

# Mitosis and the Cell Cycle



Cell reproduction



# Some Definitions

- Somatic Cells – body cells
  - Produced through mitosis
  - We 46 chromosomes (23 pairs)
- Diploid – total of chromosomes
- Haploid – half the number of chromosomes (sperm & egg)

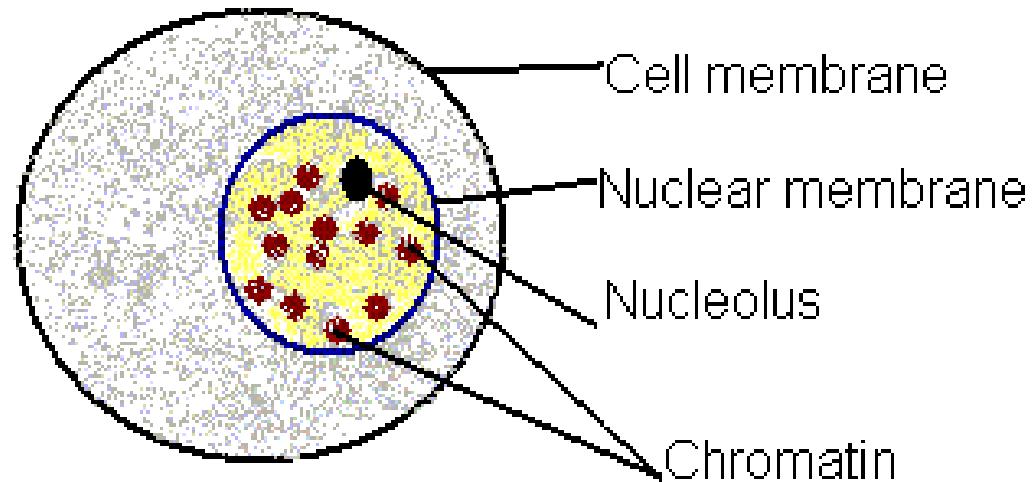


# The Cell Cycle

- The sequence of growth and division of a cell.
- 95% of cell cycle in interphase
- 5% of cell cycle in mitosis

