

AP Biology

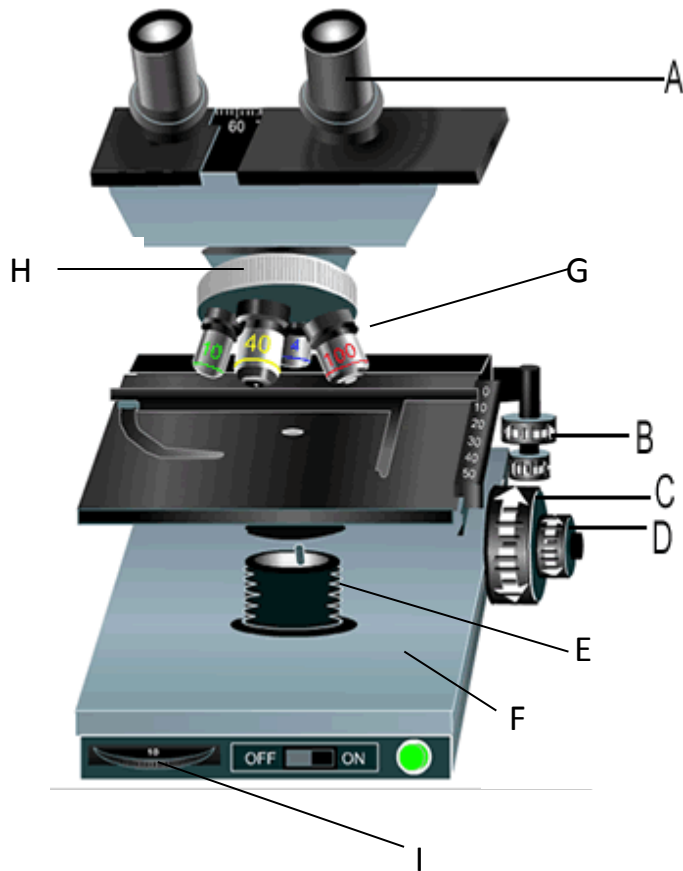
Introduction (or Re-acquaintance) to Microscopy

Microscopes are a valuable tool to use in biology. Scientists are able to see cells and what they are made of, as well as how they function in supporting overall cellular homeostasis. Cells are the basic unit of life, so without a microscope, scientists would have never been able to see what cells look like.

Access the Virtual Microscope at <http://www.udel.edu/biology/ketcham/microscope/scope.html>

Pre-Lab: Familiarize yourself with the microscope. **Run the tutorial** on the site and examine the parts you will be working with. Then answer the following questions.

1. How many objectives are on the virtual microscope? _____
2. What are the numbers listed on the objectives? _____, _____, _____ & _____
3. Identify the names of the following items marked on the microscope below.

