

7.1 Developing a Modern Atomic Theory

Remember an atom is the smallest piece of an element that still has the properties of that element. The original question of atoms started in ancient _____ .

The first real “modern” theory of the atom was proposed by _____. He imagined atoms as a smooth solid _____ without _____.

_____ Theory of the Atom (1808):

-All _____ is made of atoms, which are particles that are too small to see

-Each _____ has its own kind of atom, with its own particular _____

-All atoms of any one element are _____

-_____ are created when atoms of different elements combine in a specific ratio

-Atoms cannot be created, destroyed, or subdivided during chemical changes.

This was a great start, however it failed to explain electric charge in atoms. A new model of the atom was put together

by _____. It was known as the

“_____” theory because the atoms looked like a_____.

_____ **Theory of the Atom (1898):**

-Atoms contain _____

-_____ have a negative charge and very small mass

-The rest of the atom has a _____

-The electrons are embedded randomly in the positive part of the atom

-Electrons can be _____ or _____ atoms to create charged atoms

This was an improvement. However, a very clever scientist

named _____ discovered the nucleus of an atom, so the theory needed more revisions.

_____: centre of an atom with most of the atom's mass. Contains _____ and _____

_____: positively charged particle in an atom

_____: uncharged particle in an atom

_____: the “parts of an atom” includes proton, neutron and electron

_____ **Theory of the Atom (1911):**

-The _____ contains all the positive charge and most of the mass of an atom

-The _____ contains protons and neutrons

-_____ have the same mass as a _____

-The _____ is small compared to the overall size of an atom

-The _____ orbit the nucleus (like planets)

-The mass of an _____ is 1/1800 that of a proton

-The size of the _____ is determined by the size of the _____ of electrons

-There is only _____ between the electrons and the nucleus.