Aristotle: 460-370 BCE

World is made of 4 Elements
- Earth
- Fire
- Water
- Air

Democritus 460BCE-370BCE

Introduced the Atom
atomos = invisible
"Matter is made out of tiny, invisible particles"

No evidence = Not scientific
John Dalton
1803
English Chemist
School teacher

“Elements” = tiny particles (atom)

- Atoms of 1 type of element are all identical
- Each element has distinct atoms

John Dalton
1803 - English Chemist
School teacher

Elements = tiny invisibly small particles called atoms

- Atoms of the same element are identical [Copper is always copper]
- Atoms of different elements are different [Copper ≠ Iron]
Observation: when electricity passes through a gas, the gas gives off particles that are too small to be atoms.

Negatively charged particle that is smaller than an atom = Electron

Atom

Plum Pudding model

Ernest Rutherford
1911 - New Zealand Physicist

Atoms are mostly empty space

Most of the mass is located in the center, which is + charged

electron - charge

nucleus, + charge
Neils Bohr
1913 - Danish Physicist
(Rutherford's student)

- Organizational Model
  For electrons
  Energy Levels/Obltials
  pockets/rings where
  electrons hang out

  electron, -charge

  nucleus, + charge

Erwin Schrödinger
1926

Austen

Werner

Heisenberg
1927

German

Electron Clouds
Areas around a nucleus where
electrons are most likely to be
(probability)

- electrons - charge

Uncertainty Principle
It is impossible
to know the exact
location and velocity of a
particle at the same time.

Protons: + charge

Neutrons: neutral charge
Reading a Periodic Table

Atomic Symbol: C
Atomic Name: Carbon
Atomic Number: 6
Atomic Mass: 12.011

Mass Number: The mass of a particular atom
= # of protons + neutrons in an atom

= The average mass of Carbon Atoms
= mass of the nucleus
= # of protons and neutrons in the nucleus of the atom