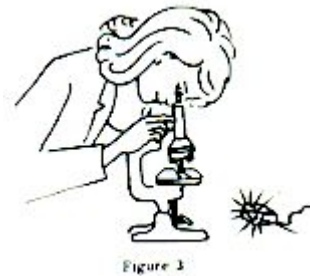


Name & Period: _____

Date: _____

How to use a microscope

1. When moving your microscope, always carry it with both hands (Figure 1, below). Grasp the arm with one hand and place the other hand under the base for support.
2. Your microscope slide should be prepared with a coverslip or cover glass over the specimen. This will help protect the objective lenses if they touch the slide. Place the microscope slide in the mechanical stage.
3. **Always start with the scanning objective (4x).** Odds are, you will be able to see something on this setting.
4. Look at the objective lens and the stage from the side (Figure 2) and turn the coarse focus knob so that the stage moves upward. Move it as far up as it will go ***without touching the slide!***
5. Now, look through the eyepiece (ocular lens) and adjust the diaphragm (Figure 3) for the right amount of light. You will see a line in your viewing field, its a pointer, and is useful for pointing out things to your lab partner or teacher.



6. Use the Coarse Adjustment Knob to focus, image may be small at this magnification, but you won't be able to find it on the higher powers without this first step. **Slowly** turn the coarse adjustment so that the stage moves down (objective lens is away from the slide). Continue until the image comes into focus. Use the fine adjustment for fine focusing.
7. Move the microscope slide around (using the knobs hanging down from the stage) so that the image is in the center of the field of view and readjust the diaphragm for the clearest image.

8. Now, you should be able to change to the next objective lenses with only minimal use of the focusing adjustment. **Once you've focused on Scanning Objective (4x)**, switch to **Low Power (10x)**. Use the Coarse Knob to refocus and center. Again, if you haven't focused on this level, you will not be able to move to the next level.

9. The proper way to use a monocular microscope is to look through the eyepiece with one eye and keep the other eye open (this helps avoid eye strain). If you have to close one eye when looking into the microscope, it's ok. Remember, everything is upside down and backwards. When you move the slide to the right, the image goes to the left!

10. Do not touch the glass part of the lenses with your fingers. Use only special lens paper to clean the lenses.

11. **Now switch to High Power (40x)**. At this point, **ONLY** use the Fine Adjustment Knob to focus specimens. If the specimen is too light or too dark, try adjusting the diaphragm.

12. Always keep your microscope covered when not in use. Dust is the number 1 enemy!

Cleanup

1. Store microscopes with the scanning objective (4x) in place and stage down.
2. Wrap cord and cover microscope.
3. Wash slides in the sinks and dry them, placing them back in the slide boxes to be used later.
4. Throw coverslips away.

Troubleshooting

Occasionally you may have trouble with working your microscope. Here are some common problems and solutions.

1. Image is too dark!

Adjust the diaphragm, make sure your light is on.

2. There's a spot in my viewing field, even when I move the slide the spot stays in the same place!

Your lens is dirty. Use lens paper, and only lens paper to carefully clean the objective and ocular lens.

3. I can't see anything under high power!

Remember the steps, if you can't focus under scanning and then low power, you won't be able to focus anything under high power.

4. Only half of my viewing field is lit, it looks like there's a half-moon in there!

You probably don't have your objective fully clicked into place.

