

Cell Cycle and Mitosis Lab

Honors Biology

*If you had difficulty organizing your last formal lab, use this as a template and OUTLINE in your lab notebook first!

Question: *Does mitosis occur at the same rate in each part of the onion root tip?*

Introduction: Should be three, well-written paragraphs

1. Cell Cycle
2. Stages of Mitosis
3. How this information connects to the purpose of the lab (without giving a hypothesis!)

Hypothesis:

Listen to the discussion of how the onion root tip grows. Make a hypothesis that compares the rate of mitosis in area X and Y. Use if then because format!

Materials and Methods:

- Observe the onion root tip cell.
- Focus on area Y first. Use the 40X objective lens and write down the total magnification.
- Count the number of cells. Explain how you estimated/counted the total number.
- Then determine the amount of cells in each stage. **Explain** how you systematically went about doing this! Example, since most cells are in interphase,
- Make sure to include in your explanation of methods what your independent variable was (what you compared) and what your dependent variable was (what you measured!)

Data and Analysis:

- Make an organized table. The table needs to show:
 - Total # of cells, and # of cells in each stage of the cell cycle—interphase, prophase, metaphase, anaphase, telophase/cytokinesis
 - Cells counted in area X and cells counted in area Y
 - % of cells for X and Y
- Calculate-- % of a cells: (kind of like the % of Earth's time calculation)
- Outline graph and discuss with your lab group (for formal lab you will computerize this)
 - Type of graph?
 - Independent Variable?
 - Dependent Variable?
 - Data sets to compare by color?
 - What data will you graph?
- Trend Analysis: Write a statement that includes math that discusses 2-3 major trends that are seen in the data. Only include the WHAT and not the WHY!