**Atomic Theory: A Theory of Revision**

**History:**

**Philosophers Democritus and Leucippus**

These two from ancient Greece thought about an item. Then they cut it in \_\_\_\_\_\_\_\_\_, then cut one of the halves in \_\_\_\_\_\_\_\_, then cut that in \_\_\_\_\_\_\_\_\_\_\_\_, and continued the process. They reasoned that there would be a piece so small, it would be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to cut it in half. They called it the \_\_\_\_\_\_\_\_\_(meaning indivisible). Then they suggested that all things are made of these indivisible pieces.

**Alchemist Hennig Brand (1669)**

Hennig Brand wanted to make \_\_\_\_\_\_\_\_\_\_\_. He saw that gold was a yellow colour and that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ was also a yellow colour. So he thought that there must be some gold in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. He collected a ton of \_\_\_\_\_\_\_\_\_\_ and boiled off the liquid. There was a white paste that could burst on fire in the air. His great contribution was his idea that some substances may be made of different \_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_pieces.

**Chemists & Physicists:**

**John Dalton (1766-1844)**

Credited with developing Dalton’s atomic theory. He suggested things are made of particles (like \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) and different elements have different particles.

**Dalton’s Atomic Theory**

* All matter is made of particles called atoms
* Atoms can’t be created, destroyed or divided into smaller particles
* All atoms of the same element are identical in mass and size, but are different from other elements
* Compounds are created when atoms of different elements link together in definite proportions

**JJ Thomson (1856-1940)**

Discovered electric currents were streams of particles (\_\_\_\_\_\_\_\_\_\_\_\_\_). He found that all substances made \_\_\_\_\_\_\_\_\_\_\_\_\_\_, therefore all atoms can be made of smaller particles. He suggested the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or Raisin-Bun model of the atom. This model imagines the atom is a round thing that has electrons mixed through it.

**Ernest Rutherford (1871-1937)**

Rutherford shot high energy particles at a thin \_\_\_\_\_\_\_\_ foil to try to prove the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ model correct. If the Plum-Pudding model was right, the particles would shoot \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the atom and only be deflected a little bit. Actually saw \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This implies a that there is a heavy \_\_\_\_\_\_\_\_\_\_\_\_\_ at the center of the atom.

**Niels Bohr (1885-1962)**

Bohr was working under Rutherford and was studying the area around the nucleus which is where \_\_\_\_\_\_\_\_\_\_\_\_\_ fly around. Niels Bohr studied the light coming from the area when he put energy into it. He found that each element put out very specific \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of light. He explained this by suggesting that the electrons just hang out on specific energy \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Structure:**

**Definitions:**

**Atom:**

An Atom is made of:

**Proton:**

**Neutron:**

**Electron:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Symbol** | **Electric Charge** | **Location in the Atom** | **Mass** |
| Proton |  |  |  |  |
| Neutron |  |  |  |  |
| Electron |  |  |  |  |

Example: A Carbon atom