

2 general category of cells

Prokaryotic cells

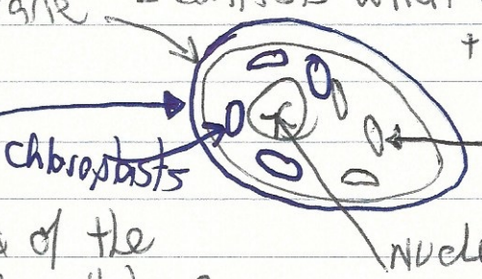
- very simple.
- Are Bacteria. (B)
- No nucleus
- No membrane bound organelles.

Eukaryotic cells.

- all cells that aren't B cells are eukaryotic cells
- membrane bound organelles
- have a nucleus.
- PLANT cell / Animal cell

PLANT cell

- cell membrane - controls what enters + exits a cell
- cell wall
  - composed of the carbohydrate cellulose.
  - Most animals can not digest cellulose.



Animal cell.

- NO cell wall

PLANT CELL

Nucleus.
(DNA)

Mitochondria
- produces energy for the cell. → ATP.
glucose get converted to ATP.
(Cellular Respiration)

$C_6H_{12}O_6 + O_2 \rightarrow CO_2 + H_2O +$ ATP

Chloroplasts
- site of photosynthesis.
⇓
the means by which a plant makes its own food (sugars.)

autotroph is an organism that makes its own food.
EX PLANTS + some B

$CO_2 + H_2O \xrightarrow{\text{Energy}} C_6H_{12}O_6 + O_2$

Cellular respiration and photosynthesis are opposite reactions. to each other.

The sugars a plant produces is used by Mitochondria to produce ATP.

A plant cell undergoes both photosynthesis + cellular respiration.

ANIMAL cell.

Nucleus
(DNA)

Mitochondria

Adenosine Triphosphate.

No chloroplasts.

Heterotroph is an organism that has to obtain its food
EX Animals.

Animals have to obtain sugars. (protein, fat).

Biol Vocabulary Continued

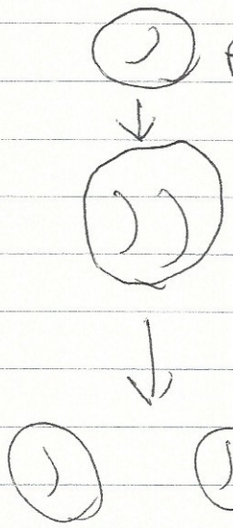
Autotroph
Heterotroph
Saprobe - organism that obtains food from decaying organic matter.
-Ex fungi, some B

⇓
dead organisms

Parasitism - A symbiotic relationship in which one organism lives in or on another organism (the host) and consequently harms it.

Cellular Reproduction

Mitosis
-asexual reproduction
-daughter cells are identical genetically to the parent cell.



- only genetic variation will come through mutation.

Ex Cell replacement, wound repair, growth.

Meiosis
-sexual reproduction
-daughters cell are genetically different from the parent cell.
-meiosis only occurs in structures called gonads.

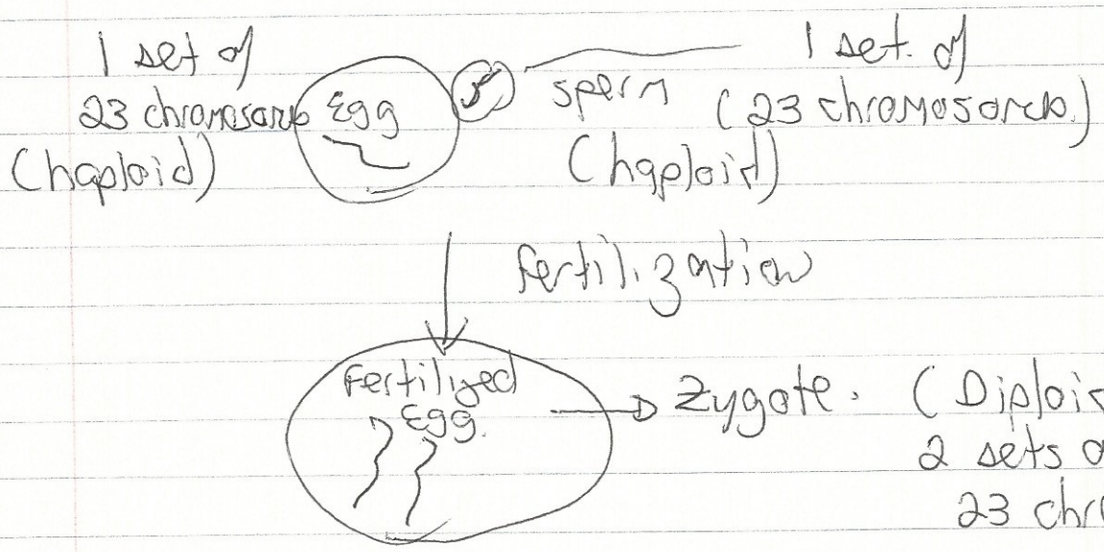
⇓
animals / PLANTS

OVARIES (female) -eggs (gametes)
TESTES (male) -sperm

⇓
Archegonium (female) -eggs
Antheridium (male) -sperm

- meiosis produces gametes
Gametes have only 1 set of

of chromosomes, as the parent cell has 2 sets.



Meiosis
→ start off with a diploid (2N) parent cell, end up with haploid (1N) gametes.

N = chromosomes

When studying PLANTS the terms egg, sperm are used but in addition the term spore is used.

spore → haploid reproductive cell.

usually present in asexual reproduction.

Diffusion/osmosis → transport of water, nutrients + other molecules.

Molecules naturally move from where they are in high amounts (concentration) to where they are in lower amts (less concentrated) until the molecules are evenly distributed throughout the area in which the molecules can move. (Diffusion)
The diffusion of water is called osmosis.