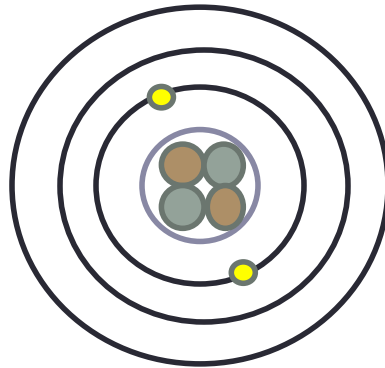


# ATOMIC STRUCTURE

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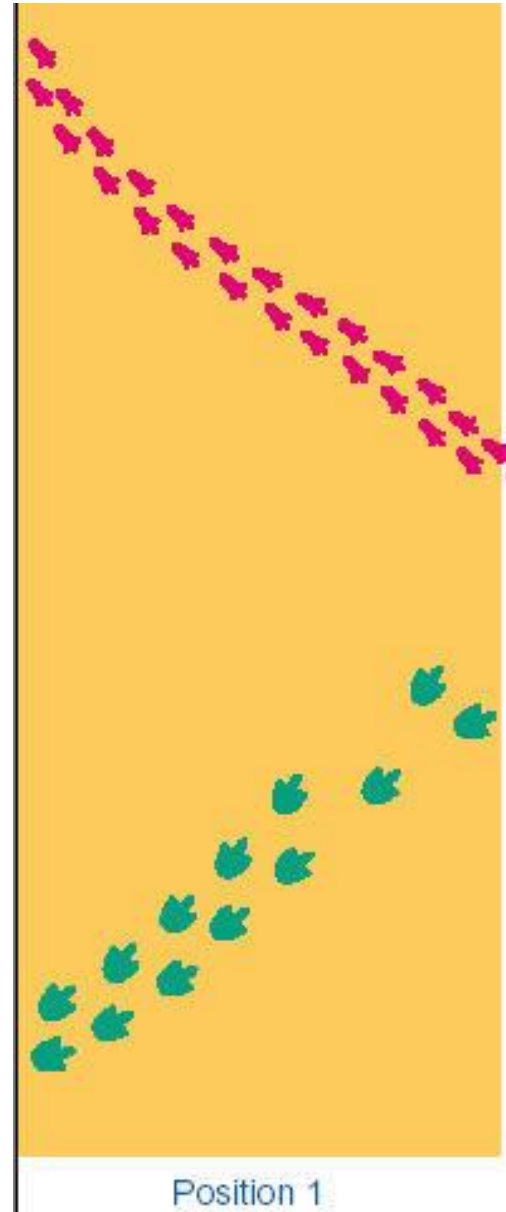


# Inference Activity

- You are an archaeologist and have discovered a set of fossil footprints and will come up with an explanation for the event that **MAY** have occurred.

