Microscopes

Jansen – first to create a compound microscope

Compound – more than one lens

Jansen's max magnification was only about 10X

Leeuwenhoek – born long after Jansen invented his microscope

Technical difficulties limited the magnification of compound microscopes to 20-30X

Developed the first simple microscope

Reached magnification of 200X

Was the first to view microscopic life in pond water

Single-celled organisms unheard of at the time; Leeuwenhoek had a difficult time convincing the scientific community that they exist

Hooke – created one of the best compound microscopes of his time

When studying thin slices of cork under his microscope, he noticed small compartments – he called them "cells." Since he was already well known in the scientific community, the term stuck and is why we use the term to describe the compartments in organisms.

… 300 years …

Electron microscope – much more sophisticated, huge magnification – up to 1,000,000X magnification

Scanning electron microscopes – provides a detailed surface image of the specimen

Transmission electron microscopes – provides a look into the cell/organism

Electron microscope drawback – inability to observe living organisms

We will use a compound light microscope in class

Using microscopes in class

Identify parts

Cover – protects; always put back after using microscope

Arm and Base – hold both parts for carrying

Stage

Coarse adjustment knob

Fine adjustment knob

Revolving nosepiece

Objective lens

Stage clips

Ocular lens – the 10X lens at the eyepiece

Determine total magnification – multiply the ocular lens magnification by the objective lens magnification.