# Interphase

- Growth of the cell
- Replication of DNA
- Preparation for division



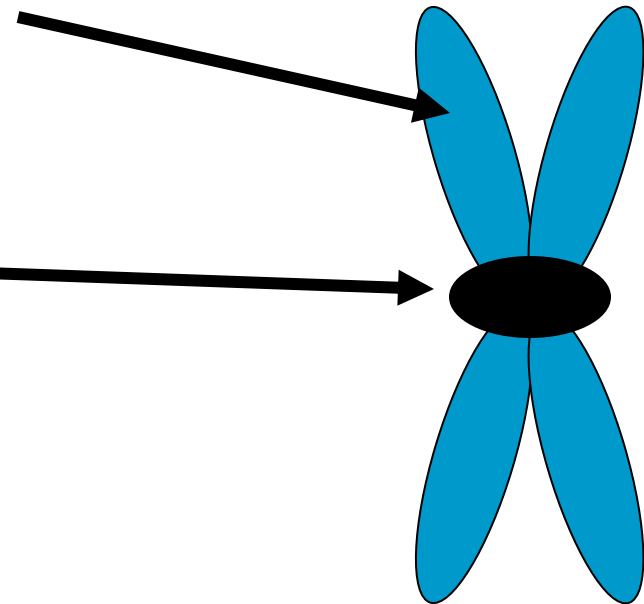


# Mitosis

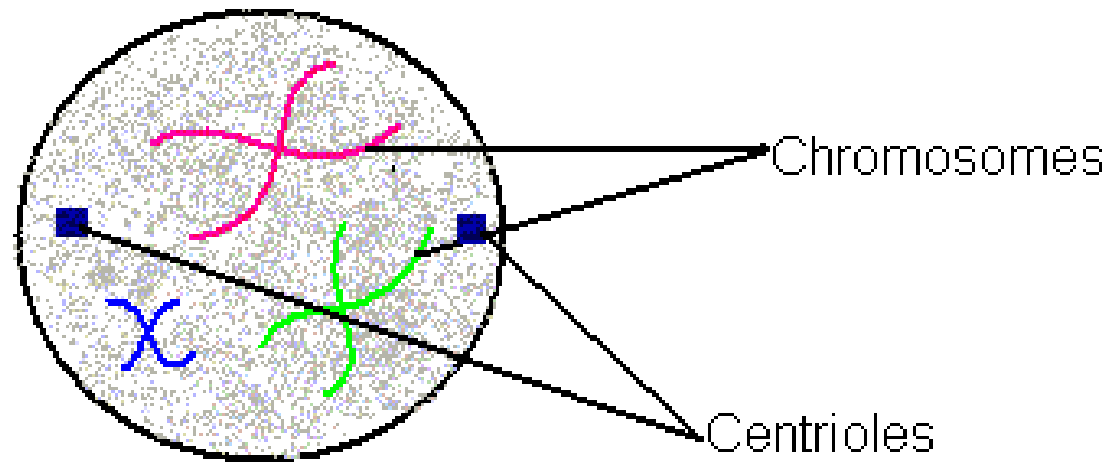
- Happens in all cells
- Cell division process
- 5 major stages

# Prophase

- Nuclear envelope disappears
- Chromosomes condense – can see sister chromatids
- Centromere
- Spindle forms

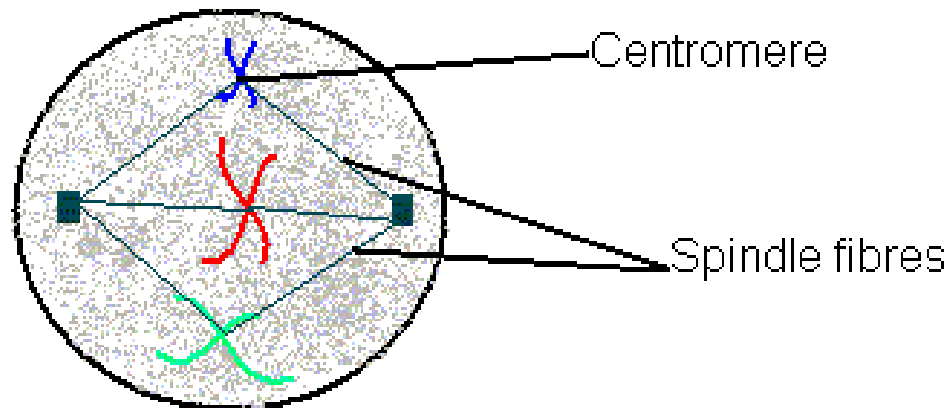


# Prophase



# Metaphase

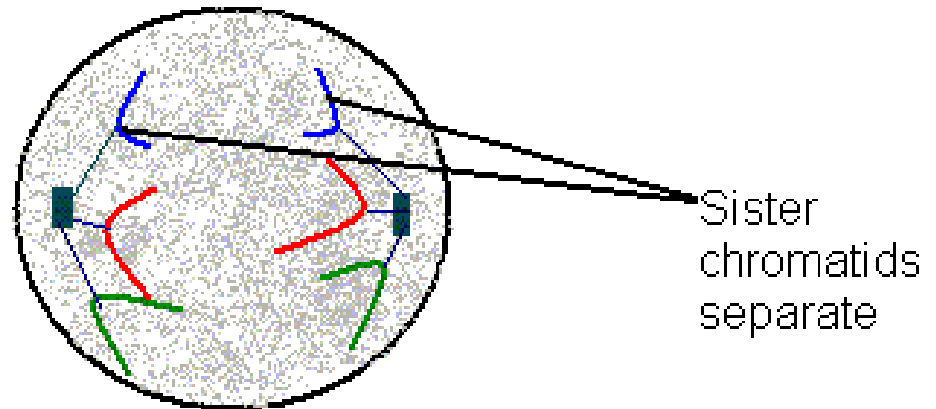
- Chromosomes move to the equator of spindle
- Each chromatid is attached to spindle with centromere





