

## Lab Activity: Comparing Plant and Animal Cells

/25 marks

In this activity you will prepare slides for viewing under the compound light microscope/micro-viewer to compare plant and animals cells.

### Materials

- micro-viewer
- slide
- iodine
- microscope
- Cover slip
- Onion
- prepared cheek cell
- eye dropper

### Safety Considerations:

- Be sure to follow all safety rules as outlined in the lab safety rules.
- Be sure to wear gloves when handling iodine.

### Procedure

#### Part 1: Looking at the Onion Cell Under the Microscope

- 1) Place a drop of iodine on a clean slide.
- 2) Place a small piece of onion membrane into the iodine. Carefully place a cover slip to avoid air bubbles.
- 3) Observe on low power.
- 4) Now switch to medium power. Make a proper biological diagram of the cells.
- 5) Remember that you only have to draw a few cells. Label the cell wall, cell membrane, nucleus and cytoplasm. These will be the only organelles that you can see.
- 6) Be sure to use stippling to show that there are other “components” to the cell and to add detail/dimension.
- 7) Clean the slide using warm water. Dry and place back on utility bench.
- 8) Return the microscope to low power and place the cover back on.

#### Part 2: Cheek Cell Under the Micro-viewer

- 1) Use the micro-viewer to look at the Cheek Cells (900x). Be sure to read the description in the micro-viewer booklet.
- 2) Make a biological diagram of what you see. Remember that you only have to draw one or two cells. Label the cell membrane, nucleus and cytoplasm.
- 3) Be sure to use stippling to show that there are other “components” to the cell and to add detail/dimension.

**Cell Lab Analysis** (15 marks)

- 1) Why is the iodine necessary in this lab? (1 mark)
  - 2) The compound light microscope used in the lab is not powerful enough to view other organelles in the cells. What parts were visible and what are their functions? (4 marks)
  - 3) List two organelles that were NOT visible but that you know are in the cells? (2 marks)
  - 4) The mouth is the first site of chemical digestion in humans. Your saliva starts the process of breaking down the food that you eat. Keeping this in mind what organelle do you think would be numerous inside the cells of your mouth? (2 marks)
  - 5) Explain the differences between plant and animal cells. Use specific organelles in your answer. (4 marks)
  - 6) Suggest why onions and humans were used as the source of cells in this activity. (2 marks)
- 
- Be sure to attach biological diagrams of both plant and animal cells. (5 marks each = 10 marks)
  - Remember to following how to complete a proper biological diagram. Use your example from class.