October 15, 2018

LT: I can identify the phases in mitosis.

I can review how particles move through a cell membrane.

Warm-Up

How do cuts, bruises, and scrapes heal?

October 16, 2018

LT: I can identify the phases in mitosis.

Warm-Up

What are the phases of mitosis?

Cell Division

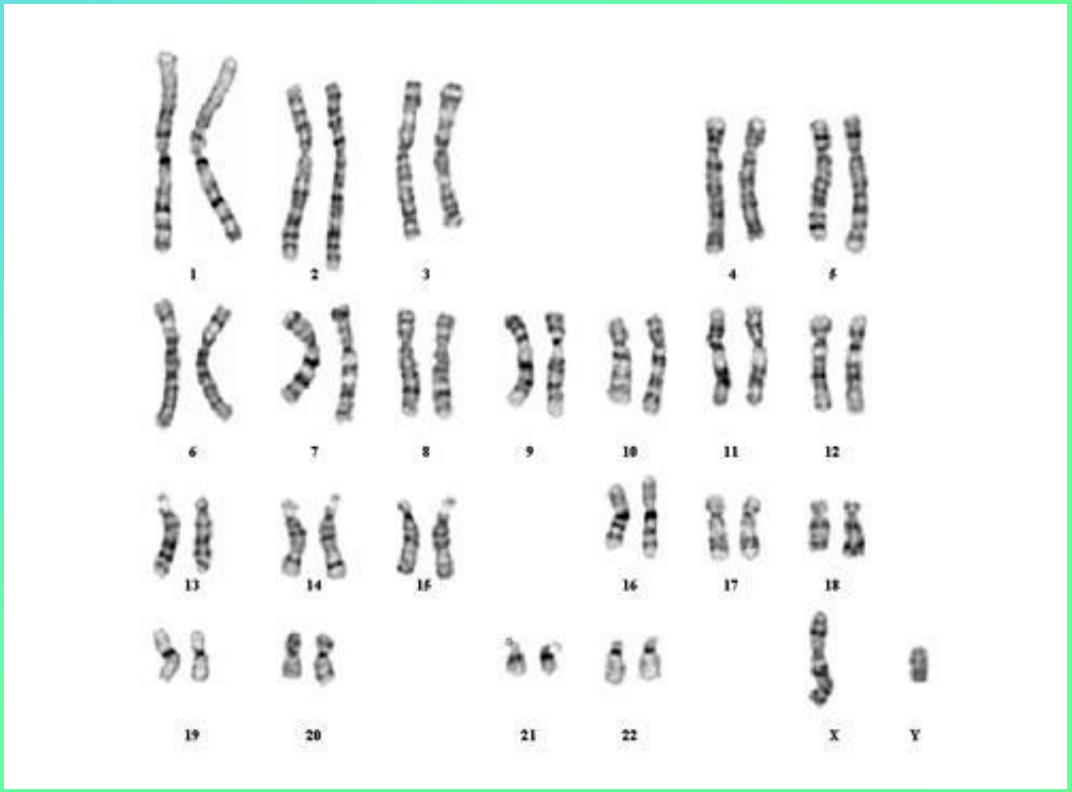
The Cell Cycle and Mitosis

Why do cells divide?

