

Cell Division/Mitosis Lab

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Objectives:

- To observe cells that were in the activity of dividing
- To recognize the bodies of heredity that are called chromosomes
- To understand the sequence of the cellular activity that culminates with cell division

Procedure:

PART 1

1. Take the handout entitled “Organization of the Body – Cell Division/Mitosis” and use the same color for each cellular component in every phase of mitosis where it appears.
2. Next utilize the blank area in the lower left part of the handout to list the highlights of each phase of cell division/mitosis. Refer to your classroom notes for assistance in completing this section. If more space is needed, use the back of the page.

PART 2

1. Microscope slide: Whitefish

Obtain a prepared slide of the whitefish to identify as many phases of mitosis as possible. Focus it under low power to see the large area of cells. Note that the nuclei of the cells are well stained. Switch to high power and you will see individual cells and the chromosomes inside the nuclei.

Scan the slide and identify as many of the stages of mitosis as you can. As you find each, make a sketch on the left margin of this sheet.

2. Viewmaster: Set 53 Animal Mitosis

1. skip
2. prophase
 - chromatids pairing
3. metaphase
 - chromatid pairs line up on the equator
 - note the centrioles
4. skip
5. anaphase
6. anaphase
 - separation of identical chromatid pairs
7. telophase
8. telophase
 - cytokinesis (division of cytoplasm) progresses

PART 3

Answer the following questions.

1. In what phase of their life cycle were most of the cells that you observed?
2. In which stage of mitosis do the chromosomes first become readily visible?
3. Describe key differences between metaphase and anaphase.
4. How can you tell when anaphase gives way to telophase?
5. At what stage does cytokinesis begin?