REVIEW

Chapter 4 : Lesson 4A+B

1. **Over thousands of years, many scientists contributed to the development of the Atomic Theory. Place the following "contributions" in a timeline, starting with the earliest :**

Start of the Atomic Theory :

Atomic Theory today :

2. **Match up the Scientist with the correct Model (not all the Scientists will be used) :**

James Chadwick

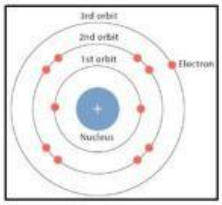
Niels Bohr

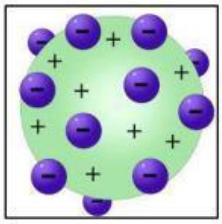
John Dalton

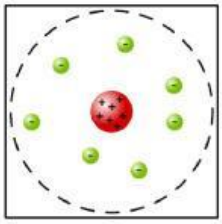
Ernest Rutherford

J.J. Thomson

Democritus

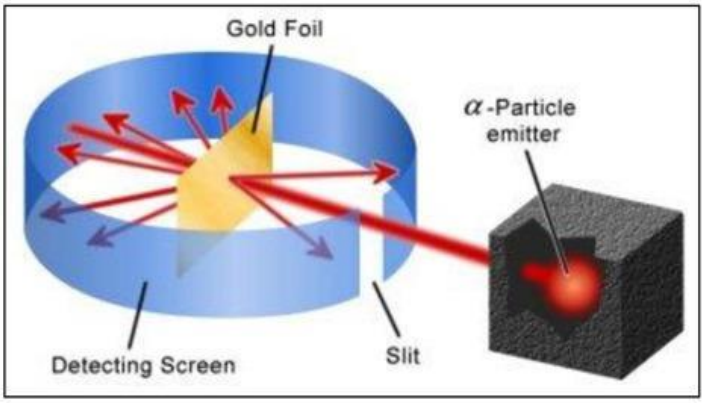






LIVEWORKSHEETS

3. **Ernst Rutherford's "Gold Foil Experiment" was a pivotal moment in the history of atomic physics. He used a radio-active source to bombard a thin Gold foil with a beam of positively charged particles, called alpha particles. He used Gold since it is the most malleable metal that can be made into an extremely thin "sheet" or foil. The setup was enclosed in a curved Zinc Sulfide screen. When an alpha-particle would strike the screen, it would produce a small flash of light. This would enable Rutherford to observe their scattering patterns.**



During this experiment, Rutherford made 2 very important observations which led to 2 very important conclusions. Match them up correctly :

OBSERVATION 1 : Most alpha-particles passed straight through the gold foil undeflected.

CONCLUSION : Atoms are mostly empty space. This is where Electrons orbit the nucleus.

OBSERVATION 2 : A few of the alpha particles were deflected at very large angles, and even bounced back.

CONCLUSION : An atom has a small, dense, positively charged region at its center where almost all of its mass is concentrated. This was called the "Nucleus".

LIVEWORKSHEETS

4. Drag & Drop each of the following items into the correct "Model" :

All electrons orbit the nucleus in specific Energy Levels.	Discovered that atoms of different Elements are different.	Devised by J.J. Thomson.
Particles with a "–" charge are embedded in a "+" charged sphere.	Atoms are tiny, solid spheres that cannot be created or destroyed.	Postulated that atoms are "neutral" and "divisible".
Devised by Niels Bohr.	Devised by John Dalton.	All electrons exist in Orbitals situated around the nucleus.

Solid Sphere Model

Planetary Model

Quantum Mech. Model

Plum Pudding Model

LIVEWORKSHEETS