

Cell Division

Watch Out! This section contains a few common mistakes or practices that occur in this lab. Read this section before beginning your lab.

1. Mitosis is the process of cell division for growth and repair. The chromosome number stays the same from parent to daughter cell ($2n$). The daughter cells are genetically identical to the parent cell.
2. Meiosis is the formation of sex cells, sperm and egg. The chromosome number is cut in half from the parent ($2n$) to the daughter cells (n). The sperm and egg that are formed are genetically different ~~to~~ from the parent, although very similar for some genes.
3. Mitosis is just one quarter of the cell cycle. The cell cycle stages include Gap 1 (G_1), Synthesis (S), Gap 2 (G_2), and Mitosis.
4. G_1 , S , and G_2 are collectively called Interphase. Mitosis includes 4 stages: Prophase, Metaphase, Anaphase, and Telophase. Cytokinesis is the division of the cytoplasm. Cytokinesis begins in anaphase and leads to the formation of two daughter cells during telophase.
5. Mitosis goes through these stages once, meiosis goes through these stages twice (Meiosis I and Meiosis II).
6. Mitosis takes place in the nucleus of a somatic (non-sex) cell and involves replication of the DNA within the nucleus of the cell. The DNA is identically duplicated and then separated into two daughter cells in the process mitosis. Meiosis takes place in the nucleus of sex-cells; sperm and egg. The DNA is duplicated, separated in Meiosis I and then halved on Meiosis II into 4 separate sperm or eggs.