**Chemistry Unit 3 Atoms and the Periodic Table Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Atomic History Worksheet**

**Complete the following Summary table with the contribution of each scientist and the Atomic Structure they were using: Logical bits of matter, Solid Spheres, Plum Pudding, Nuclear Model, Bohr Model or Quantum Mechanics**

|  |  |  |
| --- | --- | --- |
| **Scientists (Year)** | **Contribution** | **Atomic Model** |
| **Democritus (400 BC)** |  |  |
| **Boyle (1661)** |  |  |
| **Lavoisier (1789),**  |  |  |
| **Dalton (1805)** |  |  |
| **Thomson (1897)** |  |  |
| **Millikan (1909)** |  |  |
| **Rutherford (1909)** |  |  |
| **Bohr (1913)** |  |  |
| **Schrödinger, Heisenberg, Einstein, de Broglie, Born et al. (1915-1930)** |  |  |
| **Rutherford (1909);** **Chadwick (1932)** |  |  |

Use your chart to determine who is responsible for the following:

1. Stated that in a chemical reaction, atoms are combined, separated or rearranged \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Discovered the nucleus of the atom \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Stated that atoms of a particular element are all alike \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. First discovered there are particles smaller than an atom \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Stated that atoms of different elements combine in small whole number ratios \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. Discovered that atoms of each element contain a unique + charge in nuclei \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. Discovered the charge to mass ratio of the electron \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. Stated that atoms cannot be subdivided, created or destroyed \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
9. Discovered the neutral particle in the nucleus \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
10. Stated that atoms of one element are different from atoms of another element \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. Discovered the charge on an electron \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
12. First stated that all matter was made of indivisible atoms \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Complete the Atomic History Progress Chart

a) Complete the first three columns of the table for each of the proposals of atomic structure using the items in the list below. Some items may be used more than once. Some squares get two items.

b) When new experimental evidence is observed that disagrees with the past understanding, there are two possible responses. Modify the current theory, or propose a New theory. For the “Relation to past theory” column decide if the model is a New model or just Modified from the previous theory.

c) Sketch the fundamental picture of matter/reality that corresponds to each stage.

None. Used reason and logic.

Dalton

Collection of foundational observations.

Rutherford

Plum Pudding model

Nuclear model

Rutherford

Bohr Model

Aristotle

Scientific Method

Oil Drop Experiment

Democritus

Thomson

Quantum Mechanics

Schrodinger et. al.

Millikan

Optical Spectra

Atomic Theory

Boyle

Young’s Double Slit using electrons

Bohr

Gold Foil Experiment

Cathode Ray Tube