- Growth
- Reproduction
- Repair

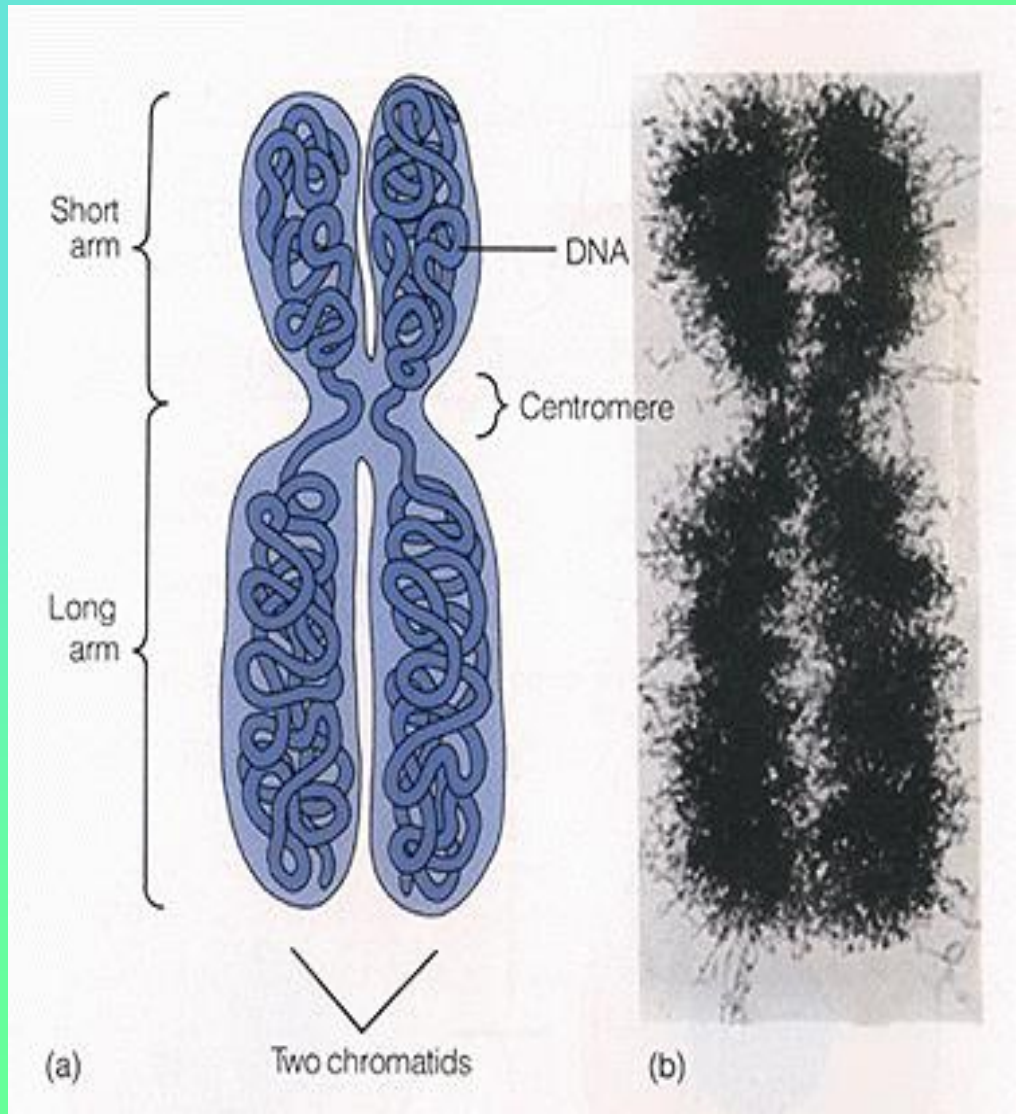
Karyotype

- The number and visual appearance of the chromosomes.



Chromosomes

- Carry genetic information from one generation of cells to the next
- Made up of two sister chromatids
- Sister chromatids meet at the centromere
- Not visible in cells except in cell division

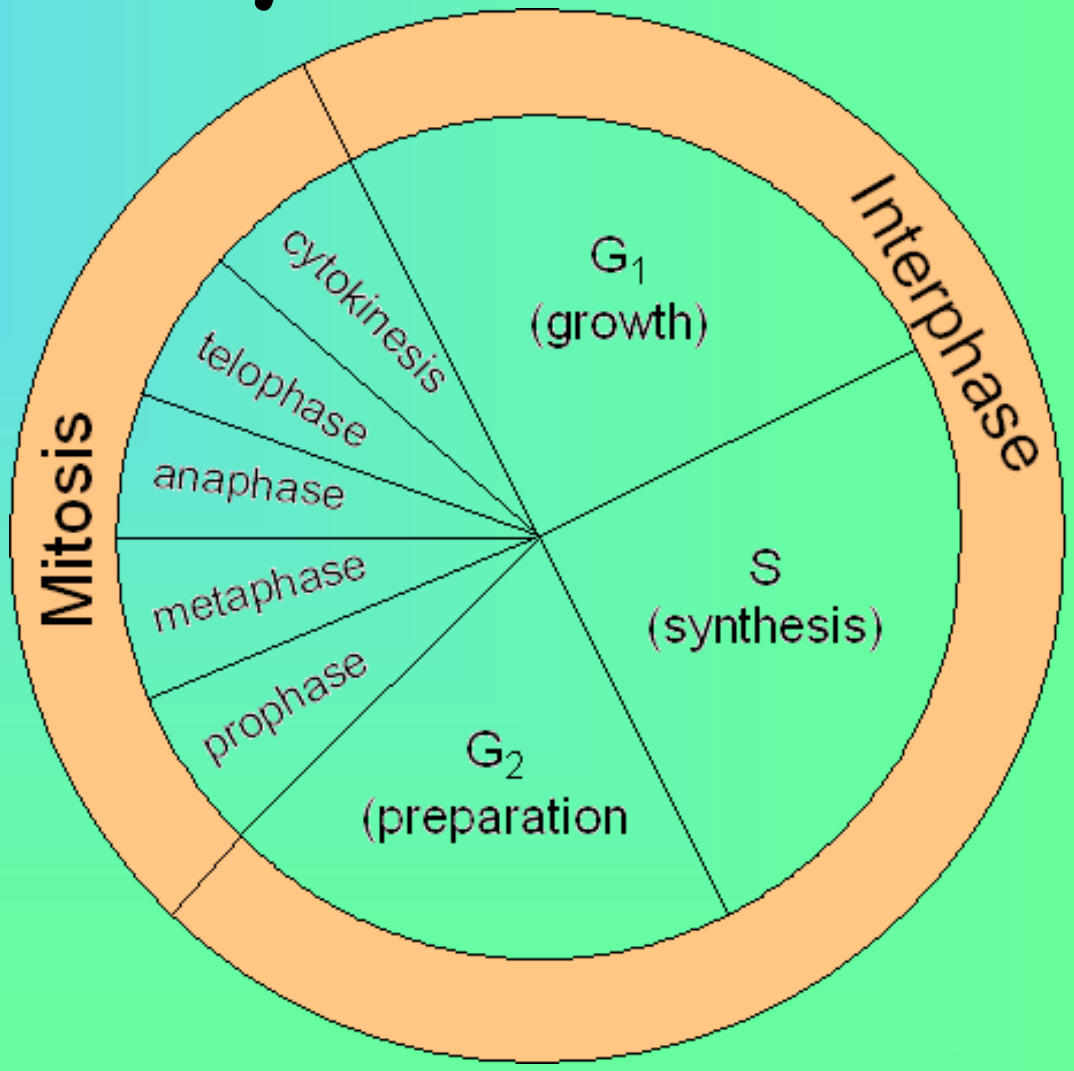


Cell Division

- Process by which a cell divides into two daughter cells
- Before division, cell replicates all its DNA
- Each daughter cell will get one complete set of genetic information

