1897 – JJ Thomson

discovered the electron in experiments looking at electric discharge in a high-vacuum cathode-ray tube. He interpreted the deflection of the rays by electrically charged plates and magnets as evidence of "particles much smaller than atoms"

1896 – *Henri Becquerel* – Though fascinated by materials that exhibited phosphorescence, it was through experiments involving non-phosphorescent uranium salts that he gained his real notoriety. While experimenting with these materials, he discovered **natural radioactivity**. Through his experiment, he determined that the penetrating radiation came from the uranium itself, without any need of excitation by an external energy source.

1895 – Wilhelm Röentgen –

During an experiment, he noticed photographic plates near his equipment glowing. He discovered the glowing was caused by rays emitted by the glass tube used in his investigation. This tube contained a pair of electrodes. As electricity passed between the electrodes, **X-rays** were emitted and appeared on the photographic plates.

1887 – Svante Arrhenius

ACID = neutral compound that *ionizes* when dissolved in water and produces the H^+ ion and corresponding negative ion.

BASE = neutral compound that either dissociates or ionizes in water to give OH^- ions and a corresponding positive ion.

1806 - Gay-Lussac - Gay-Lussac's Law states that at constant volume, the pressure of a sample of gas is directly proportional to its temperature in Kelvin. He also provided us with the *law of combining volumes* - when gases react, the volumes consumed and produced, measured at the same temperature and pressure, are in ratios of small whole numbers.

1804 – John Dalton

Once again contributed to the chemical world and gave us the **Law of Multiple Proportions** – If the same two elements form more than one compound between them, then the combining mass ratios of the two compounds will NOT be the same.

1803 – *John Dalton* – Developed the first atomic theory which included the following ideas:

1) All matter is made of atoms. Atoms are indivisible and indestructible.

2) All atoms of a given element are identical in mass and properties

3) Compounds are formed by a combination of two or more different kinds of atoms.

4) A chemical reaction is a ***rearrangement*** of atoms.

1801 – John Dalton –

Dalton's Law (also know as Dalton's Law of Partial Pressure) states – The total pressure of a mixture of gases equals the sum of the pressures that each would exert if it were present alone. Mathematically this law is represented as:

$$P_{total} = P_1 + P_2 + \ldots + P_n$$

1793 – Joseph Proust

Best known as for his work on the Law of Definite Proportions.
This law indicates that chemical substance only truly combine to form a small number of compounds, each of which is characterized by components combining in fixed, whole number ratios.
We now know that some substances combine in multiple ways and make multiple compounds.

1787 – Jacques Charles

Scientist that determined that temperature and volume of a gas are DIRECTLY proportional at constant pressure

1784 – Charles-Augustin de Coulomb

He defined electrostatic force as the attraction and repulsion of "charged particles" and out of his law came the development of the essentials to the theory of electromagnetism. The SI unit of electric charge, Coulomb (C), is named to honor him.

1600 – William Gilbert

Gilbert's conclusions differentiated between magnetic attraction and electrical attraction (static electricity) and laid the groundwork for later discoveries about ELECTRICITY!!!