Name:

**20C 18TI**

|  |  |
| --- | --- |
| **SNC2D** | **Laboratory Activity**  **Mitosis in Animal and Plant Cells** |
| **Biology** |

## Objectives In this laboratory activity, you will:

1. Observe onion root tips. (plant)
2. Observe whitefish blastula cells.
3. Identify and draw diagrams of the stages of mitosis.
4. Prepare a mini-lab report including two biological drawings.

## Materials

microscope

onion root tip slide

whitefish blastula slide

## Procedure

* Pick **one phase** in whitefish blastula. Sketch a scientific diagram to scale, and identify the mitotic phase.
* Pick **a different phase** in the onion root tip. Sketch a scientific diagram to scale, and identify the mitotic phase.
* Ensure that you calculate the **actual size of each cell** and the **magnification of your drawing**!

**Observations**

1. While you observed the slide under low power and then high power, how could you tell the cells were dividing?

[1 TI]

1. While observing the slide under high power **(without moving it!)**, count the number of cells seen in interphase and each of the phases of mitosis. [3 TI]

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Total number of cells counted (all of the cells): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | | | | | |
|  | **Interphase** | **Prophase** | **Metaphase** | **Anaphase** | **Telophase** |
| **Tally**  **(rough work)** |  |  |  |  |  |
| **Number of cells in each phase** |  |  |  |  |  |
| **% of cells in each phase**  (number in phase/total x100) |  |  |  |  |  |

**Discussion Questions**

1. Suggest why onion root tips and whitefish embryos were chosen as examples in this activity. [1 TI]
2. Do actively dividing cells look different from cells that divide less often? Explain your observations with reference to the onion root tip. [1 TI]
3. Which phases were the most difficult to distinguish between? Why? [2 TI]
4. The percentage of cells in each phase represents the time spent in each of these phases. Which phase has the highest percentage of cells and therefore represents the longest time the cell spends in this stage? [2 TI]