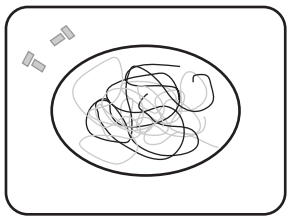
Cell Divison
(Mitosis and Cytokinesis)

Cell division consists of two processes: (1) Mitosis: nuclear division, and (2) Cytokinesis: cytoplasm division. Mitosis begins at prophase and continues through telophases. Note that cytokinesis and mitosis overlap.

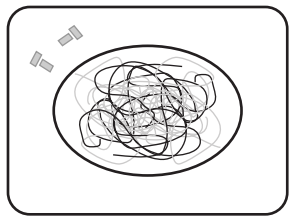
When the cell is not dividing, it is said to be in interphase.

Interphase



Parental Cell
(DNA as chromatin)

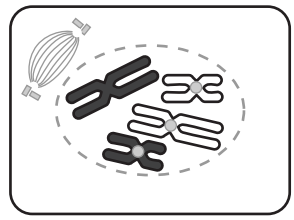
Interphase



Parental Cell
(DNA duplicates)

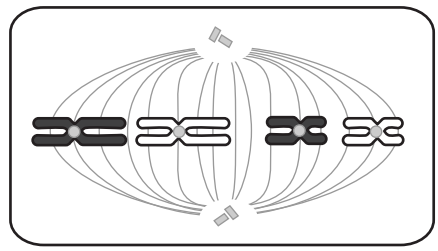
Prophase

Condensation
(DNA in chromosome form)
Nuclear envelope disappears
Centrioles form spindle



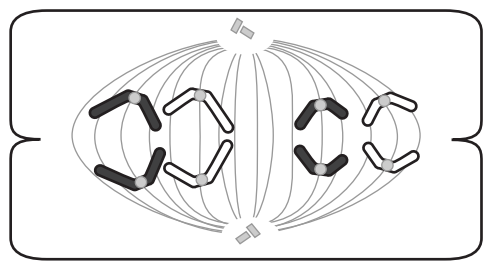
Metaphase

Nuclear membrane gone.
Chromosomes align at center,
and attach to spindle fibers



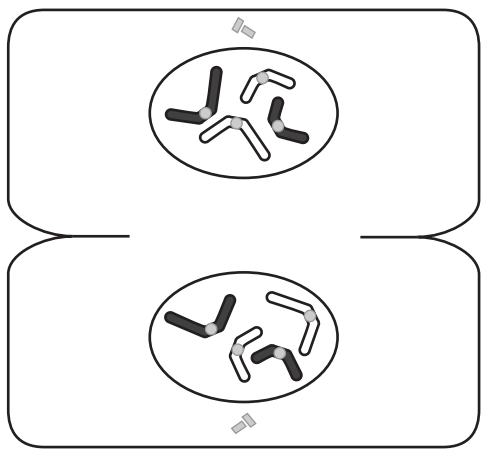
Anaphase

Separation occurs, chromosomes
pulled to opposite poles of cell.
Cytokinesis begins



Telophase

Nuclear envelope reforms.
Cytokinesis continues



Interphase

DNA unravels, forms chromatin.
Daughter cells have formed