

## Guided Notes - Scientists, Microscopes, Cell Theory

In a 200 year span, various scientist research the microscopic world of cells.

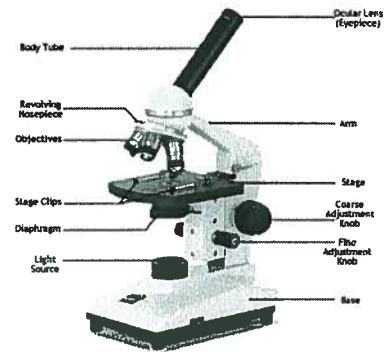
### Scientists who Contributed to the Cell Theory

Robert Hooke	Anton VanLeewenhoek	Matthias Schleinden	Theodor Schwann	Rudolf Virchow
1665 discovered cells	Made and used microscopes	In 1838 concluded plants are made of cells	concluded Animals are made of cells	In 1855 cells come from other cells (pre-existing)

### Cell Theory

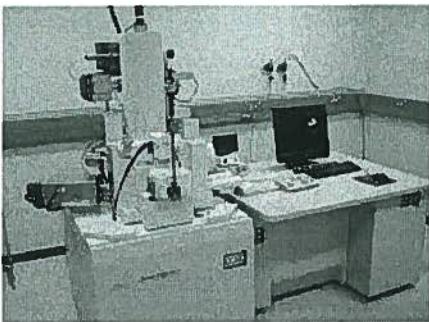
- there is data and research to support this theory.

1. All living things are made of one or more cells
2. Cells are the basic unit of structure & organization
3. Cells come from other pre-existing cells (Pass on genetic material)



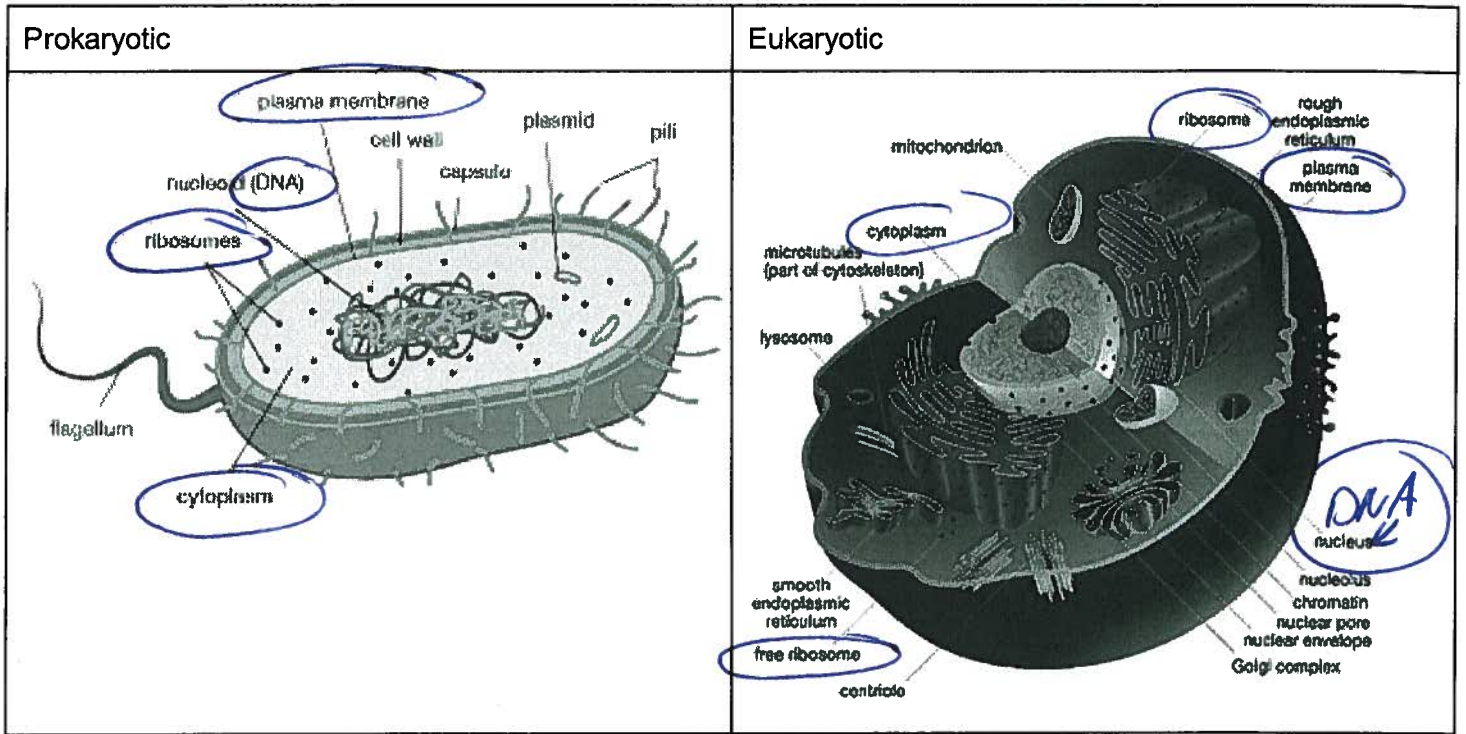
### Microscopes:

Type	Components/how it works	Maximum Magnification	Disadvantages
Compound Light	lenses & light	1000x	low resolution (blurry)
Transmission Electron	magnet beam & electrons → slice	500,000x	dead specimen (slices)
Scanning Electron	magnet beam & electrons → surface	500,000x	non-living
Scanning Tunneling Electron	Electron tunnel	500,000x	3D live specimens



← Can see to the atom level

## TWO TYPES OF CELLS



### Basic Cell Types:

	<i>Large</i> <b>EUKARYOTE</b>	<i>Small</i> <b>PROKARYOTE</b>
<b>Nucleus</b>	Yes	No
<b>Genetic Material (DNA)</b>	Yes <i>linear &amp; in nucleus &amp;</i>	Yes <i>Circular "Plasmids" ○</i>
<b>Organelles</b>	Yes <i>membrane bound</i>	<i>only ribosomes</i>
<b>Cell Membrane</b> <i>"Plasma"</i>	Yes	Yes
<b>Cytoplasm</b> <i>aka "Cystal"</i>	Yes	Yes
<b>Examples</b>	<i>Plants, Animals, Fungus, algae</i>	<i>Bacteria</i>

**BOTH** type of cells have the following structures:

1. DNA (Genetic material)
2. Ribosomes
3. Cytoplasm
4. Plasma/cell membrane