SHS LEARNING ACTIVITY

CHEM1-02-03

Name: _____ **Score/Mark:** _____

Grade and Section: _____ **Date:** _____

Strand: ☐ **STEM** ☐ **ABM** ☐ **HUMSS** ☐ **ICT (*TVL Track*)**

Type of Activity : ☐ Concept Notes ☐ Skills: Exercise/Drill ☐ Illustration ☐ Laboratory Report ☐ Essay/Task Report ☐ Other: _____

Activity Title: 02-03.Atoms are made of "subatomic" particles v04

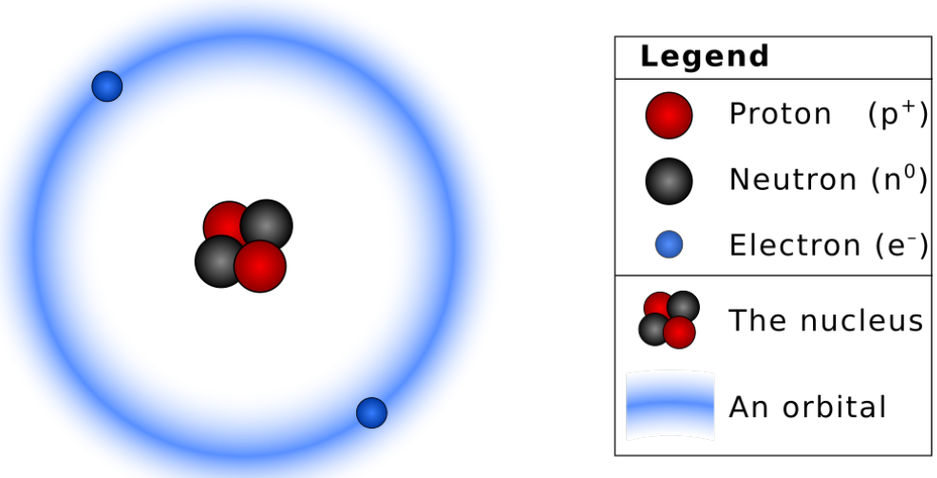
Learning Target: To illustrate how atoms are made of subatomic particles called protons, electrons and neutrons

Authors/References: Victor Sojo / OED:atom; Brown: The Central Science

The word "atom" comes from the Greek word "*átomos*" which means "**indivisible**". The reason for this name is that ancient philosophers in Greece, and before them in India, used to think that matter was composed of very small particles that could not be divided.

They were right about the small particles, but they were wrong about their being indivisible. In fact, through the careful work of many generations of scientists, we now know that **atoms are made of three main subatomic particles**: **protons**, **neutrons**, and **electrons**.

Let's look at a very simplistic **model** of the atom:



Protons and neutrons are clustered together in the **nucleus**. Electrons are distributed far away in **orbitals**, in ways that we will study later.

Protons have a **positive electric charge**, **electrons** are **negative**, and **neutrons don't have any charge** (which is why they have that name).

In a neutral **atom**, the **number of electrons and protons is the same**.

Question - Review from Grade 9-10: What is the main difference between Thomson's "plum pudding" and Rutherford's "planetary" models? Make drawings to discuss the difference.