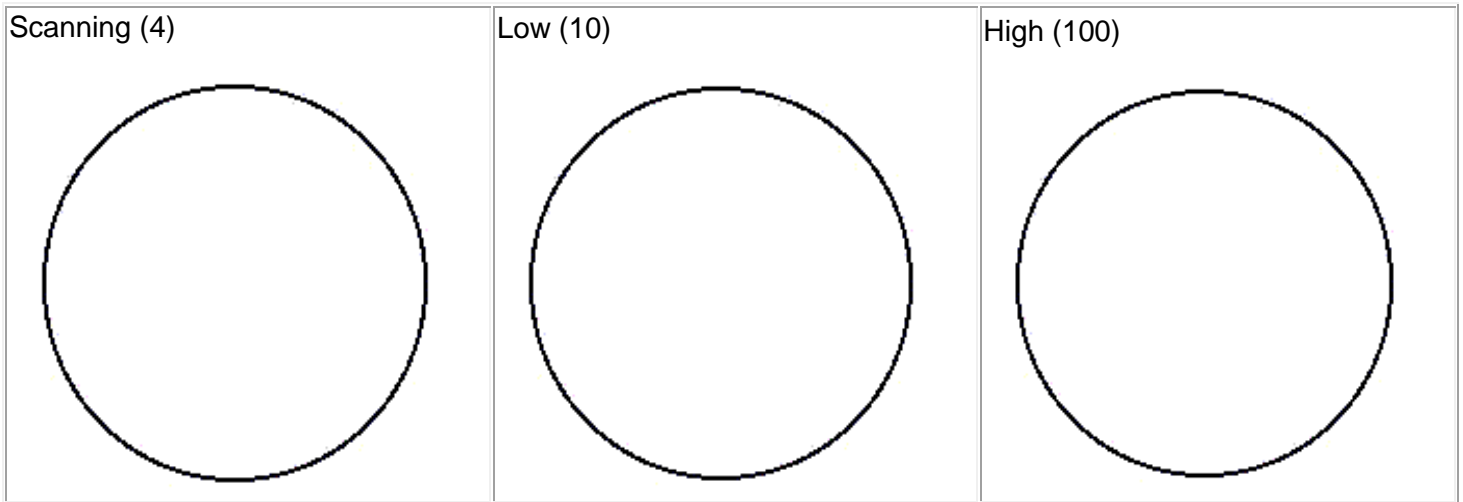


A.	_____
B.	_____
C.	_____
D.	_____
E.	_____
F.	_____
G.	_____
H.	_____
I.	_____

Instructions: Now you will take a look at the various slides. Remember to follow the checklist to ensure that you are following all steps properly (it will automatically check off each as you do them). Also, **all slides** need to **start on the 4x objective**

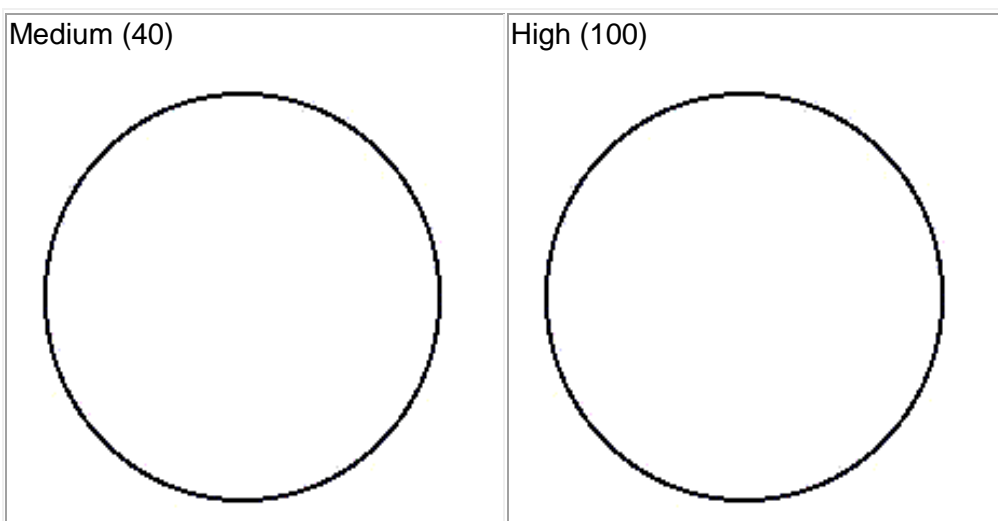
1st slide: You will start by looking at the slide containing the **letter “e.”**

- Look at the slide under each of the following objectives, and draw the letter exactly as it appears under each objective.
- Make sure the red circle is centered in the middle of the view before advancing to the next higher power.



2nd slide: Next, look at the slide containing the **onion root tip**

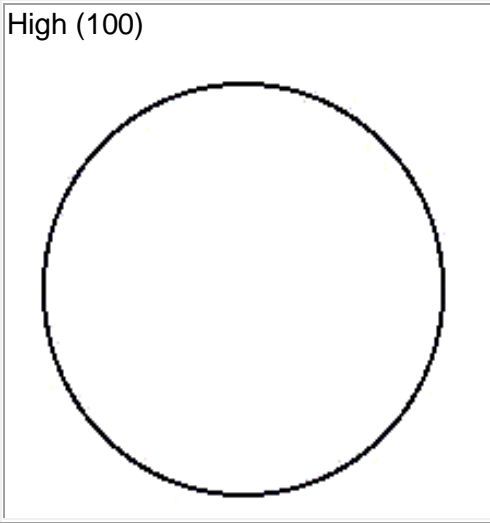
- Look at the slide under each of the following objectives, and draw what you see exactly as it appears under each objective.
- Make sure the red circle is centered in the middle of the view before advancing to the next higher power. NOTE: You must start by looking at the slide through the 4x objective



3rd slide: Next, look at the slide containing the **bacterial capsule**.

- Look at the slide under each of the following objectives, and draw what you see exactly as it appears under each objective.
- Make sure the red circle is centered in the middle of the view before advancing to the next higher power. NOTE: You must start by looking at the slide through the 4x objective.

