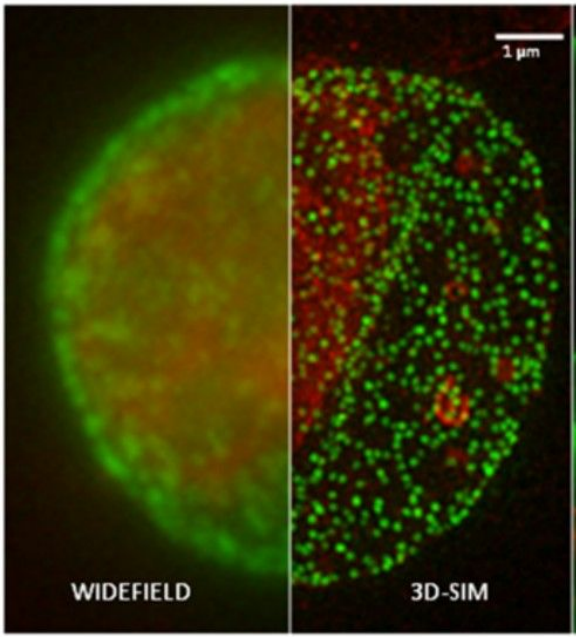
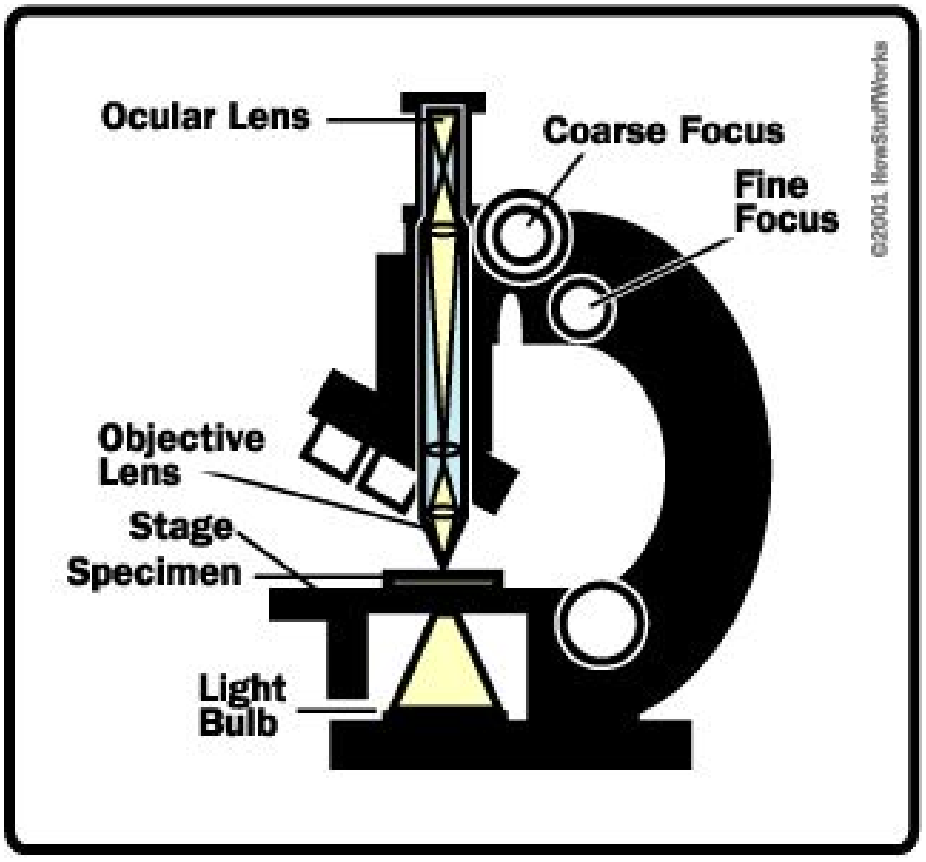
Looking at Cells (pg 61)

Resolution: How well a microscope can distinguish between two points that are close together