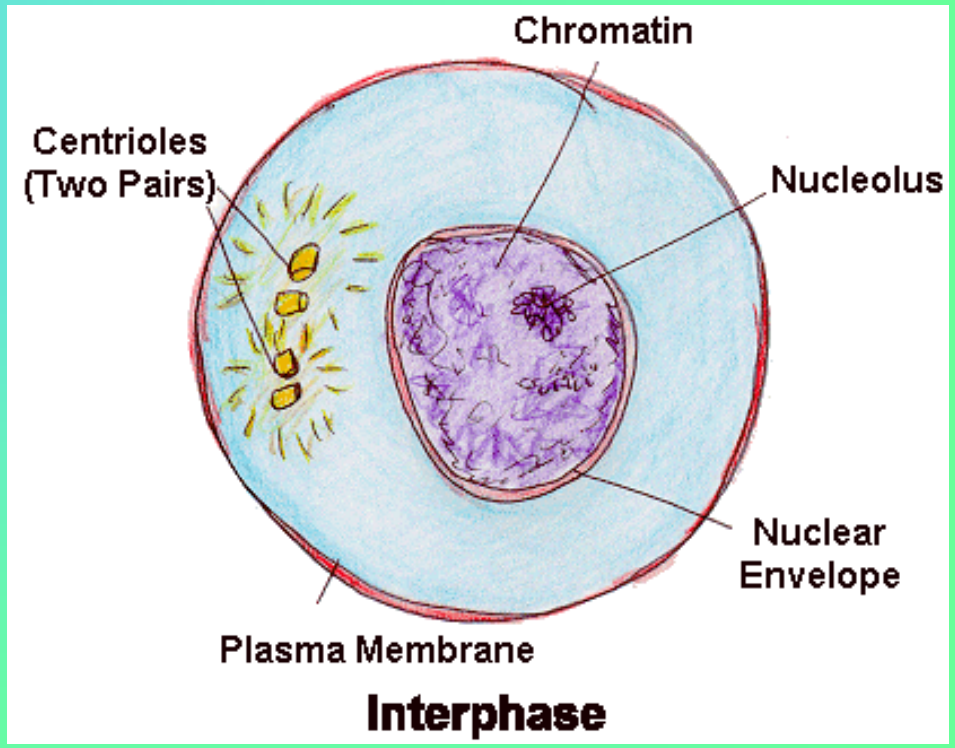
Cell Cycle

Cell Cycle: set of events making up the life of a cell; composed of interphase, mitosis and cytokinesis



Interphase

- The time between cell divisions where the cell spends most of its life
- Cell is in a resting phase, performing normal cell functions
- Composed of G_1, S and G_2 phases



Interphase: G1, S, G2

- G1 (Growth 1)- offspring cells grow to mature size
- S (Synthesis)- DNA copies
- G2 (Growth 2)- cell prepares for division

Mitosis

- DIVISION OF THE NUCLEUS
- Only happens in BODY cells, NOT sperm and egg cells (sex cells)
- 4 phases:

