**Matter and Atoms**

When you look up at the night sky, do you ever wonder where all the material that makes up the stars, Earth, the planets and you came from?

And what is this material, anyway?

Turns out that the material that makes all of these things is essentially the same: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ bound together in the form of \_\_\_\_\_\_\_\_\_\_\_. These particles create what we call \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

All of the material in the universe is matter. The first matter is thought to have been formed 14 billion years ago during \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

After stars were formed, all other atoms were able to emerge from two original atoms, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This was the beginning of matter as we know it.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the material that forms everything we know. All matter has mass, even \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. You can measure mass in \_\_\_\_\_\_\_\_\_\_\_\_\_. All matter also occupies space or has \_\_\_\_\_\_\_\_\_\_\_\_\_\_. Volume is measured using \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Matter is made out of \_\_\_\_\_\_\_\_\_\_. \_\_\_\_\_\_\_\_\_\_ are small, and made out of three different particles: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the centre, and \_\_\_\_\_\_\_\_\_\_\_\_\_ around.

\_\_\_\_\_\_\_\_\_\_\_\_(+) are positively charged.
\_\_\_\_\_\_\_\_\_\_\_\_ (-) are negatively charged.
\_\_\_\_\_\_\_\_\_\_\_\_\_ are not charged, and help keep the nucleus stable by stopping the \_\_\_\_\_\_\_\_\_\_\_\_ from touching.

\_\_\_\_\_\_\_\_\_\_\_\_\_ have much more energy than the protons and neutrons, which is why they have the ability to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.



Depending on the amount of \_\_\_\_\_\_\_\_\_\_\_\_\_ matter has, it can change \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The more energy you add, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the atoms become and the more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ between them.

Let's look at the states of matter that we know.

**Solid:**

* Has a definite \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Molecules are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Does not \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Liquid:**

* Has a definite \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ but not a definite\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_ easily
* Lots of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ between particles
* Takes the \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of its container

**Gas:**

* Has no definite \_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Lots of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ between particles
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_ easily
* Takes the \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of its container

**Plasma** -- the state with the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, and the last to be discovered -- was actually the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ state of matter in the Universe. Only after plasma \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, we were able to see all the other states of matter forming.

Plasma has similar properties when comparing to gas, but it is also \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Examples of plasma include stars, lightning, fluorescent lights and neon lights.

