



HOW TO USE A MICROSCOPE

LESSON 1

OBJECTIVE:

- A. Students will review the parts, history, and use of a microscope.
- B. Students will be able to properly set up and use a microscope to view prepared slides.
- C. Students will be able to make a dry mount slide.
- D. Students will be able to differentiate between magnification and resolution, and calculate total magnification of lenses used.

MATERIALS:

1. Jump Drive (How to use a Microscope)
2. Hand Out (How to use a Microscope)
3. Microscope(s) Small group set
4. Clean slide
5. Clean cover slip
6. Scissor
7. Printed page of letters to cut

PROCEDURE:

1. Present Power Point
2. Teacher Demonstration (Go to “Let’s Get Started Slide”...last slide on Power Point) Demonstrate each step on slide. **EMPHASIZE** the difference between the coarse adjustment knob and fine adjustment knob. Show students what could happen to the slide if the high power objective lens is lowered without looking at the microscope from the side...cracked slide and damaged objective.
3. Student Activity: (Directions on Student Handout)
4. Students complete handout.

5. Review handout...SHARE observation responses/check for accuracy on magnifications.
6. Clean up (emphasize proper handling of microscope)

CLOSURE:

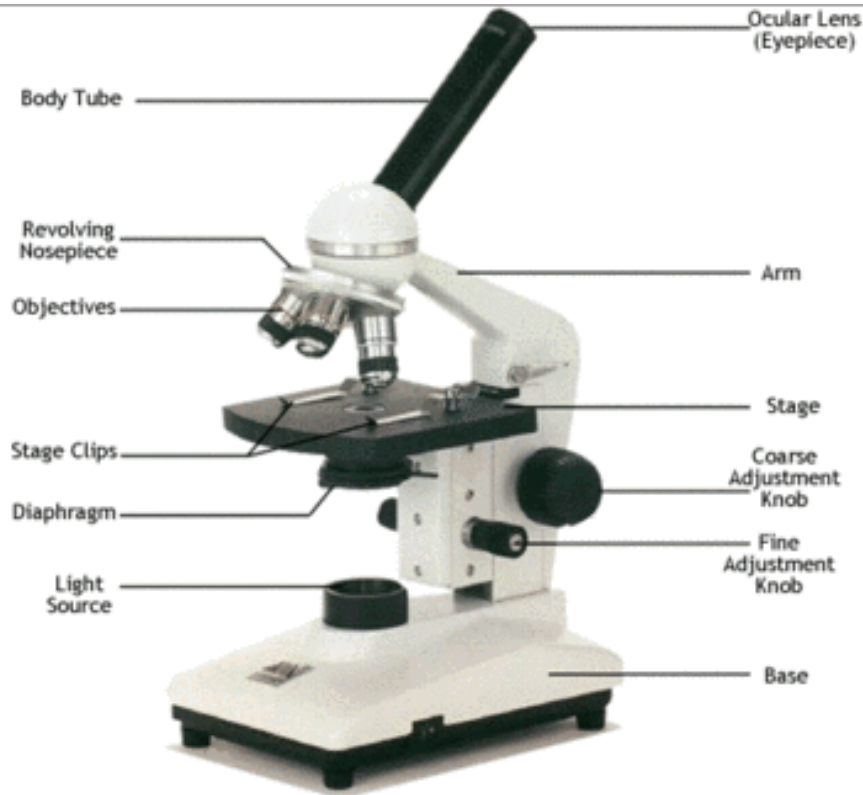
Have students answer reflection question on handout or as a group.

STUDENT HANDOUTS:

1. Microscope diagram
2. Observations and drawings

Name: _____

HOW TO USE A MICROSCOPE: STUDENT HANDOUT



1. Get a microscope for your teacher. (MAKE SURE AND CARRY IT WITH TWO HANDS...one on the base and the other on the arm of the microscope)
2. Get a piece of paper with letters from your teacher. Cut out any letter.
3. Place the letter on the slide.
4. Gently place the cover slip over the letter.
5. Plug in the microscope.
6. Make sure the lowest power objective is in place and all the way up from the stage (Maximum distance between stage and objective).
7. Secure the slide under the stage clips. Center the slide containing the paper letter on the stage. Place the letter so it is in the normal upright position.
8. Turn on the light...located underneath the stage.
9. Using the coarse adjustment knob, CAREFULLY lower the low power objective lens until you can see the specimen. (**MAKE SURE TO USE THE LOW POWER OBJECTIVE**)
10. While looking into the eyepiece...use the fine adjustment knob to focus on the specimen.
11. In the circles below, draw the letter you see in the microscope.

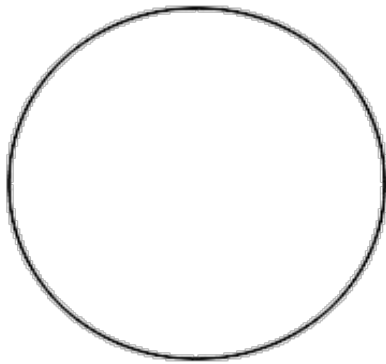
Name: _____

12. (A) Be sure to record the magnification.

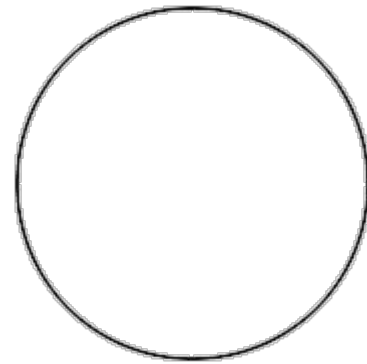
While looking through the microscope, move the slide to the left, notice which way the letter moved. Now move the slide to the right. Notice which way the letter moved. Do the same with moving the slide away and towards you.

OBSERVATION:

13. Turn the high power objective into position and bring the letter into focus. Draw the letter as seen through the microscope (B) Record total magnification.



(A) MAGNIFICATION



(B) MAGNIFICATION

Answer in complete sentences:

1. Explain an important thing to remember as you turn the high- power objective into place.

2. What should you always remember when you use the coarse adjustment?

3. What should you always remember when handling microscope slides?

4. What is the purpose of the stage clips?

Name: _____

5. What is the magnification of a microscope with an eyepiece that has 10X and an objective lens with 43X? (X is magnification)

6. What are the two parts used to carry the microscope?

7. What is the purpose of the cover slip?

8. Which objective lens is used to locate the specimen and first focus?

9. What should you do if the high power objective lens touches or breaks the cover slip?

10. What is the diaphragm used for?

TIME PERMITTED: Look at extra slides and see if you can guess what they are...**don't** look at the labeling on the slide first.