  1.prophase

  2.metaphase

  3. anaphase

  4.telophase

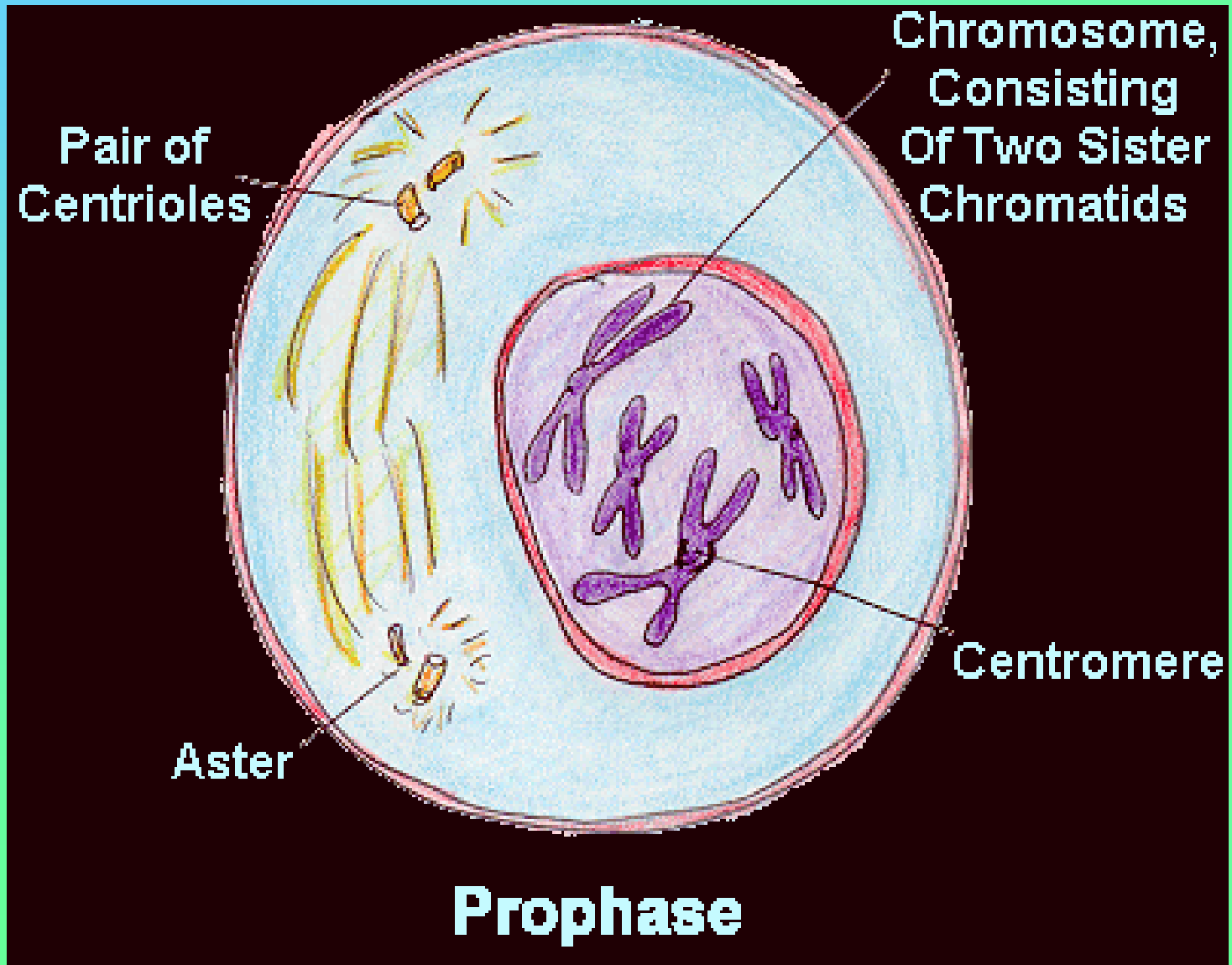
Prophase

- Chromosomes become visible
- Centrioles separate and move to opposite sides of cell
- Spindle fibers form

Prophase

- Nucleolus disappears
- Nuclear envelope breaks down and disappears
- Longest phase

