

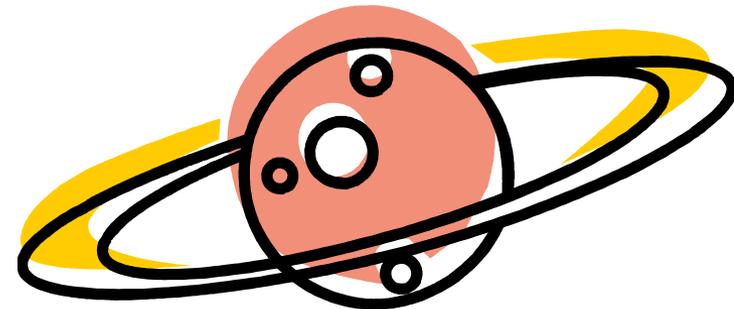
# ORBITALS – WHERE THE ELECTRONS LIVE

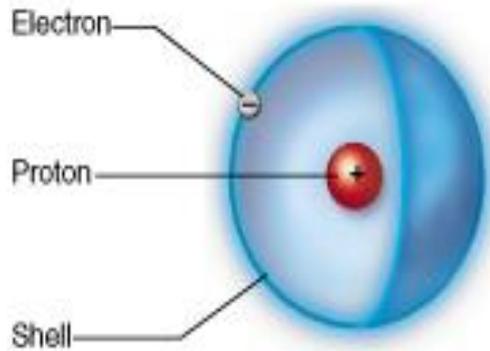


# Niels Bohr

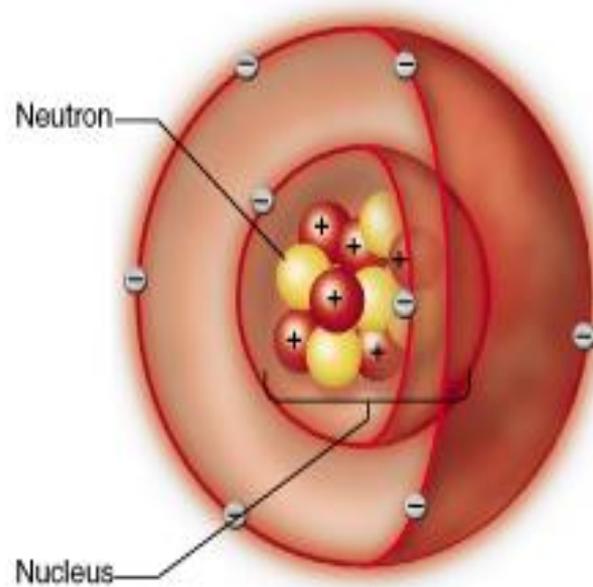
# Electrons orbit nucleus

- When: 1913
- Where: England
- What: **Electrons “orbit” the nucleus**  
in “rings”
- Why: Bohr was trying to show why the negative electrons were not sucked into the nucleus of the atom.

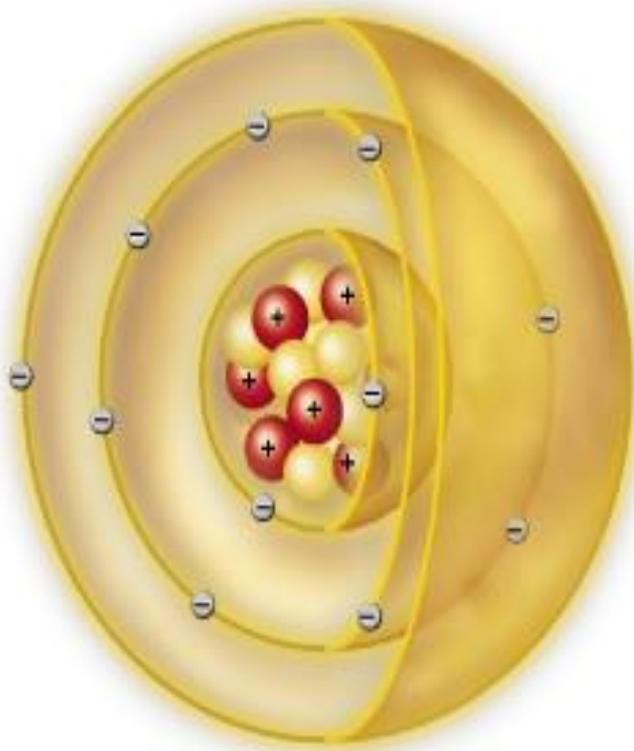




**(a) Hydrogen**  
1 proton



**(b) Oxygen**  
8 protons  
8 neutrons  
8 electrons  
in 2 shells



**(c) Sodium**  
11 protons  
11 neutrons  
11 electrons  
in 3 shells

# Electron Cloud Model

- Electrons travel around the nucleus in **random** orbits.
- **Cannot predict exactly where** they will be at any given moment.
  - Can predict the **MOST LIKELY** place
    - **Orbitals – probability clouds**

Hydrogen Atom Electron Cloud Model