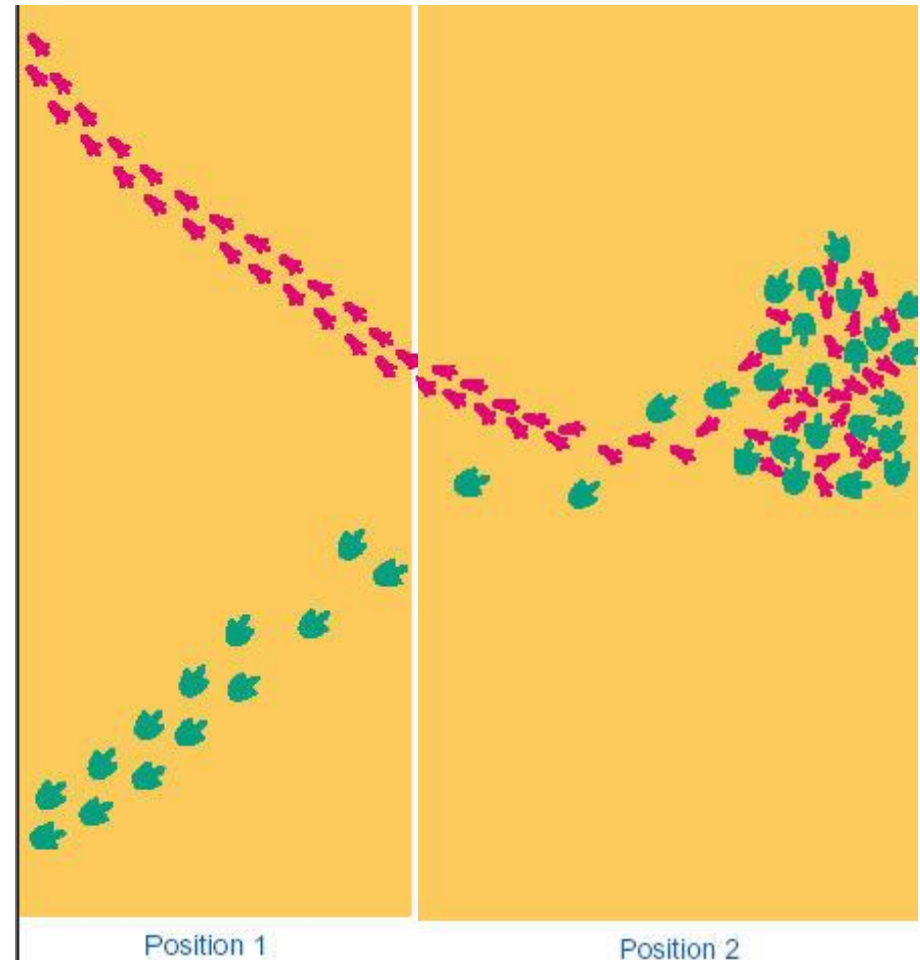
# Inference Activity

- Make a list of observations about these prints.
- Write a short (1-2 sentences) story about what you think could have happened.