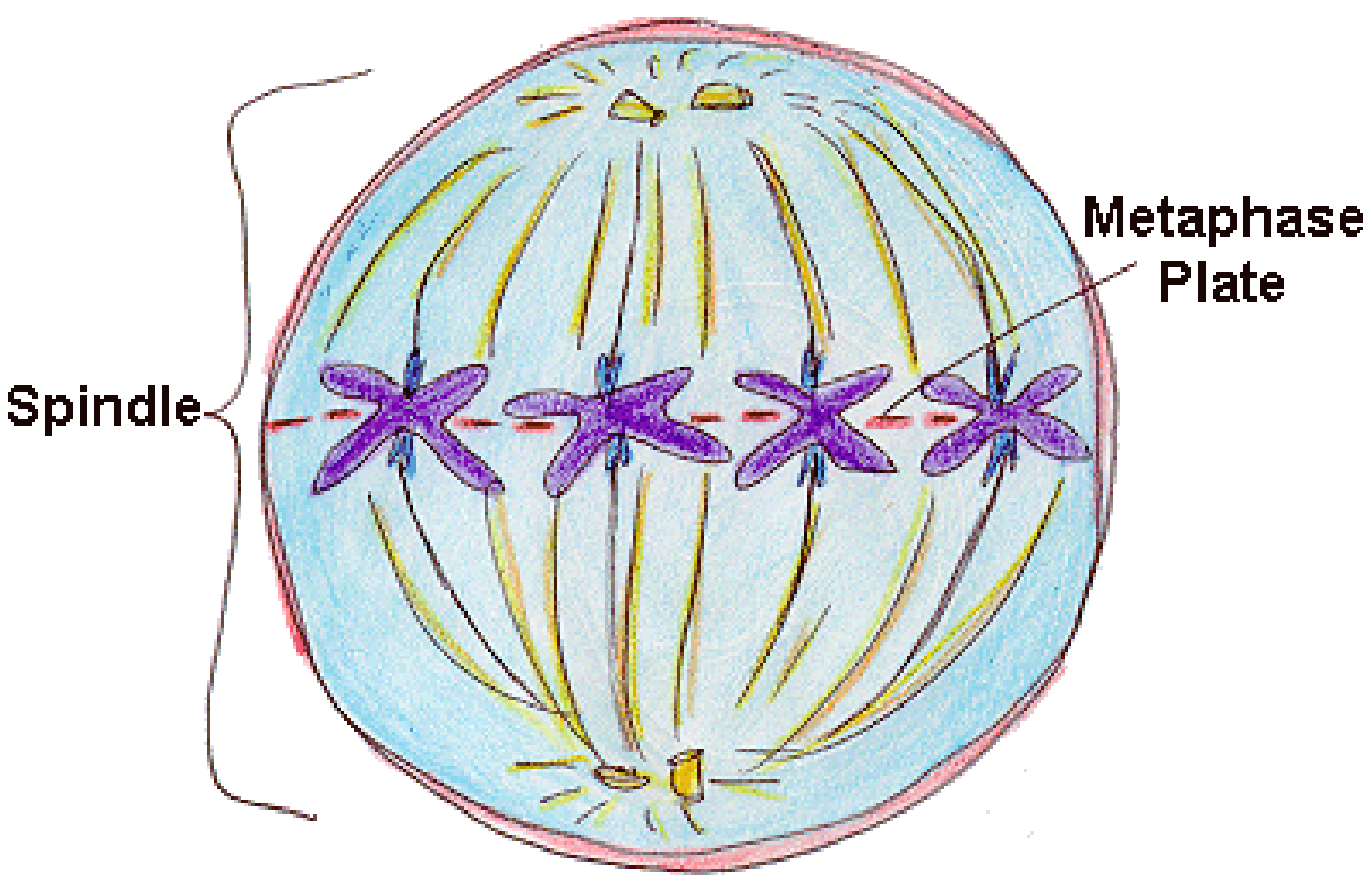
Prophase


Chromosome, Consisting Of Two Sister Chromatids
Pair of Centrioles
Centromere
Aster
Prophase

Metaphase

- Chromosomes line up along the equator
- Chromosomes connected to spindle fibers at centromere
- Shortest phase

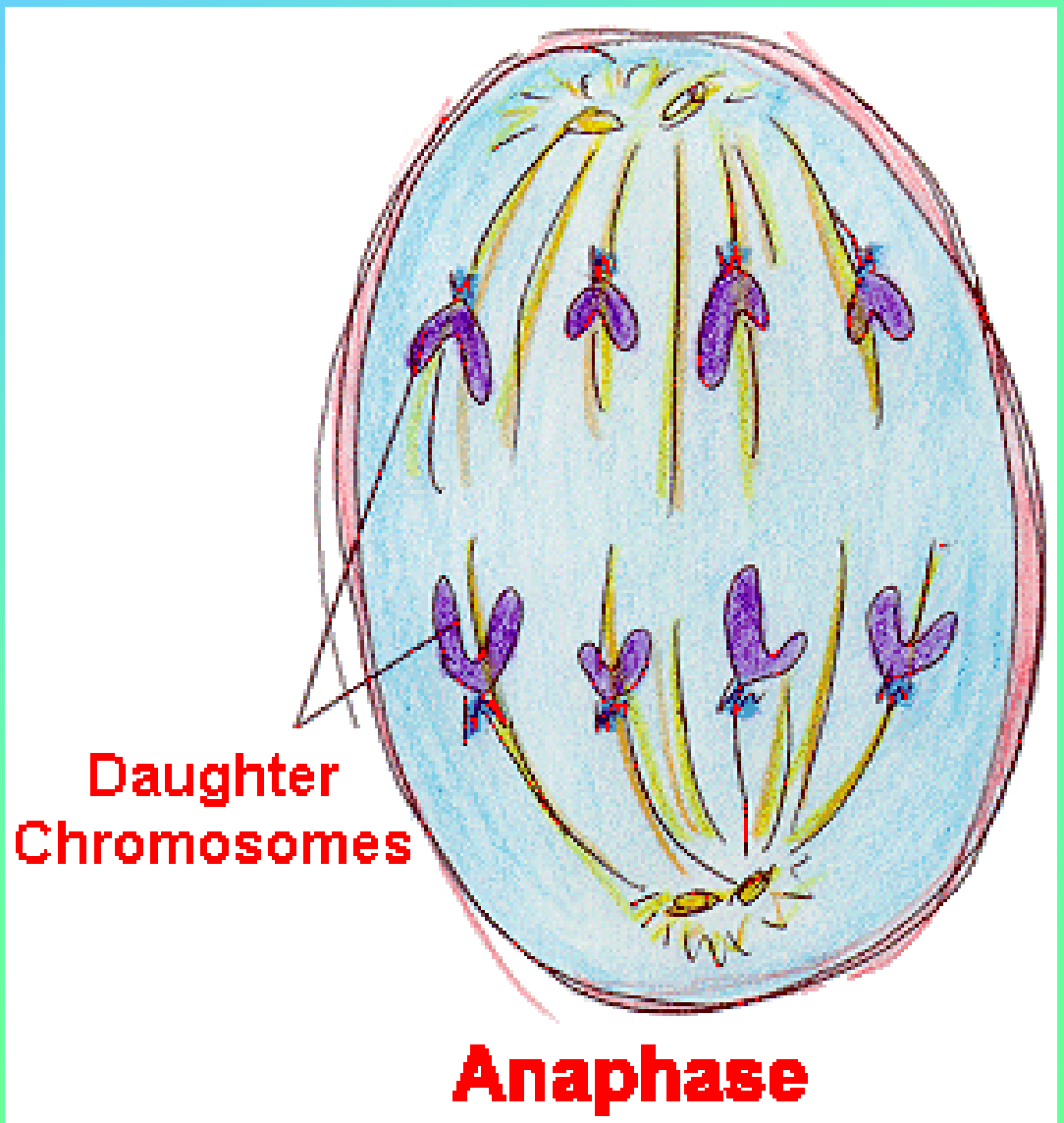
Metaphase



Anaphase

- Centromeres divide
- Sister chromatids separate and move to opposite poles
- When chromatids separate, considered individual chromosomes (daughter chromosomes)

