

# Atomic Models

A brief history of atomic theory



- <http://ed.ted.com/lessons/the-2-400-year-search-for-the-atom-theresa-doud>  
– 5 minutes

**Or**

- <https://www.youtube.com/watch?v=thnDxFdkzZs>  
– 10 minutes

# Democritus (460 B.C. - 370 B.C.)

- Believed that everything is made of tiny particles called atoms
  - They come in different shapes
  - They can not be destroyed

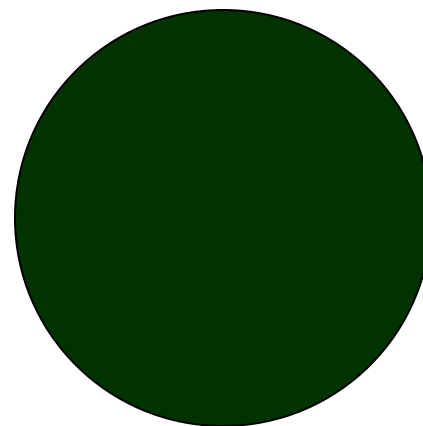




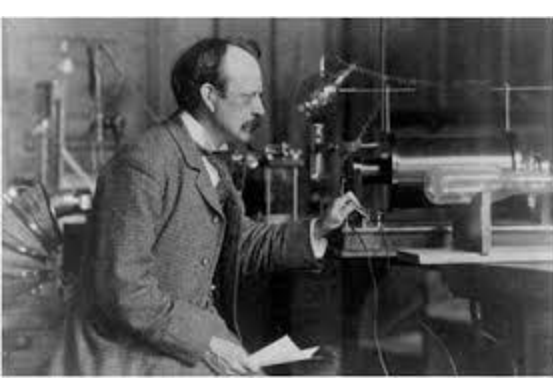
# John Dalton (1766 - 1844)

- Studied the ratios in which elements combined.
  - Atoms of the same element are identical.

## Dalton Model

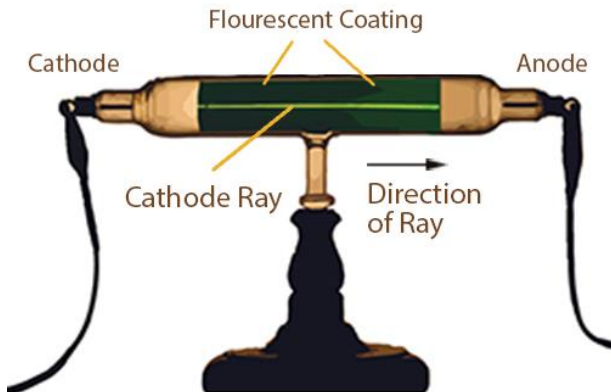


Solid sphere with no internal structure

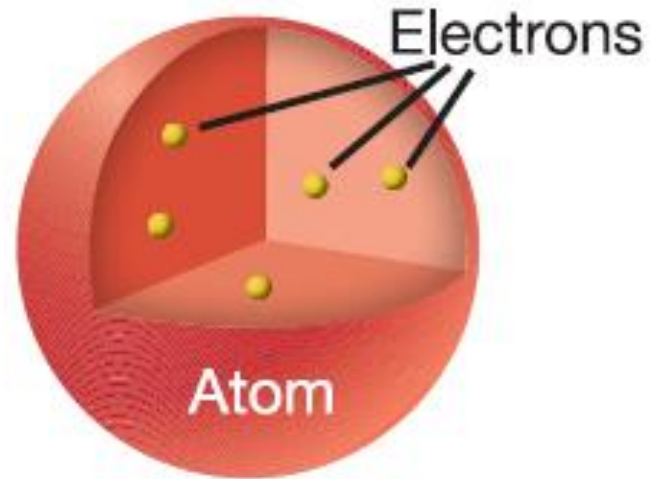


# J.J. Thomson (1856-1940)

- Discovered the electron
- Passed an electric current through gas in a sealed tube.



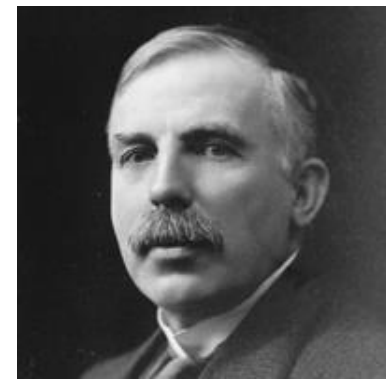
Thomson's original  
(incorrect) model



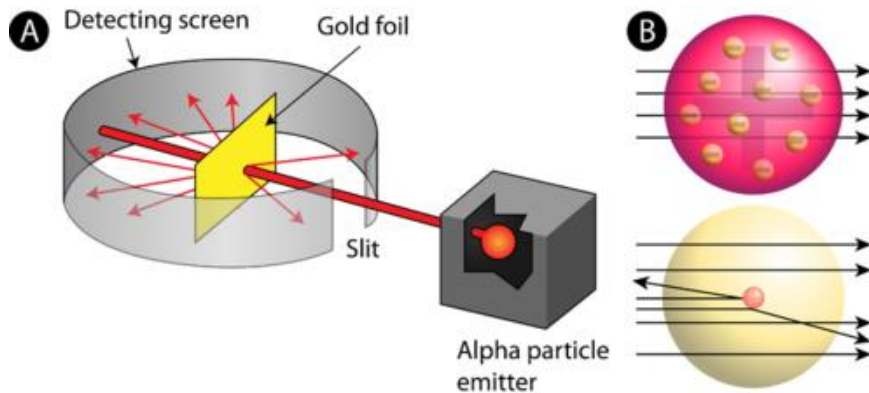
Electrons sprinkled in a  
sphere of positive electrical  
charge



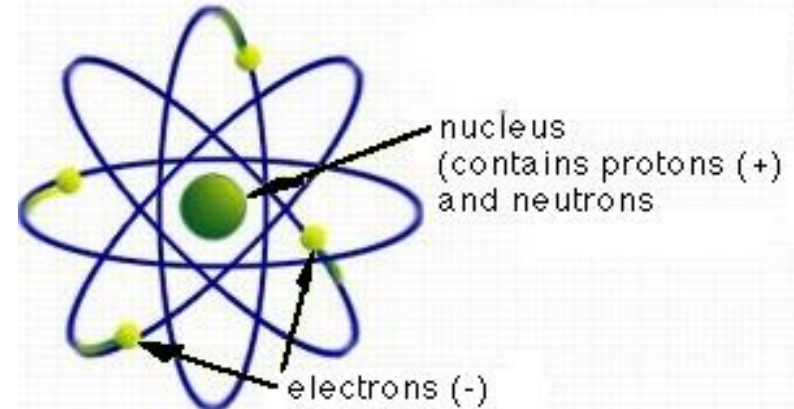
# Ernest Rutherford (1871-1937)



- Discovered the nucleus using the gold foil experiment.



## Rutherford Model



Positively charged nucleus with electrons circling around the outside.



# Niels Bohr (1885-1962)

- Made improvements to the Rutherford model to include energy levels of electrons.

