



The Atom

Atom – (from Greek Atomos “not cut”)

*Smallest part of an element.

*Retains the properties of the element.

Element redefined – A substance composed of 1 kind of atom.

1. **Model** – A way of representing an object or idea. Atoms are too small to observe so models are used.

2. Solid Sphere Models

*John Dalton (1803) everything made of different solid spheres

*J.J. Thomson (1891) spheres are a ball of positive charge with negative particles embedded in it.

(Plum Pudding Model) sea of (+) pudding with (-) plums

3. Nuclear Models

*Ernest Rutherford (1911) (+) dense core with (-) charges orbiting around the center. (cathode ray tubes)

*Niels Bohr (1913) A very dense (+) center core with very small (-) charges orbiting around it.

4. Present Model

*atoms have a (+) dense central core surrounded by (-) charges

*negative charges move so fast position is not pinpointed.
(like a fan blade location is in a region or cloud)

| | | | | |
|-----------------|---|--------------------|-----|------------------|
| Atom | = | (+) nucleus | and | (-) cloud |
| “no net charge” | | central core | | outside region |
| | | “most mass” | | “little mass” |
| | | protons | | electrons |
| | | neutrons | | |