

Cell Division and Mitosis Assignment

Choose **one** of the first two, as well as part three.

1. Draw a detailed, labeled, colored (DNA only) diagram depicting the stages of cell division for a **plant** cell.
2. Draw a detailed, labeled, colored (DNA only) diagram depicting the stages of cell division for an **animal** cell.
3. Beside each diagram summarize in 1 or 2 lines the key event(s) that take place in that stage.

Note the following:

- a. **The number and color of chromosomes must remain consistent for all diagrams.** Therefore, if you choose to draw 1 red pair and 1 blue pair then all other diagrams must have the same.
- b. **Chromosomes always come in pairs.** Therefore, **there will always be an even number of chromosomes.** Be sure all your diagrams reflect this understanding.
2 pairs = 4 chromosomes
3 pairs = 6 chromosomes
4 pairs = 8 chromosomes

Stage 1 Interphase (1/3 page diagram)

Labels must include: cell membrane, cell wall (plant only), nuclear membrane, chromatin, nucleolus

Stage 2 Prophase (1/3 page diagram)

Labels must include: chromosomes forming, centrioles and aster (animal cell only)

Stage 3 Prometaphase (1/3 page diagram)

Labels must include: nuclear membrane (almost gone), spindle fibers

Stage 4 Metaphase (half page diagram)

Labels must include: sister chromatids, chromosome, centromere

Stage 5 Anaphase (half page diagram)

Labels must include: daughter chromosomes

Stage 6 Telophase (full page diagram)

Labels must include: nuclear membrane reforming, cleavage furrowing (animal only), cell plate (plant only)

Stage 7 Cytokinesis (full page diagram)

Labels must include: chromatin, nucleolus