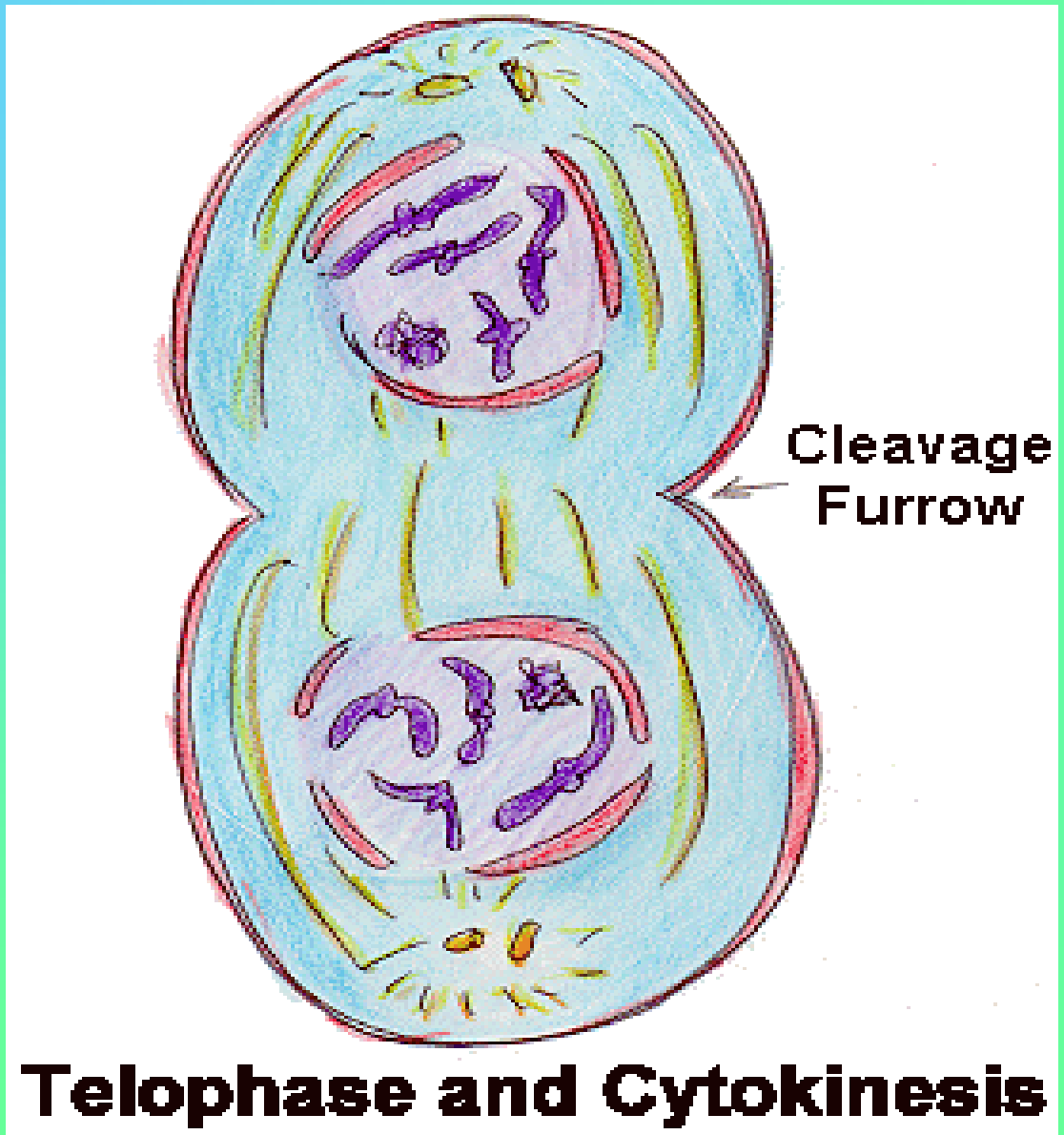
Anaphase



Telophase

- Nuclear membrane forms around each group of chromosomes
- Chromosomes unwind
- Spindle fibers disassemble
- Cytokinesis begins