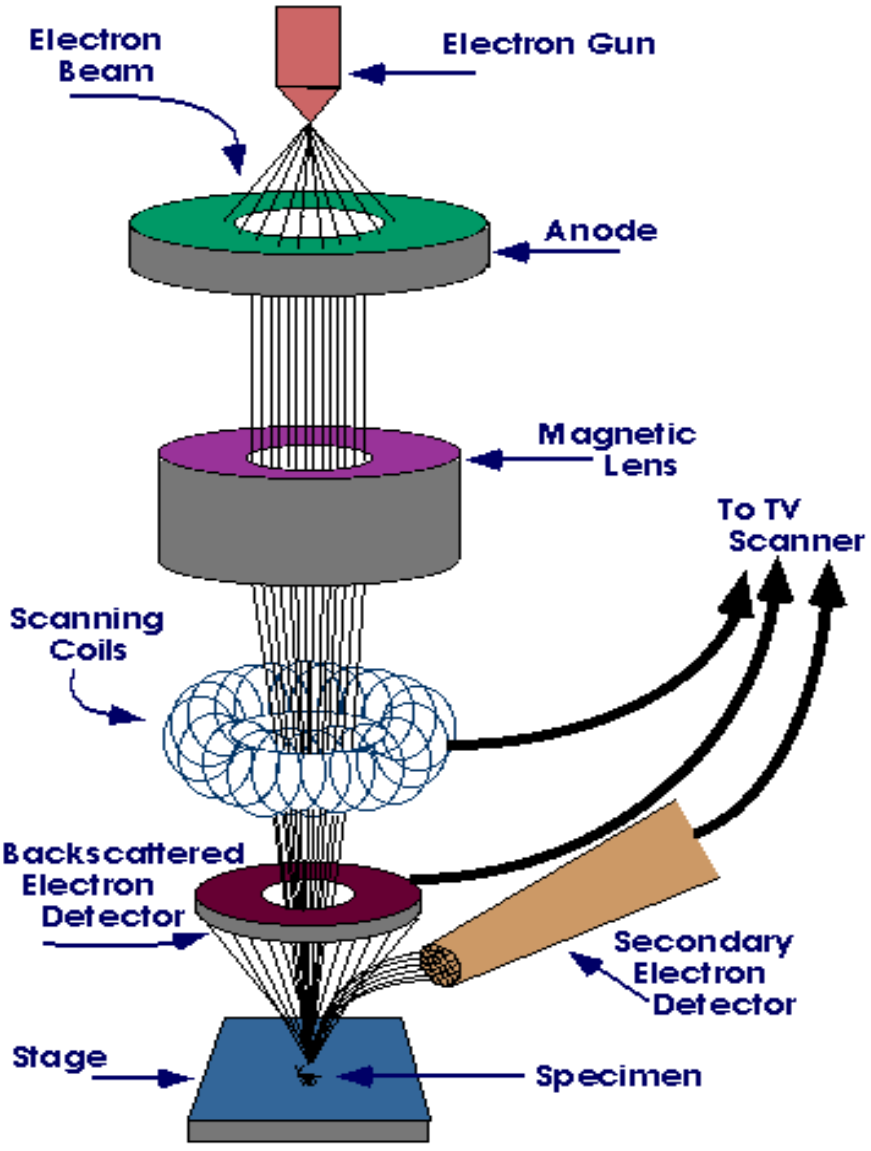
Light (Optical) Microscope

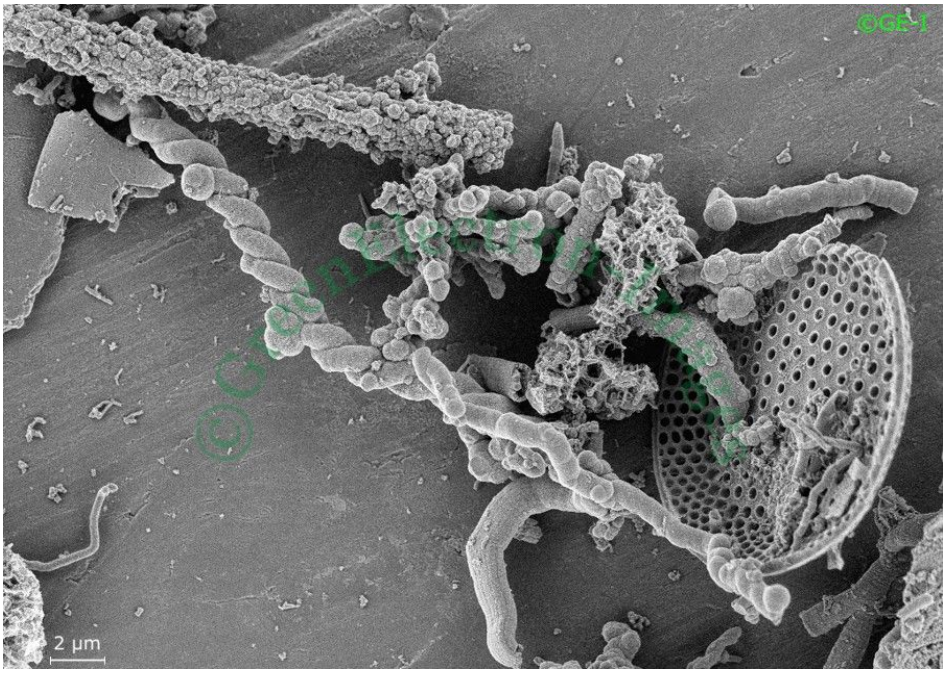


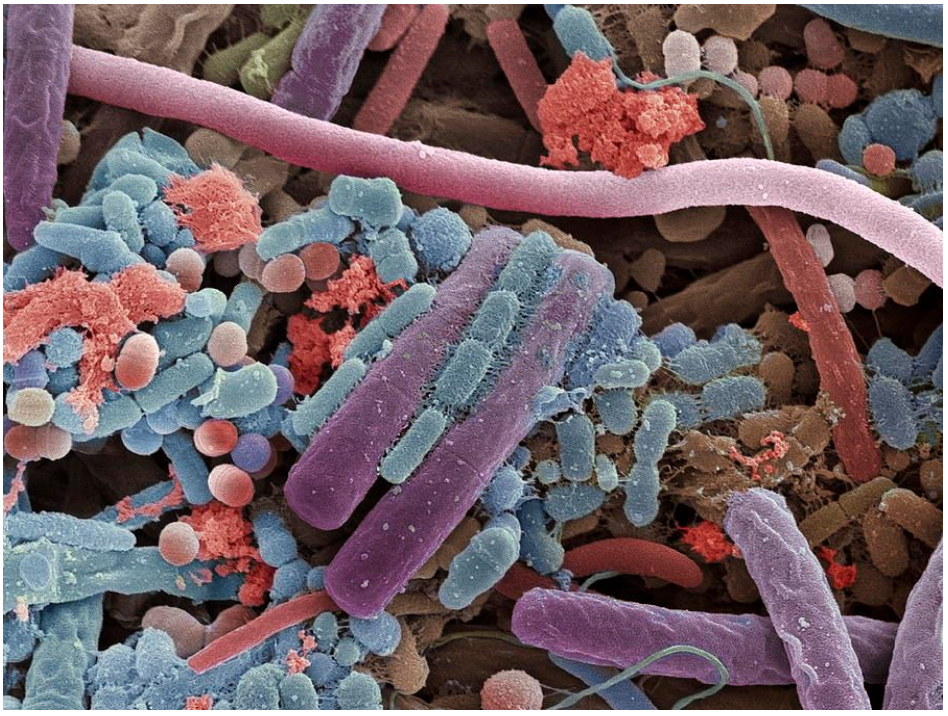
Pro: Can observe living specimens *in situ*

Con: Low resolution, 200 nm, difficult to see bacteria, impossible to see viruses

Electron Microscopes - Scanning Electron Microscope (SEM)




