**MAKE A CLOUD CHAMBER ANSWER KEY**

**Part 1.** Introduction

**Definition of subatomic particles and notes:**

Subatomic particles are the smallest units of matter. They can include the particles that are found in atoms and those that exist freely as a result of radioactive decay or supernovas. The three main subatomic particles that form atoms are electrons, neutrons, and protons.

**Part 5.** Understanding

**Define the following words:**

|  |  |
| --- | --- |
|  | **DEFINITION** |
| **ATOM** | The basic unit of an element. Atoms are composed of electrons, neutrons, and protons. |
| **ELECTRON** | A negatively charged subatomic particle. |
| **NEUTRON** | A subatomic particle, without electric charge, located in the nucleus of an atom.  |
| **PROTON** | A positively charged subatomic particle located in the nucleus of an atom. |
| **CONDENSATION NUCLEUS** | A very small particle on which vapor can condense. |
| **CHALLENGE:** If you have additional time, define the words below. |
| **MUON** | An unstable subatomic particle that is similar to an electron, but has ~200 times the mass of an electron. |
| **SUPERSATURATE** | To increase the concentration of a solution above the saturation point. |

**Explain what happens during condensation.**

When vapor is cooled and it comes into contact with a liquid or solid, it can change from a gas state to a liquid state. In this experiment, the gaseous alcohol vapor comes into contact with condensation nuclei and droplets of liquid alcohol form.

**Why are condensation nuclei important?**

Condensation nuclei provide surfaces on which a gas can condense into a liquid. In this experiment, ions act as condensation nuclei and a visible trail of mist forms as the alcohol condenses.