Telophase



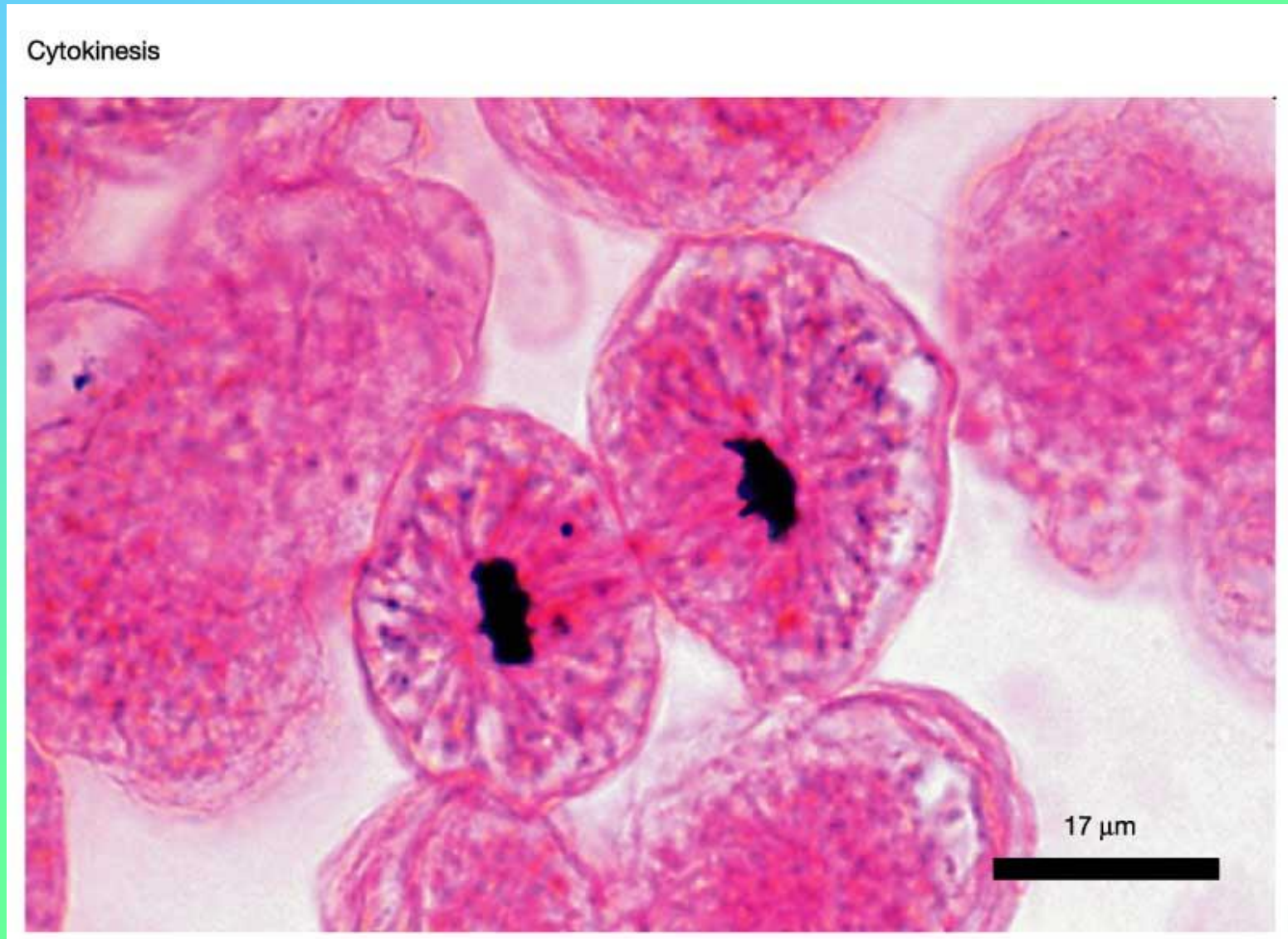
Telophase and Cytokinesis

Cytokinesis

- The process by which the cytoplasm divides and one cell becomes two individual cells

- Different in plants and animals
  - Animals- cell pinches inward
  - Plants- a new cell wall forms between the two new cells