©GE-I
2 µm

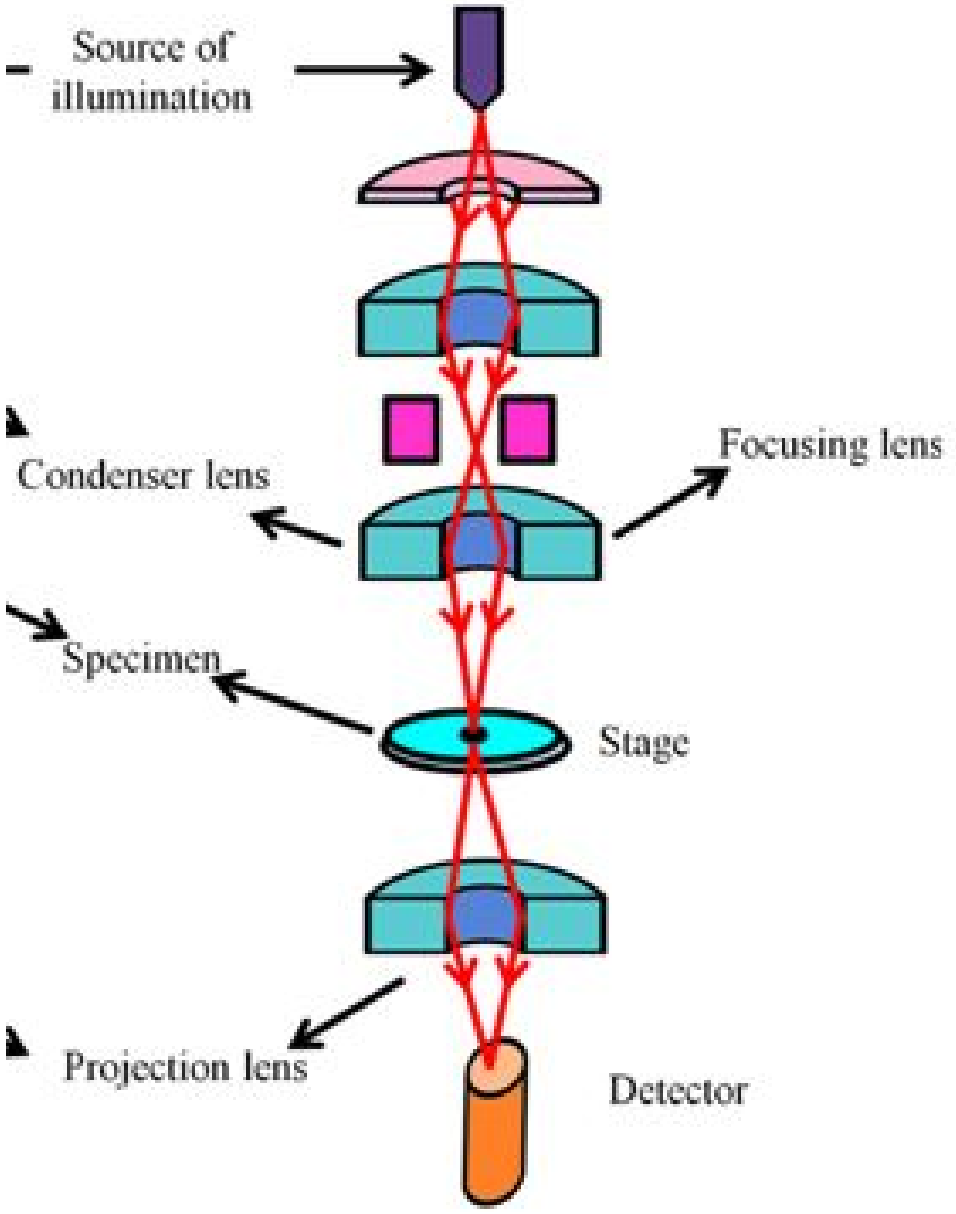


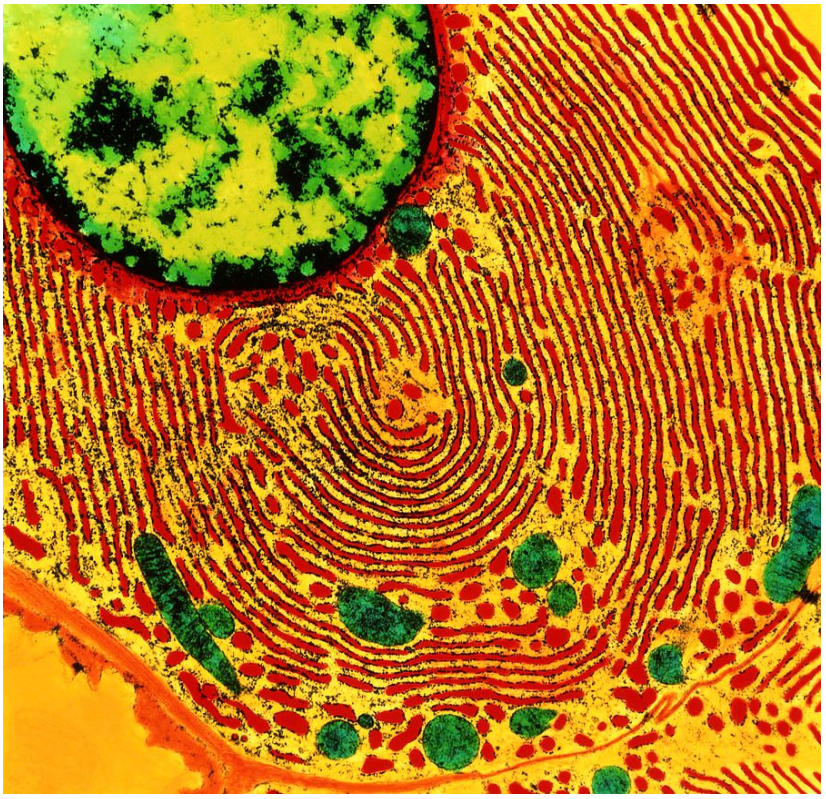
Pros:
3-D image
Surface structures can be observed
Does not need very thin specimens

Cons:
Low contrast
Specimen dried - loses shape
Vacuum needed

Resolution: 20 nm

Transmission Electron Microscope (TEM)





Pros:
Better contrast
Electrons pass through the sample
Internal details visible

Cons:
2-D image
Staining artefacts
Thin sample
Radiation Damage
Vacuum needed

Resolution: 0.1 nm