

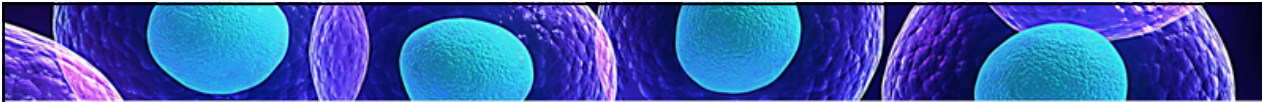
## Microscopes

We have had a lot of opportunity to use microscopes in this unit. Today, we will look at the invention and progression of the microscope, as well as look at how a microscope actually works.

We will start with a video to briefly explain the history of microscopy.

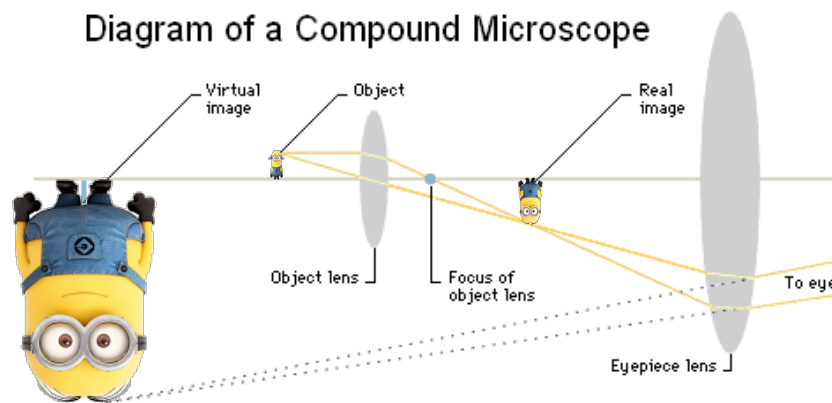
A video player interface showing a dark video frame. At the bottom, there is a control bar with a play button, a stop button, a double left arrow, a double right arrow, a progress bar, and a volume icon.

[YouTube Link](#)



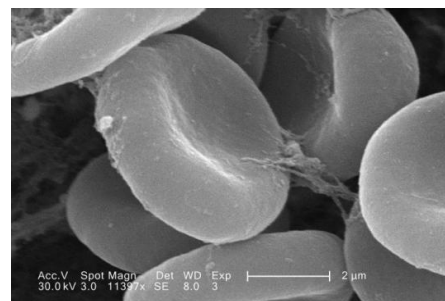
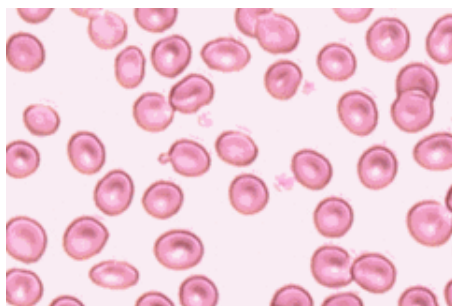
# Compound Light Microscope

So, just how does a microscope work???



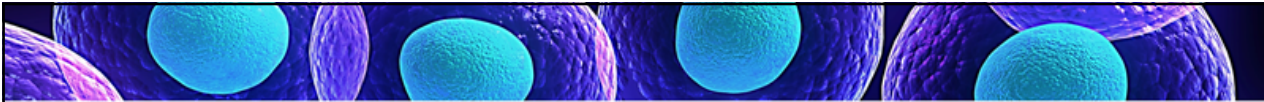
# Microscope Capabilities

Below are two images of the same thing, human red blood cells. What is the difference?