Cytokinesis- Animal Cell

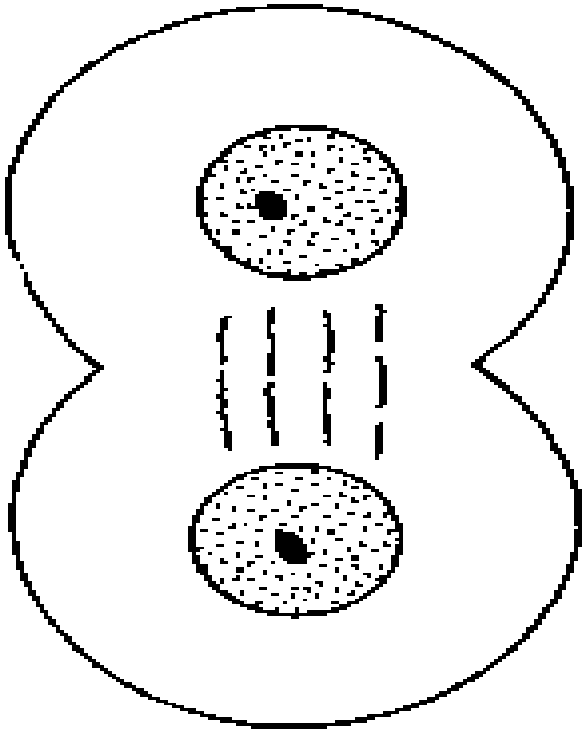


Cytokinesis- Plant Cell

Cytokinesis- Plant vs. Animal

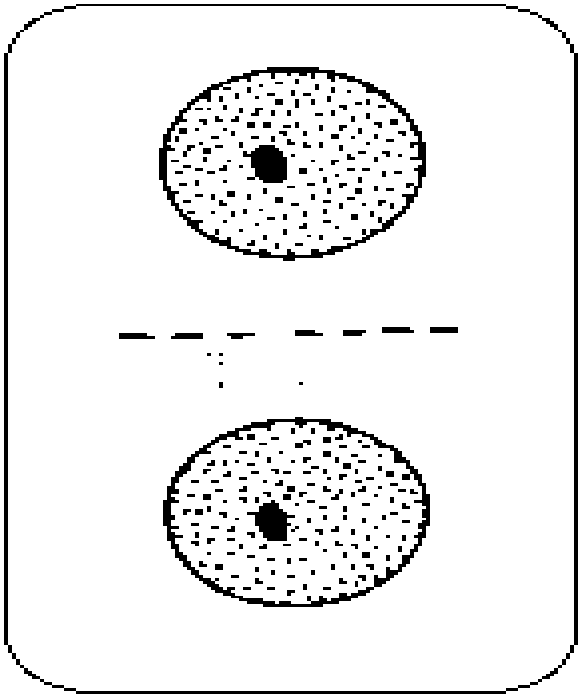
Cytokinesis

Animal Cell



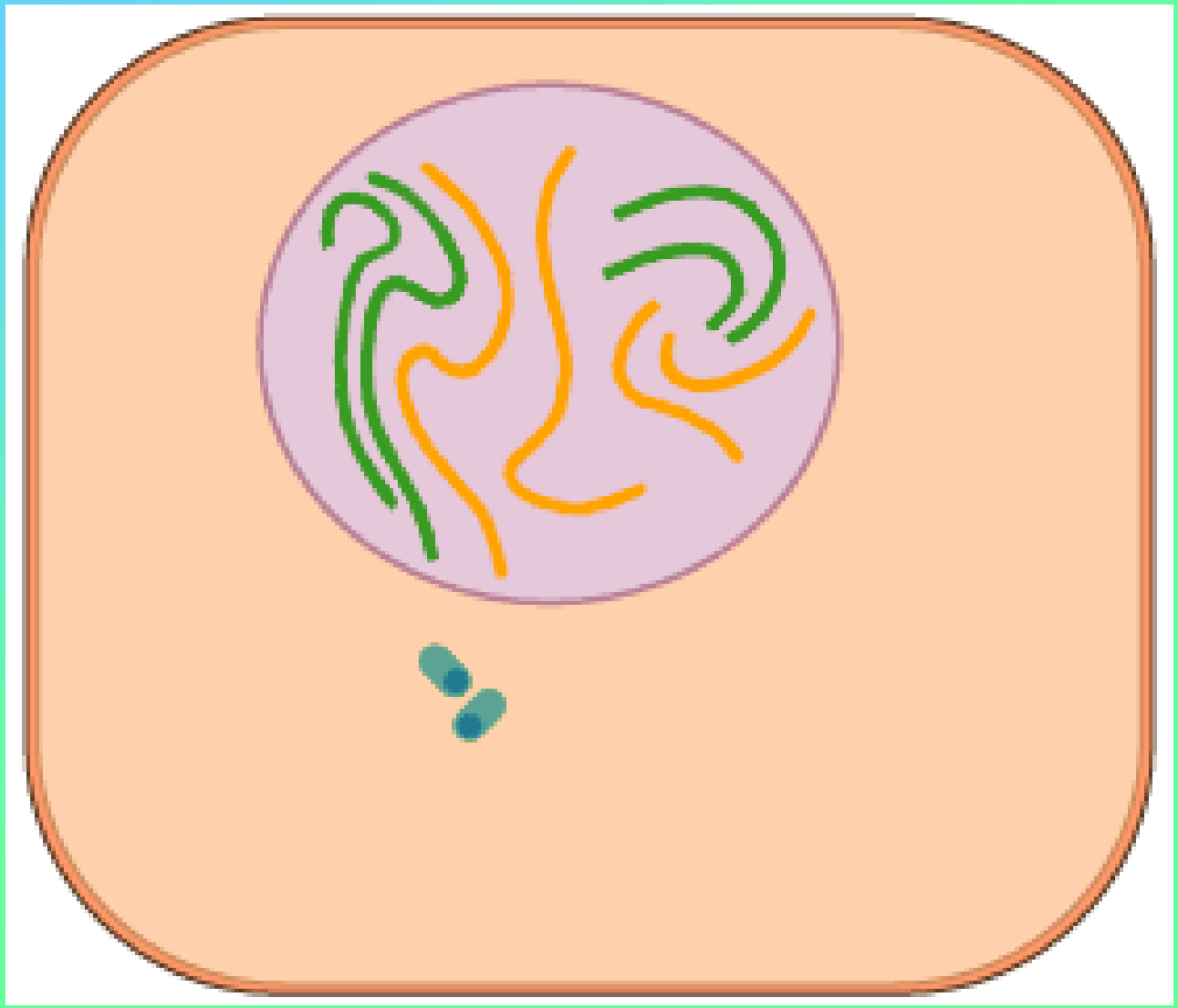
Cleavage formation by Furrow

Plant Cell



Cell place formation

Mitosis in Action



October 17, 2018

LT: I can organize the cell cycle chronologically, and support my ideas with evidence

Warm-Up

1. Draw and label the parts of the chromosome.
2. The stages of the cell cycle are
   a. Interphase, mitosis and cytokinesis
   b. Prophase, metaphase, anaphase and telophase
   c. Interphase and cytokinesis
   d. G_1, S and G_2

Persuasive essay DUE Friday at 5:30pm

Mitosis: Amoeba Sisters

- Cell Division and Mitosis

October 18, 2018

LT: I can organize the cell cycle chronologically, and support my ideas with evidence

Warm-Up

1. What is the function of a spindle fiber?
2. In what phase of mitosis do chromosomes line up along the equator?