

Life Science: Cell Cycle Song Project - Outline of Key Concepts and Vocabulary

The Cell Cycle

- Regular sequence of growth and division of cells
 - Cell grows, prepares for division and separates into two identical, daughter cells
- **Stage 1: Interphase**
 - Occurs before cell division
 - Growth
 - Grows to full size
 - New ribosomes and enzymes
 - Copies of mitochondria and chloroplasts
 - Copy DNA
 - Replication of genetic code
 - Preparing for Division
 - Centrioles are copied
- **Stage 2: Mitosis**
 - Cell's nucleus divides into two new nuclei
 - One copy of DNA is distributed to each daughter cell
 - Four stage Process
 1. Prophase
 - a. Chromatin condenses to form chromosomes
 - b. Centrioles move to poles
 - c. Spindle fibers form bridge
 - d. Nuclear envelope breaks down
 2. Metaphase
 - a. Chromosomes line up
 - b. Chromosomes attach to spindle fibers at centromere
 3. Anaphase
 - a. Centromeres split
 - b. Chromatids separate and become new chromosomes
 - c. Chromosomes move to opposite ends of cell
 - d. Cell stretches
 4. Telophase
 - a. Chromosomes stretch out and lose rod-like appearance
 - b. New nuclear envelopes form
- **Stage 3: Cytokinesis**
 - Cytoplasm divides
 - Animal cells – squeeze in middle
 - Plant cells – cell plate
 - Organelles distributed to new cells
 - Shortest Phase – cell membrane pinches and cell splits into two daughter cells