


Bio 115 Cells & Evolution of Life

Cellular Growth and Division

The Eukaryotic Cell Cycle

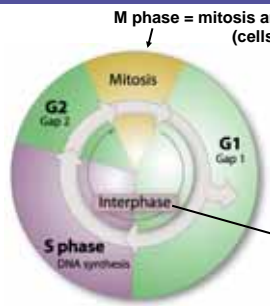


Start Audio Lecture!

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The Eukaryotic Cell Cycle



M phase = mitosis and cytokinesis
(cells divide during M phase)

Interphase
cells spend most of their time in interphase (G1, S phase, and G2)

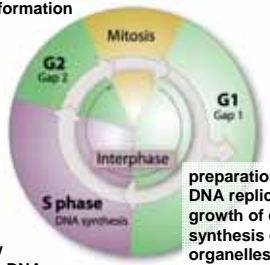
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Eukaryotic Cell Cycle: Interphase

preparations for cell division:

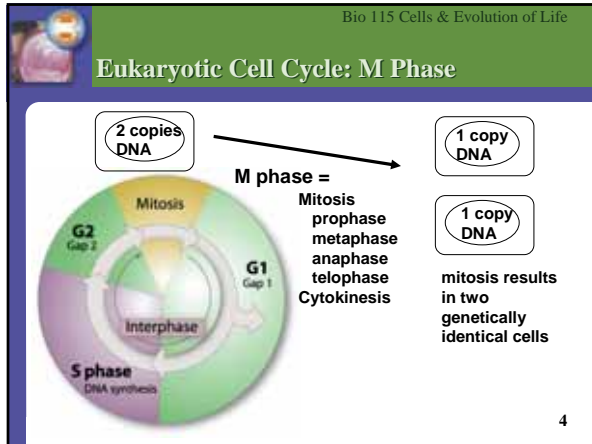
- initiation of chromosome formation
- synthesis of enzymes and structural components
- centrosomes/centrioles move to opposite ends of cell

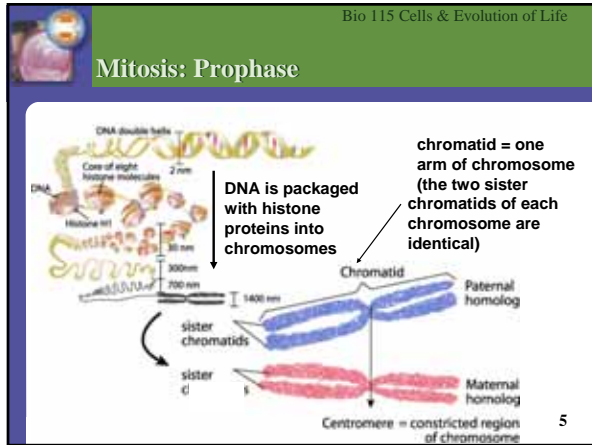


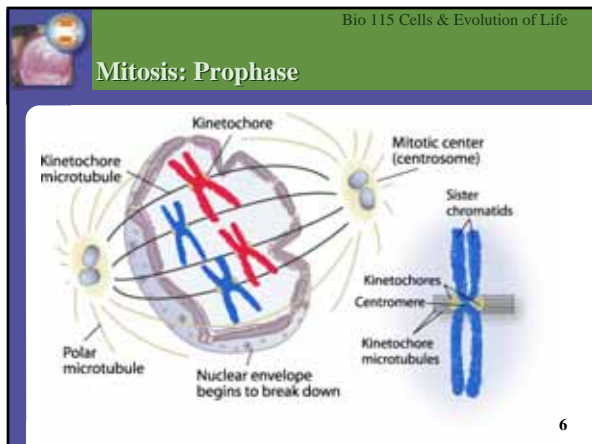
DNA replication – making an exact copy of the cell's DNA, so the cell now has two copies of its DNA

preparation for DNA replication, growth of cell, synthesis of organelles

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Mitosis: Metaphase, Anaphase, and Telophase

chromosomes line up along plane of cell division

Metaphase

Equatorial plate

chromatids are pulled apart, move to opposite poles of cell

Anaphase

Daughter chromosomes

chromatids reach poles, nuclear membranes start to reform, chromosomes start to decondense

Telophase

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Cytokinesis: Division of Cytoplasm

cleavage furrow

cell 1 cell 2

Animal cells go through cytokinesis by a pinching in of the cell membrane.

developing cell plate

cell 1
cell 2

Cells with cell walls (plants, fungi, etc.) go through cytokinesis by formation of a cell plate that will become the new cell walls and cell membranes between the two new cells.

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Full Circle in the Cell Cycle

Arrest cell cycle or continue on?

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