Atomic Models

Dalton's Atomic Theory of Matter:

- All matter is made up of tiny particles called atoms
- Each atom is a solid particle with no spaces
- Atoms cannot be made or destroyed.

Niels Bohr's Model of the Atom:

- Mass of an atom contains protons.
- Electrons are arranged in definite energy levels
- Electron shells are a long way from the nucleus.

Democritus: uses term "atomos" to describe particles which cannot be subdivided

Bohr (1913): proposed that electrons occupy energy levels around the nucleus

Dalton (1808): defined atoms as indivisible particles; all atoms of the same element are identical; atoms react with each other to give molecules

Chadwick (1932): discovers neutrons

460BCE — 300BCE — 1600 — 1700 — 1800 — 1900 — 2000

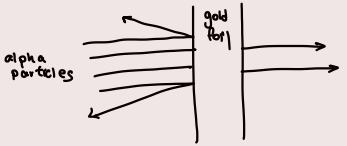
Aristotle: all matter is made from 4 elements: earth, air, fire and water

Bayle (1660): matter is made up of identical particles which cannot be subdivided

Goldstein (1876 and 1886): cathode ray tube experiments reveal existence of positive and negative particles within the atom

Rutherford's Model of Atomic Theory

- The atom consists mainly of space.
- The mass of an atom is concentrated in the nucleus (positive), which is a small core at the centre of the atom.



Rutherford (1911): nearly all of the mass of an atom is concentrated at the positively charged nucleus. Described positively charged particles as protons, and defined atomic number.