Worksheet: Using a Microscope to View a Prepared Slide

Name: _____
Date: _____
Class: _____

Aim

To use a light microscope correctly to observe a prepared slide.

Equipment

- Light microscope
- Prepared slide (e.g. onion cell, cheek cell)
- Tissue or lens paper
- Pencil and paper for drawing

Follow the steps below to set up the microscope.

1. **Place the microscope** on a flat, stable surface.

2. **Plug in and turn on** the light source or adjust the mirror.

3. **Rotate the nosepiece** to the **lowest power** objective lens (usually 4× or 10×).

4. **Place the prepared slide** on the stage. Centre the specimen over the hole.

5. **Secure the slide** using stage clips.

6. **Look from the side**, and turn the **coarse focus knob** to raise the stage close to the objective lens **without touching it**.

7. **Look through the eyepiece**, and **slowly lower the stage** using the coarse focus knob until the image is visible.

8. **Adjust the fine focus knob** to sharpen the image.

9. **Adjust the diaphragm/light** to control brightness and contrast.

10. **Switch to a higher magnification** if needed (e.g. 40×), and **use only the fine focus** to bring the image into sharp focus.

11. **Draw what you see.**

- Use pencil only
- No shading

12. **When finished:**

- Rotate back to low power
- Lower the stage
- Remove the slide
- Turn off the light
- Cover the microscope

4 Rules for Drawing Cells from a Microscope

1. **Use a pencil only** – Draw lightly with a sharp HB pencil, do not use pens or colours.
2. **Draw what you see, not what you think you should see** – Base your drawing on actual observation.
3. **Use clear, continuous lines** – No sketchy or overlapping lines. Avoid shading, as per figure 1.
4. **Label neatly with straight lines** – Use a ruler to draw horizontal label lines, and place labels outside the drawing. No overlapping label lines and no arrows.

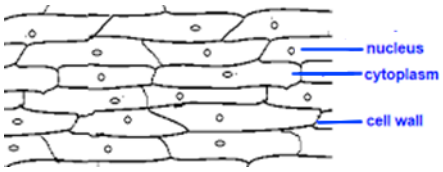

Figure 1 How to label a microscope image.

After drawing the cells students must include a description beside or below the drawing of what was observed. This includes the following:

a. A heading – This describes what is being observed

b. What they observed - Rectangular-shaped cells in a grid pattern. Clear cell walls and a central nucleus were visible.

c. Any visible structures - Nucleus appeared as a dark, circular region inside the cell.

d. Any patterns or features - Cells were arranged in rows and had thick cell walls.

e. Magnification used - Viewed under 400× magnification.

Label the parts of the microscope.

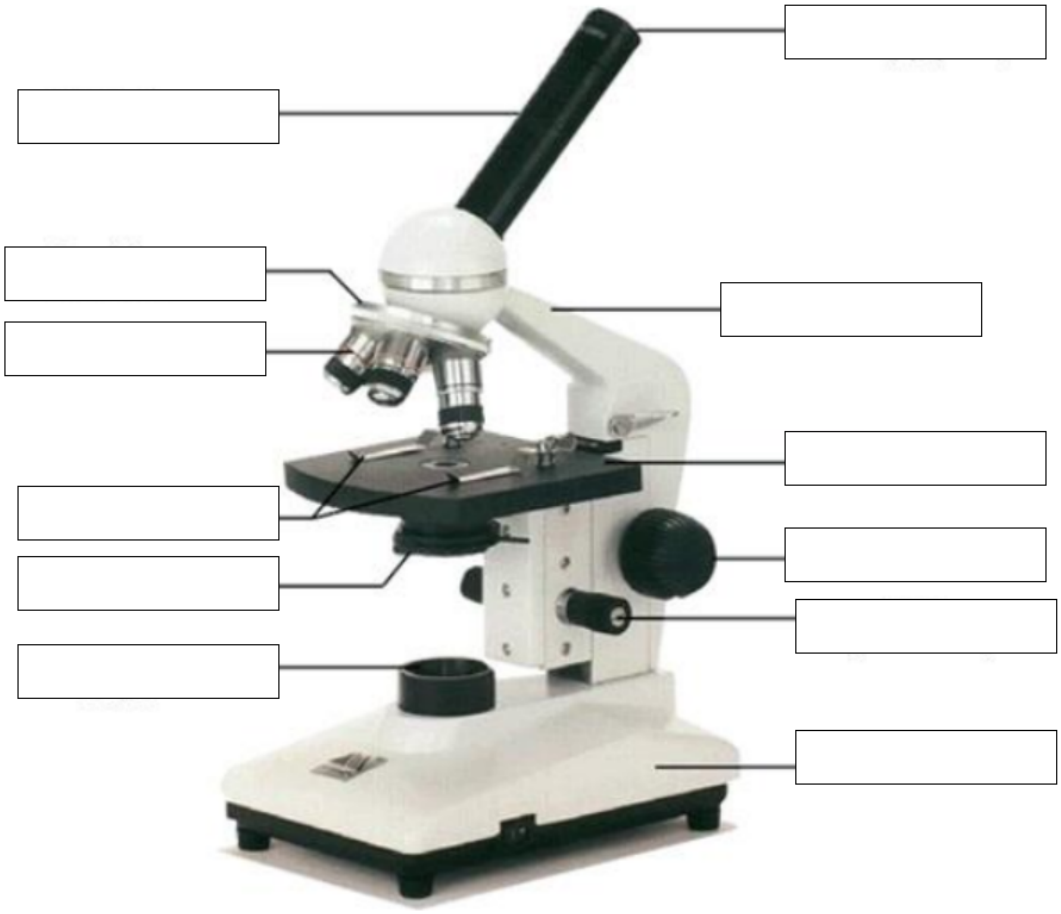

Figure 2 – The parts of a light microscope.

Match each part of the microscope with its function by completing the table below.

Part	Function
	Provide different levels of magnification
Diaphragm	
Coarse focus	
	Allows for more detail with finer focus.
Stage	