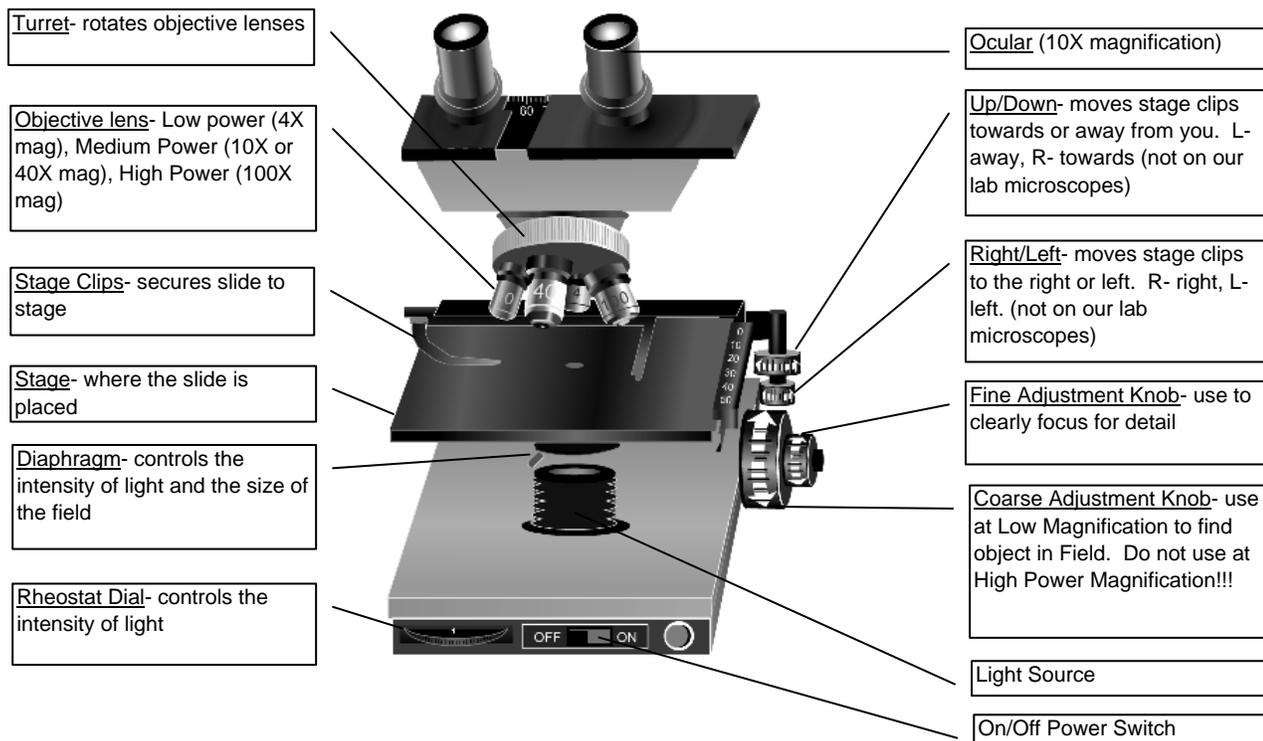


The Virtual Microscope

Using the website, <http://www.udel.edu/Biology/ketcham/microscope/scope.html>, answer the questions by performing the given steps and directions. To move parts or switch on, click on the part.



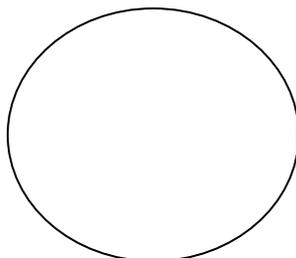
- Things to know:
- 1) Always start looking at your slide at low power with the slide as close to the objective as possible. Once the specimen has been located, turn the turret to a higher power magnification and focus. Never focus downward.
 - 2) Never use the coarse adjustment knob with the high power objective. You could break the lens.
 - 3) Total Magnification = Magnification of the Eye Piece X Magnification of the Objective Lens

Before You Start

- 1 Turn the microscope on. Turn the rheostat to 10. Turn the diaphragm 2/3 to the right.
- 2 Go to switch views and fix your field by moving the oculars so that 2 circles become 1. Click on switch views to go back.
- 3 Make sure your objective is at low power (4X magnification).

The Letter E

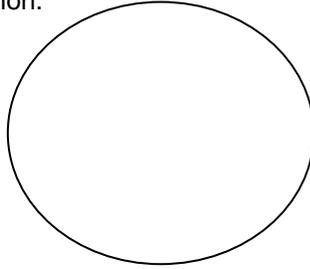
- 1 Click on the slide with the letter E. Adjust the slide using the Up/Down and Right Left Knobs, so that the letter E is in the center of the field
- 2 Switch views and use both the coarse adjustment and fine adjustment knobs to locate and see the letter E.
- 3 Center you letter E so that it is in the middle of your field.
- 5 At low power, how many millimeters long is the letter E? _____ mm
- 6 What is your **total** magnification? _____ total mag.
- 7 Draw what you see in your field.



- 8 How many millimeters long is the letter E at 100X **total** magnification? _____ mm
- Switch views and return to low power magnification.

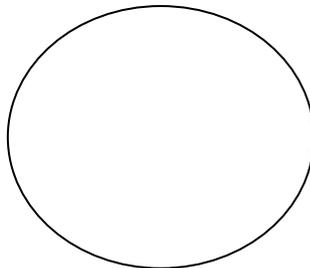
The Onion Root Tip

- 1 Switch the letter E slide for the onion root tip slide. Adjust the slide so the specimen is in the center of the field.
- 2 Switch views and use the coarse adjustment knob to find the onion root tip.
- 3 Adjust your specimen so that the red circle is in the center of your field. Switch objective lens to 40X.
- 4 Use the fine adjustment knob to sharpen the image and draw what you see in your field.
Be sure to include the total magnification.



_____ total mag.

- 5 Switch objective to 100X mag. Use the fine adjustment knob to create a sharper image. Draw what you see in your field. Be sure to include the total magnification.



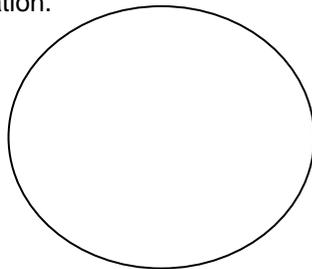
_____ total mag.

- 6 Compare and contrast the images at 400X total magnification and 1000X total magnification.

Switch views and return to low power magnification.

The Cheek Smear

- 1 Switch the onion root tip slide with the cheek smear slide. Adjust the specimen so that it is in the center of your field.
- 2 Switch views and use the coarse adjustment knob to find the cheek cells.
- 3 Adjust your specimen so that the red circle is in the center of your field. Switch objective lens to 40X.
- 4 Use the fine adjustment knob to sharpen the image and draw what you see in your field.
Be sure to include the total magnification.



_____ total mag.

- 5 Compare and contrast an onion root cell and a human cheek cell.