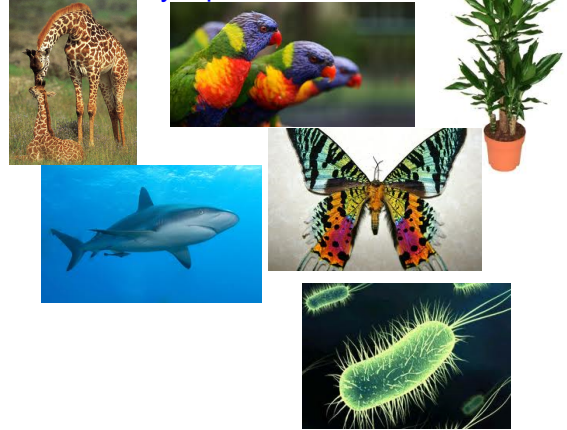


Cellular Reproduction

How do they reproduce.....



REGENERATION

The ability of an organism to replace damaged cells or body parts that have become damaged or amputated.

Eg:

- Starfish can replace lost or damaged arms.
- Humans can replace some cells that have been damaged (except nerve cells).
- Some salamanders can replace tails.
- Deer replace their antlers every spring.

<https://www.youtube.com/watch?v=QFa6jP6WgzM>

<https://www.youtube.com/watch?v=Eo50ctoOTWs>



Starfish



Hydra

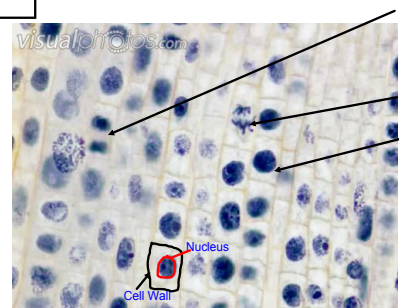


Family Cervidae

MITOSIS:

Sample of Onion Cells - stained

Chromosomes are bundles of DNA



Separation Ended

Chromosomes

Separation Beginning

Completed Cell

Nucleus

Cell Wall

400x

BJ2777 [RM] © www.visualphotos.com

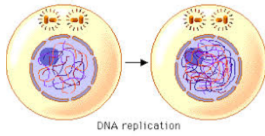
MITOSIS - Cellular Reproduction

Mitosis - when a cell grows, duplicates its DNA and divides into two identical "daughter" cells.

<https://www.youtube.com/watch?v=f-ldPgEfAHI>

There are phases or steps in mitosis:

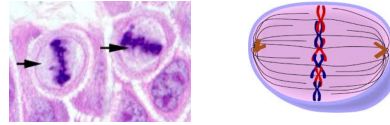
Interphase: where the cell grows and makes copies of its DNA (46 to 92 chromosomes). 90% of the cell's cycle is spent in this phase.



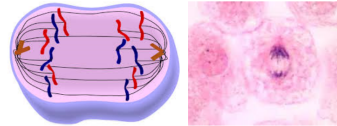
Prophase: chromosomes are condensing (organizing). Copies stick together.



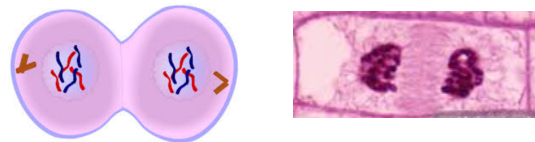
Metaphase: the nucleus dissolves and chromosomes line up in the middle of the cell.



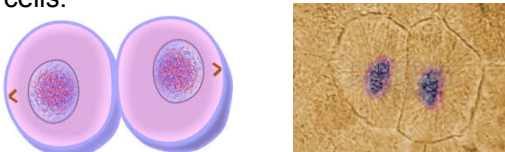
Anaphase: chromosomes are pulled away from each other to opposite ends of what will become the new cells.



Telophase: two new nuclei form around the separated bundle of chromosomes.



Cytokinesis: where the cytoplasm grows together and pinches off forming two daughter cells.

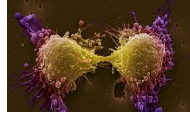


CANCER:

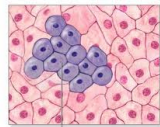
Cancer is when **mitosis goes out of control**. Cells grow and divide too fast that they do not form daughter cells properly.

1. Cancer is one of the leading causes of death in Canada.

2. Cancer cells are cells that have had their DNA altered (mutation, disruption, wrong transcription, etc).



3. Cancerous cells will grow rapidly out of control; they undergo extremely fast mitosis.



Proliferation of cancer cells #ADAM

4. Carcinogens:

- Chemical factors (cigarettes, pesticides, pollution)
- Radiation
- Hereditary factors (genetic)
- Certain viruses
- Lesions/injuries

<https://www.youtube.com/watch?v=lpAa4TWjHQ4>