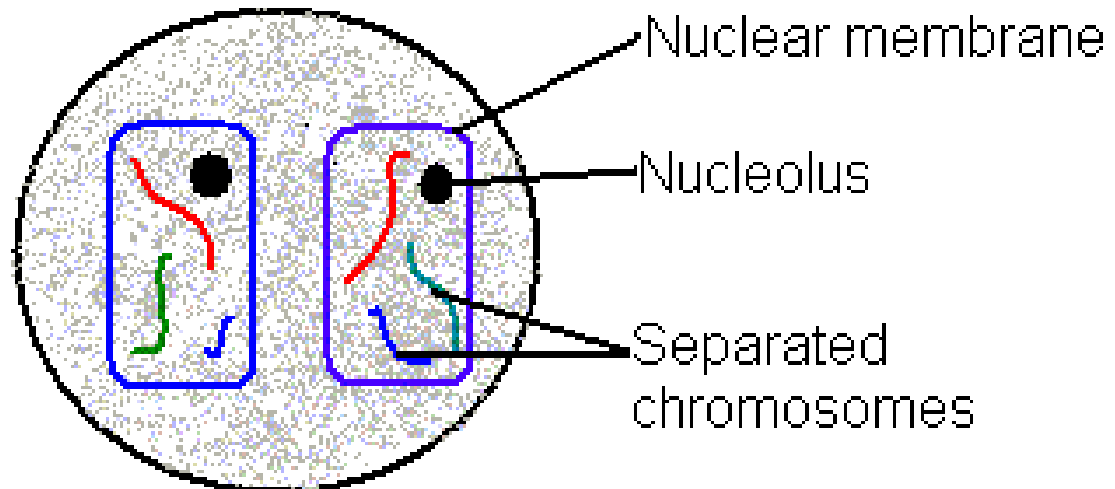
# Anaphase

- Centromeres split
- Sister chromatids are pulled apart to opposite poles of the cell
- Each chromatid is now a separate chromosome



# Telophase

- Nuclear envelopes (2) reform
- Chromosomes begin to uncoil

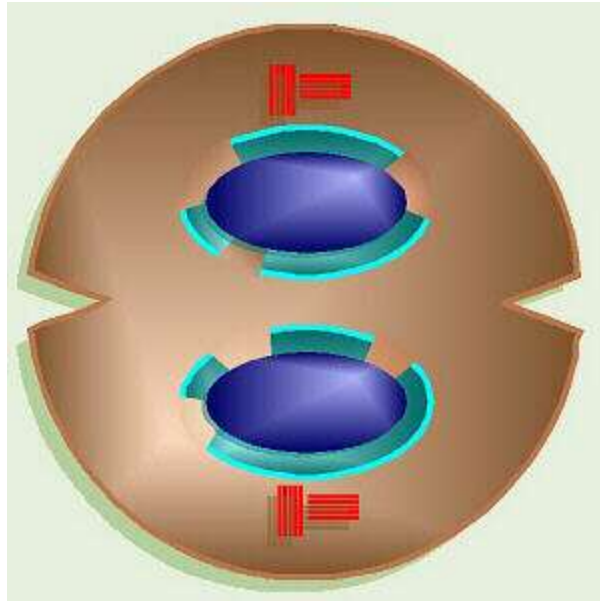




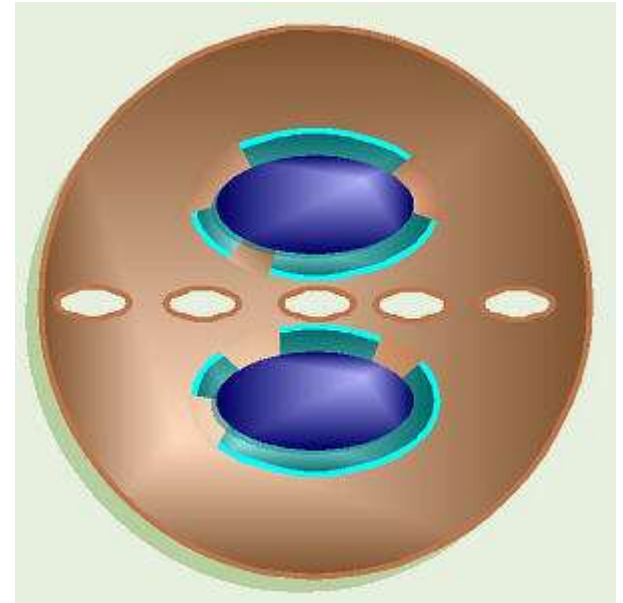
# Cytokinesis

- Cytoplasm divides
- Two new daughter cells are now separate

# Cytokinesis



Animal



Plant

# Mitosis

- I
- P
- M
- A
- T

