**Scientists**

Matthias Schleiden – He concluded that all plants were composed of cells

Rudolph Virchow – He concluded that all cells come from existing cells

Anton van Leeuwenhoek – Observed pond water under a microscope and saw a world of tiny living microorganisms

Theodor Schwann – Concluded that all animals were composed of cells

Robert Hooke – Came up with/Coined the term cell

**Organelles**

Cytoplasm – jelly-like substance that occupies the space outside of the nucleus. Holds organelles in place

Nucleus - Control center of the cell

Nuclear Envelope - Surrounds and protects the nucleus

Nuclear Pores - Openings that allow materials to come in/out of the nucleus

Chromatin - Consists of DNA bound to protein, granular material

Chromosomes - Contains all of the genetic material/information of the cell

Nucleolus - Makes ribosomes

Ribosomes - Makes proteins

Rough ER - Is covered in ribosomes, involved in protein synthesis

Smooth ER - Synthesizes (makes) the lipid components of the cell membrane

Golgi Apparatus - Packages, sorts, and modifies proteins

Lysosomes - Breaks down lipids, carbohydrates, and proteins

Vacuole - Responsible for storage of materials, plants have a large one

Mitochondria - Converts chemical energy stored in food to useable energy

Chloroplasts - Captures energy from sunlight and converts it to energy

Cytoskeleton - Gives the cell its shape and structure

Centrioles - Organizes cell division