

Scopes and Cells Lab

The Microscope

- Is this a compound or dissecting microscope?
- What kind of specimens would you look at with this scope? (characteristics of specimens)
- What is the lowest and highest total magnification of this scope?
- What are the objective lens and the ocular lens? What magnifications are there for each?
- Where are they located on this scope?
- Where is the Iris Diaphragm?
- Name two functions of the iris diaphragm that can increase resolution.
- What is the total magnification: when using the 4X lens / when using the 10X lens / when using the 40X lens?



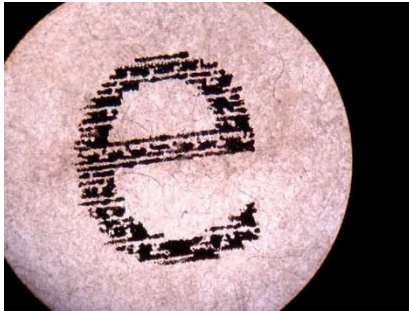
Correct Microscope Use

- *Look at this scope.* You pulled it out of the cupboard like this.
- What cardinal rule was broken?
- Why is this a problem?
- What do you never do while using the 40x lens?
- When you want to remove your slide and put your microscope away, explain the steps in the correct order.



Scopes and Cells Lab

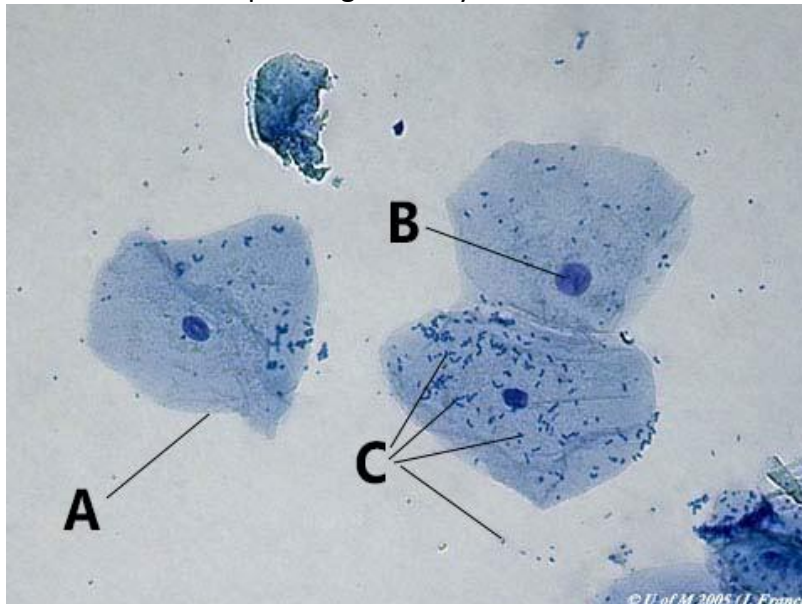
Magnification and Specimen Review



1. This letter e is at 10x objective magnification, estimate its size.
 - *Make sure you can write the equation that you used to find the answer.*
 - *Be sure to include the proper units of measurement.*

	Objective Magnification	Eyepiece Magnification	Total Magnification	Diameter Of The Field Of View
Scanning	4X	10X	40X	4600 μm
Medium	10X	10X	100X	1800 μm
High	40X	10X	400X	460 μm

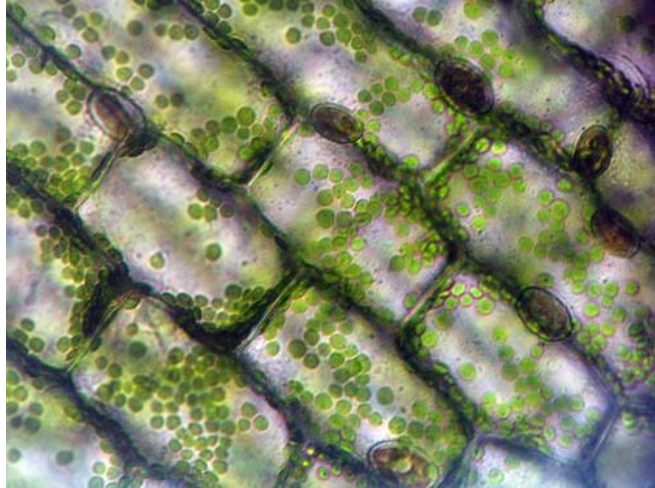
2. *This is a photo of human cheek cells as they look with a compound microscope.*
 - What is A pointing to?
 - What is B pointing to?
 - What is C pointing to? Why is C there?



Scopes and Cells Lab

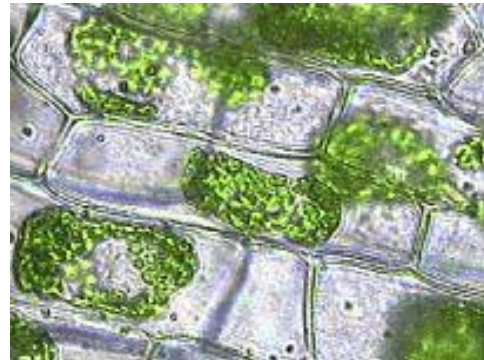
3. *This is a microscopic image of living plant cells.*

- What are the round green things?
- Can you see the cell wall?
- Can you see the plasma membrane?



4. *This is a microscopic image of plant cells after salt water added.*

- Can you see the cell wall?
- Can you see the plasma membrane?
- What has happened to the cells?
- Name three structures present in a plant cell that are NOT present in an animal cell.



Cells

Give an example of a prokaryotic cell.

Give two examples of a eukaryotic cell.

Name four cell components found in BOTH prokaryotic and eukaryotic cells.

Name cell components that can only be found in Eukaryotes.

What cell structures can be found in plant cells but not in animal cells? Hint: there are 3

Define the word: autotrophic

Define the word: heterotrophic

Name a type of organism for each of these terms.

In general, you can tell if an organism is heterotrophic or autotrophic just by looking at it. How?

Hint: Look at the pictures above of the plant cells. Are they heterotrophic or autotrophic? How can you tell?

Scopes and Cells Lab