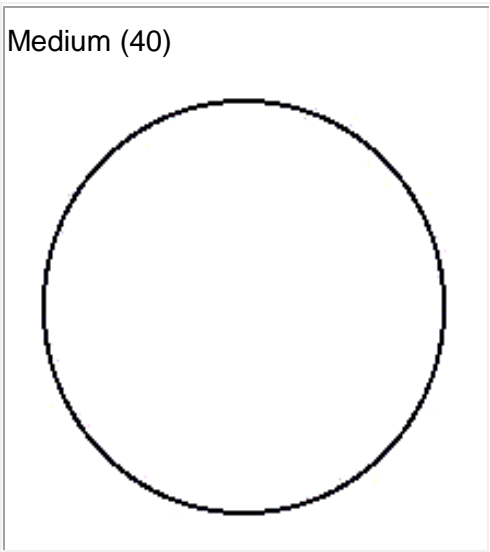
High (100)



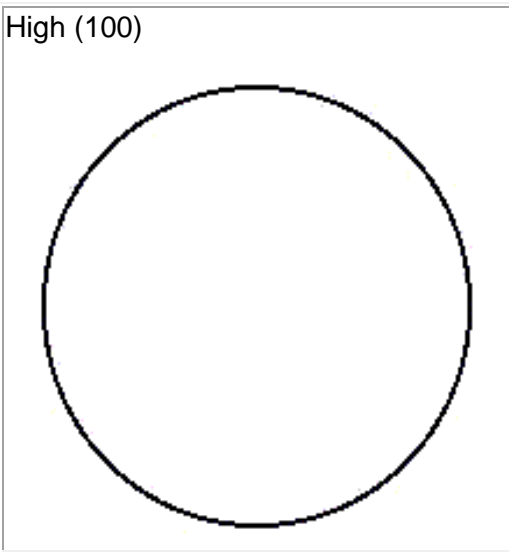
4th slide: Next, look at the slide containing the **cheek smear**.

- Look at the slide under each of the following objectives, and draw what you see exactly as it appears under each objective.
- Make sure the red circle is centered in the middle of the view before advancing to the next higher power. NOTE: You must start by looking at the slide through the 4x objective.

Medium (40)



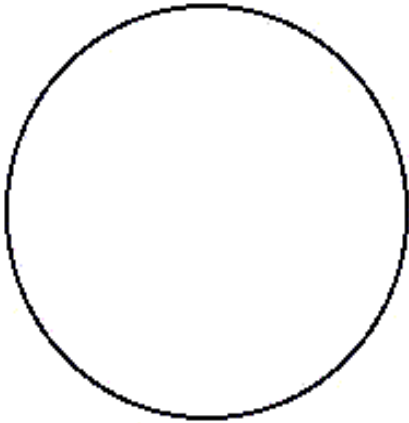
High (100)



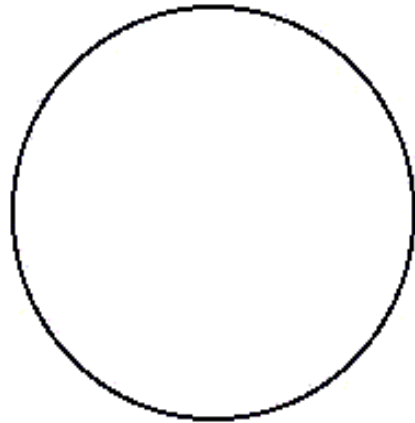
Please visit the following website: <http://www.brainpop.com/games/virtuallabsusingthemicroscope/>

You will take a look at Gram stained bacterial colonies, which is a technique that we will discuss in our unit that covers microorganisms. Navigate through the site, paying attention to the colonies of bacteria that you see at:

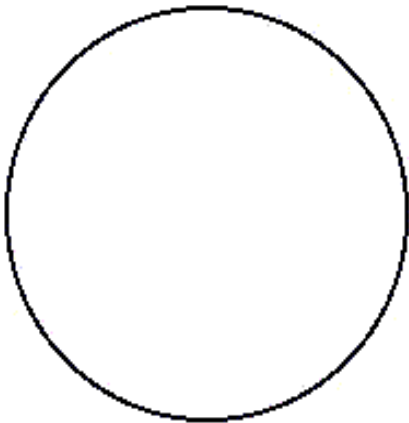
LOW Magnification:



HIGH Magnification:



OIL IMMERSION:



Make sure you READ CHAPTER 6 and take the time necessary to learn the major organelles that compose eukaryotic organisms such as ourselves.