

Aristotle: 460-370 BCE

World is made
of 4 Elements

- Earth
- Fire
- Water
- Air



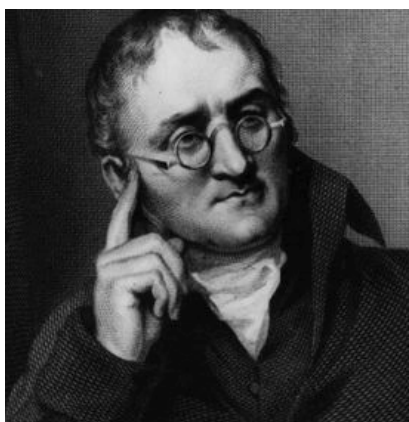
Democritus
460 BCE - 370 BCE

Introduced the Atom

atomos = invisible

"matter is made out
of tiny, invisible
particles"

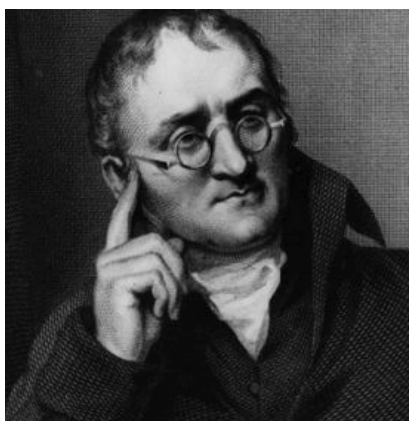
No evidence = Not scientific



John Dalton
1803
English Chemist/
School teacher

"Elements" = tiny particles (atoms)

- 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 \neq Iron)

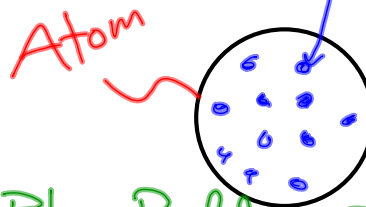


JJ Thompson

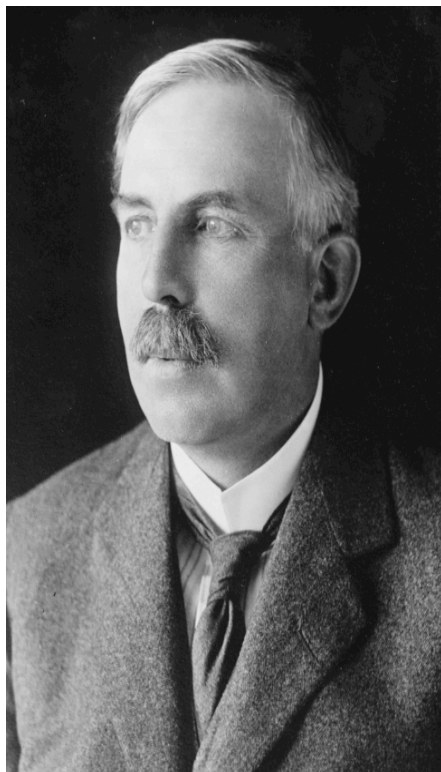
1897 - English Physicist

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



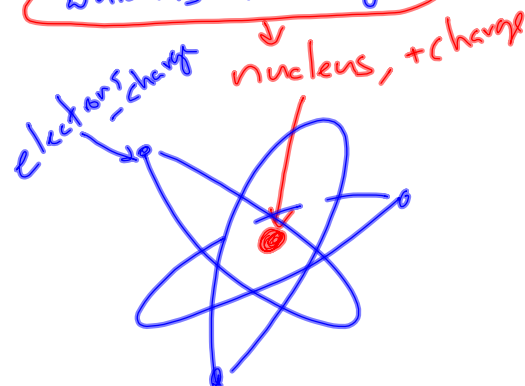
Plum Pudding model

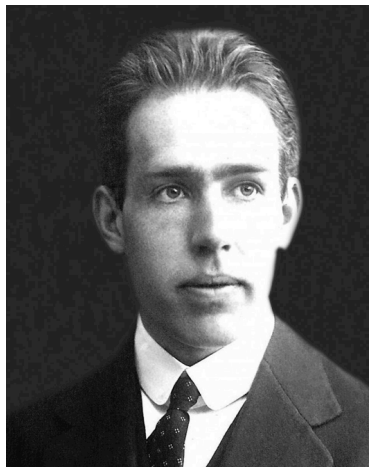


Ernest Rutherford

1911 - New Zealand Physicist

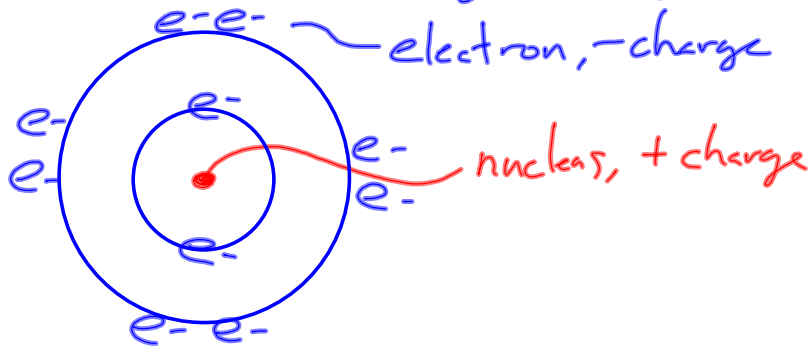
- Atoms are mostly empty space
- Most of the mass is located in the center, which is + charged





Neils Bohr
1913 - Danish Physicist
(Rutherford's student)

- Organizational Model
for electrons
Energy Levels/Orbitals
packets/rings where
electrons hang out



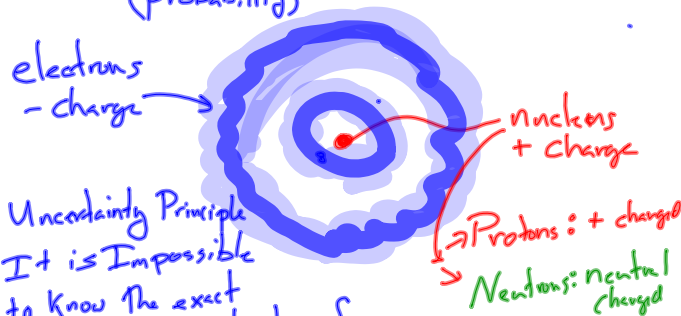
Erwin
Schrödinger
1926
Austrian



Werner
Heisenberg
1927
German

Electron Clouds

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



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

Reading a Periodic Table

Atomic
Symbol

Atomic
Name

6
C
Carbon
12.011

Atomic
Number

= Number of
protons in the atom

Atomic Mass

= The average mass
of carbon atoms
= mass of the nucleus
= # of protons and
neutrons in the
nucleus of the atom

Mass Number

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