

Microscope Usage and Cell Observation

Subject: Biology | Grade: Grade 9

Objective:

To learn the proper handling of a compound light microscope and to observe plant (onion epidermis) and animal (cheek) cells.

Materials:

Compound Light Microscope
Glass Slides and Cover Slips
Onion Bulb
Forceps
Iodine Solution
Methylene Blue Stain
Toothpicks (for cheek cells)
Dropper
Distilled Water

Procedure:

Part A: Plant Cells (Onion Epidermis)

1. Peel a thin layer of epidermis from the inside of an onion scale leaf.
2. Place it on a glass slide with a drop of water.
3. Add a drop of Iodine solution to stain the nucleus.
4. Gently lower a cover slip to avoid air bubbles.
5. Observe under low power (10x) and then medium power (40x).

Part B: Animal Cells (Cheek Cells)

1. Gently scrape the inside of your cheek with a clean toothpick.
2. Smear the scraping onto a clean glass slide.
3. Add a drop of Methylene Blue stain.
4. Cover with a cover slip and observe under the microscope.

Discussion Questions:

1. Draw a labeled diagram of the onion cell and cheek cell.
2. What are the key differences observed between the plant and animal cells?
3. Why are stains used in microscopy?
4. What is the function of the cell wall?