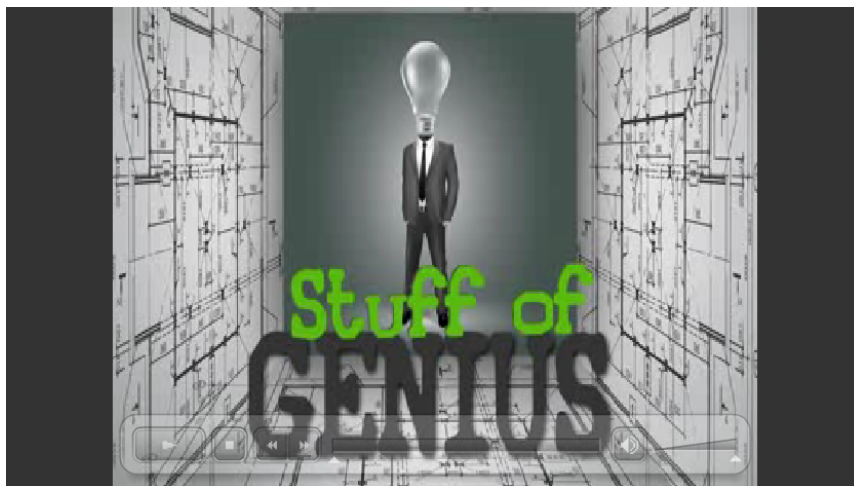
The image on the left was obtained with a compound light microscope, similar to what we use in class. The image on the right was obtained by using a scanning electron microscope, a million dollar piece of equipment.





## Scanning Electron Microscope

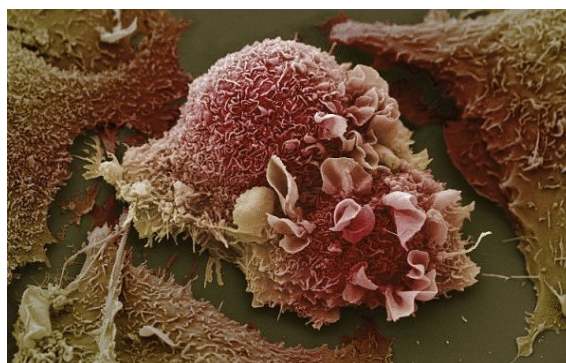
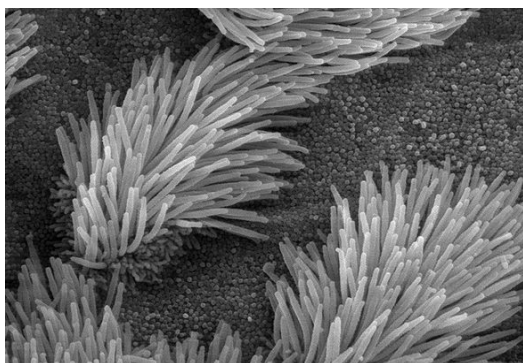
The scanning electron microscope (SEM) is capable of magnifying images significantly more than a compound light microscope (over 100 000 times). So, how does it work?



[YouTube Link](#)

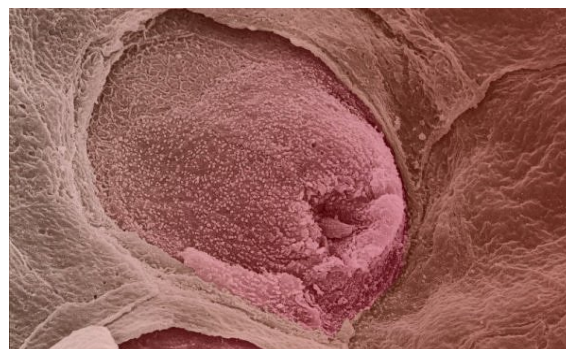


## Scanning Electron Microscope Images



Top Left - Bronchiolar Epithelium  
Top Right - Cancerous Lung  
Bottom Right - Taste Bud

One person from each table get a Chromebook and do a Google image search for "SEM Images." Take a couple minutes to browse what you found.



# Cells Unit Test

You will write your unit test in two periods. Please use any remaining time to study for that test. You may do so individually, or in a group of up to four. Here is the list of topics we have covered:

- Characteristics of Living Things
- Cell Theory
- Components of a Cell - Organelles, and their Functions
- Microscope Use
- Plant vs Animal Cells
- How Cells Get Energy
- Cell Processes - Diffusion, Osmosis, Mitosis
- Needs of Single Celled and Multicellular Organisms
- Diseases, Specifically Cancer
- Tissues, Organs, Organ Systems
- How Technology Helps us Understand Cells
- The Pros and Cons of Manipulating Cells

