

1.1 Discovering Cells

(as students share their notes, record the page number)

What are cells? (pg 4 -5)

- Cells = basic unit of structure and function for living things
- Cells involved in all functions
- Functions = process that cells need to live, grow and reproduce
- Structures = cells put together, what a living thing is made up of
- Structure of a cell fits its function

What is the cell theory? (pg 6)

- 1590 = invention of first microscope
- Microscopes led to development of cell theory
 - It makes small things look larger
- Cell theory is relationship between cells and living things
- Robert Hooke = invented own microscope, looked at piece of cork and saw small holes, which is called cells
- Leeuwenhoek = first to see living cells, called these animalcules, meaning “little animals”

What the cell theory says? (pg 7)

- The cell theory states:
 - All living things are composed of cells
 - Cells are basic units of structure and function in living things
 - All cells are produced from other cells
- Schleiden = found that all plants come from cells
- Schwann = found that all animals come from cells
- Virchow = all cells come from cells

How do microscopes work? (pg 8)

- How microscopes work = focus light through lenses to produce a magnified image
- Two properties of microscopes are: magnification and resolution
- Magnification = things appear larger than they are
- Magnifying glass has convex lens – has center that is thicker than its edge
 - Light through convex lens is magnified

Compound Microscopes (pg 9)

- Compound microscope can magnify more than a single lens
- Total magnification = magnification of the eye piece lens and the nose piece lens multiplied together
- Compound microscope uses two lenses

Measuring Microscopic Objects and Resolution (pg 10)

- Use metric ruler to measure size of circular field
- When you look at color under a microscope, you see individual dots
- Resolution = degree to which two separate structures can be distinguished
- Better resolution = more detail

Electron Microscope (pg 11)

- Electron microscopes = used a beam of electrons to produce a magnified image
- Better magnification and resolution than light microscopes
- Can see smaller objects than light microscopes