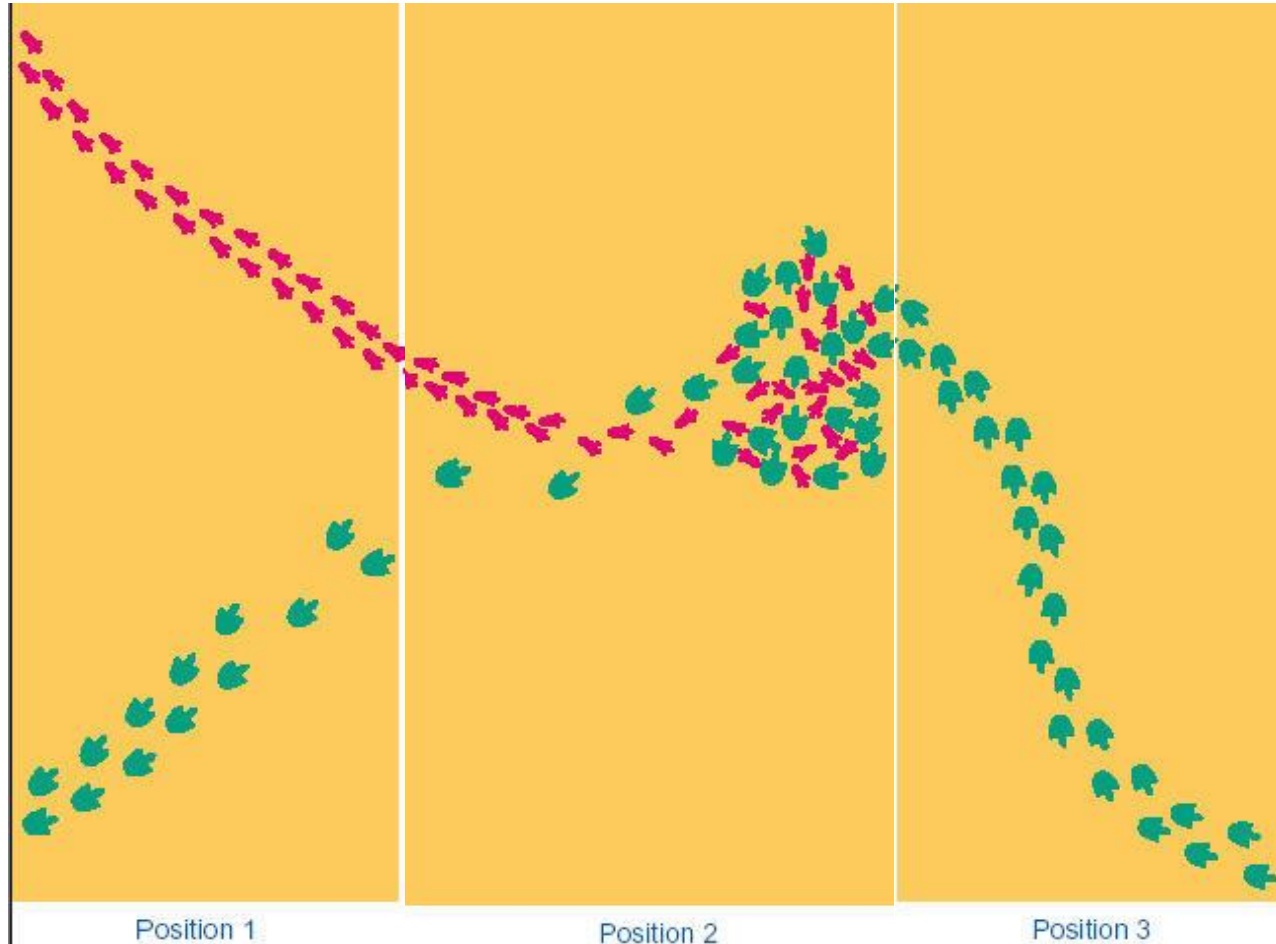
# Inference Activity

- Add to your list of observations.
- Develop your story.



# Inference Activity

- Add more to your list of observations.
- Develop your story again.



# Inference Activity Wrap Up

- Why was this an important activity?
- What did this show?
- Does this apply to Chemistry?

# History of the Atom Timeline

Democritus 460 BC  
and Dalton 1803 AD



Thomson  
1897



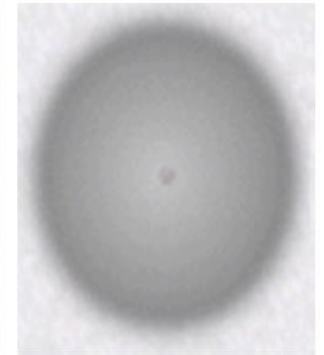
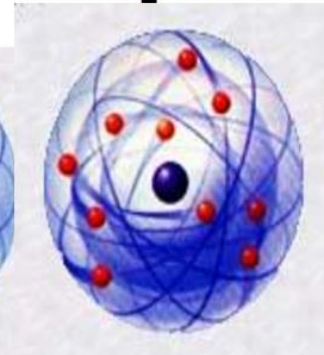
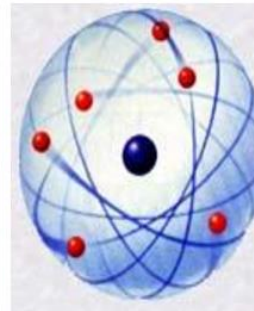
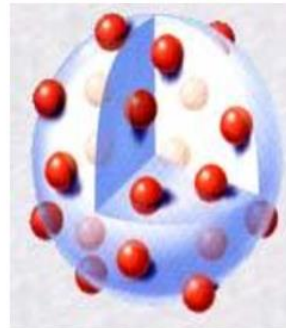
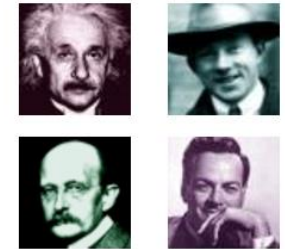
Rutherford  
1912



