The Cell Theory

1. The cell is the unit of structure in all living things.
2. The cell is the unit of function in all living things.
3. All cells come from preexisting cells.

Levels of organization

- Organisms
- Organ systems
- Organs
- Tissues
- Cells
- Organelles

Three Main Types of Cells

- **Animal Cells**: Eukaryotic cells that have a cell membrane, a membrane-bound nucleus, and organelles.
- **Plant Cells**: Eukaryotic cells with a cell membrane, a membrane bound nucleus, organelles, a rigid cell wall, and chloroplasts for photosynthesis.
- **Bacteria**: Prokaryotic (ancient) cells that have a cell wall but lack a nucleus or any membrane-bound organelles.

How big are cells?

- A typical animal cell is between 10 and 30 micrometers (µm). That's .01-.03 millimeters (mm).
- A sesame seed is about 3mm.
- Let's find out more:

http://learn.genetics.utah.edu/content/begin/cells/scale/

How can we see cells?

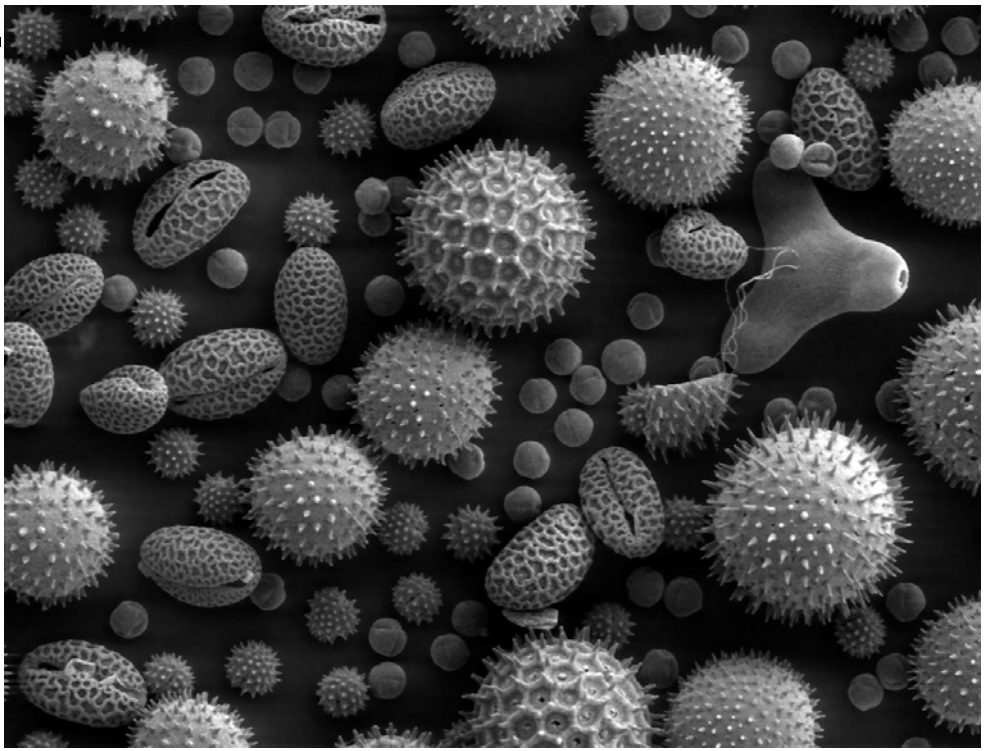
- By using a microscope!
- There are four types of microscopes:

  1. <u>Compound or Light Microscope</u>:

  uses compound lenses and light to magnify objects.

- 2. Stereo or Dissecting Microscope: has two eyepieces to allow for binocular viewing of larger objects.

- 3. Scanning Electron Microscope: uses electron beams to magnify objects up to two million times.

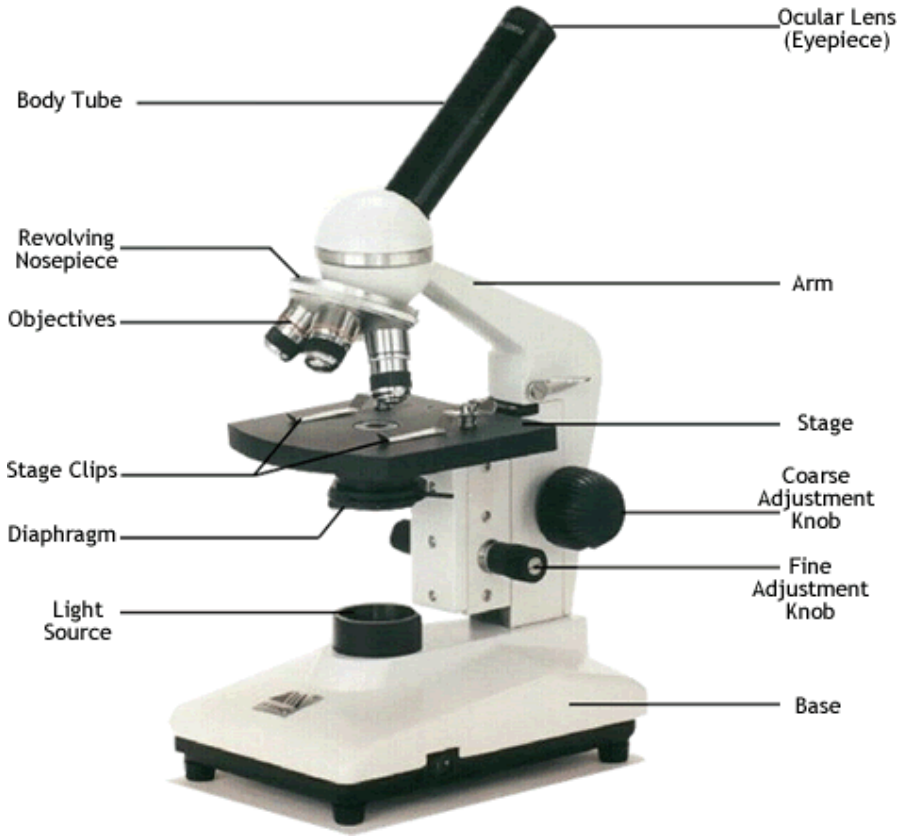


http://en.wikipedia.org/wiki/Scanning_electron_microscope

- 4. Transmission Electron Microscope: uses a beam of electrons that pass through a thin sample to create an image.

- How does a transmission electron microscope work?

Lab Time



How to make a wet mount slide.