

Atomic Theory

Democritus

- With _____, they thought that matter cannot be divided _____.
- Proposed the existence of indestructible, indivisible particles called _____.

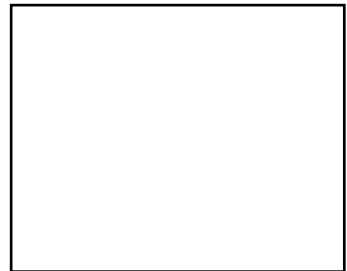


Dalton

- British chemist, physicist, meteorologist
- Proposed the first “modern” atomic theory in 1803
- Dalton’s atomic model: _____

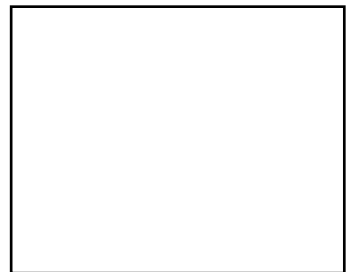
• 5 Points to Dalton’s Theory

- All matter is made of tiny _____ particles called atoms.
- Atoms cannot be _____ or _____.
All atoms of a particular element are _____.
- _____ are formed through the combination of elements.
- Chemical _____ involve atoms _____ to form new substances.



Thomson

- Identified charged particles that were much _____ than the tiniest atom and came from within the atoms of a metal electrode
- These “_____” particles were called electrons and led to the _____



Rutherford

- Rutherford proposed that a beam of alpha particles should have enough energy to pass through a thin gold foil
- The experiment initially seemed work
- Rutherford's Conclusions
 - The _____ charge is in a very dense positive core.
 - Most of the atom is simply _____
- Rutherford proposed a new model called the _____ due to its resemblance to our solar system.



Bohr

- 1. Electrons can only occupy certain discrete orbits or _____ levels.
- 2. Electrons can exist in an energy level without losing _____.
- 3. Electrons _____ or _____ energy only when they change their energy levels.
- Bohr's _____ (energy levels) can only hold a certain number of electrons (_____)
- When an _____ orbit is filled, electrons occupy orbits further from the nucleus
- Bohr's shell model finally explained the structure of the Periodic Table, which had been published in 1869!



Chadwick

- In 1932, Chadwick experimented with a new type of radiation emitted from beryllium
- The particle had no charge but almost the same mass as the proton; he called these particles _____