Bohr  
1913



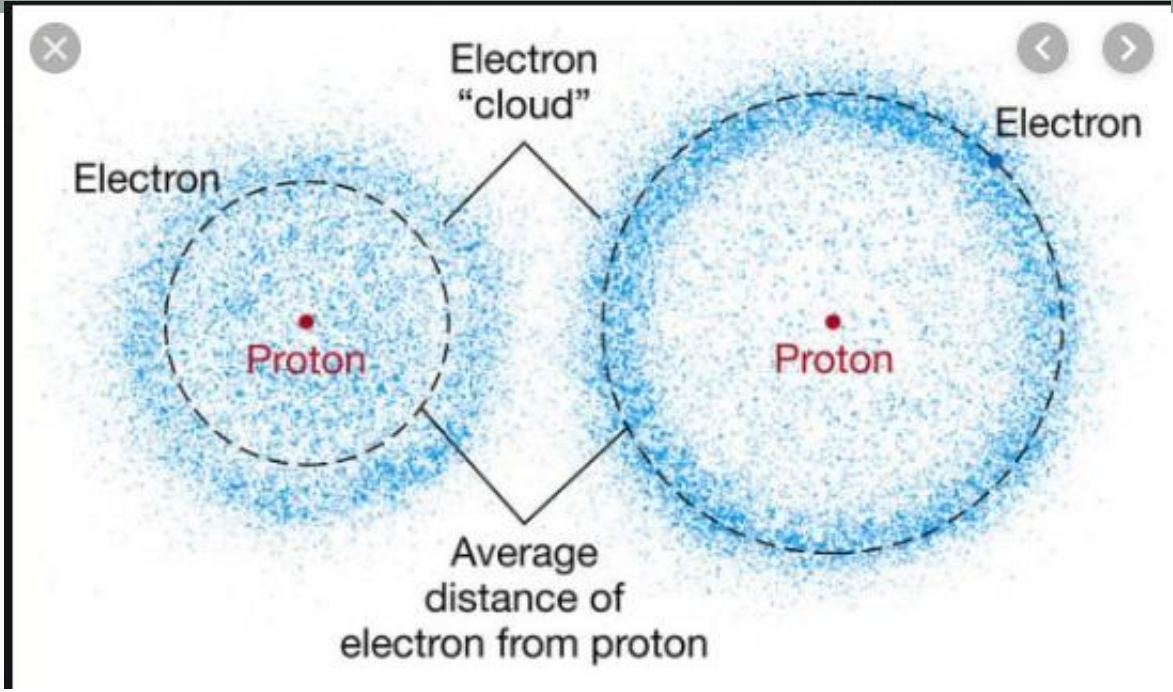
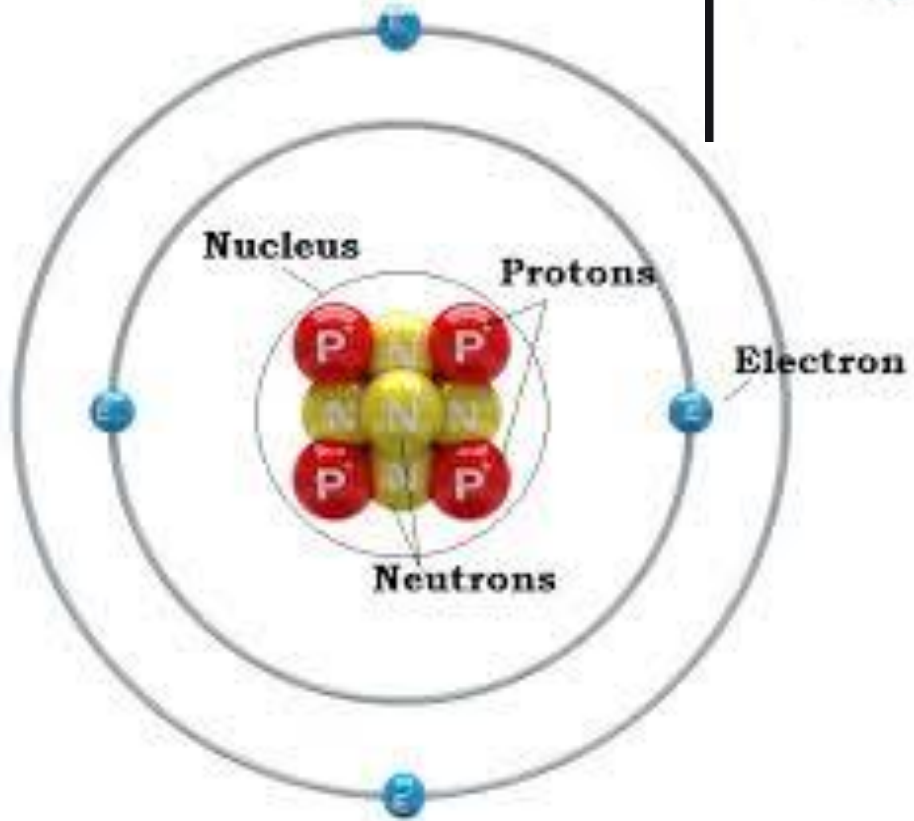
Modern  
Quantum  
Cloud Model  
post 1930



# Subatomic Particles

Particle	Symbol	Charge	Location
Proton	$p^+$	1+	Nucleus
Neutron	$n^0$	0	Nucleus
Electron	$e^-$	1-	Electron Cloud





# Atom Identification

- Atomic Number:  
number of protons

6

- Symbol

C

- Name

Carbon

- Average Atomic  
Mass: mass of atom

12.01

# Nuclear Fission and Fusion

- **Fusion**: Combining two light nuclei to form a heavier, more stable nucleus
- **Fission**: Splitting a heavy nucleus into two nuclei with smaller mass numbers

# Fusion Reactions

- Produces tremendous amounts of energy
- The sun produces large quantities of energy from the fusion of protons to form helium

# Half Lives (HONORS ONLY)

- If the half-life of a 100.0 gram radioactive substance is 8 years, how many half-lives does it go through in 32 years?
- In the previous example, how much remains of the sample after 32 years?