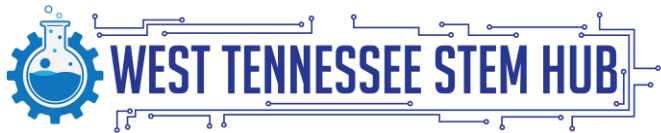




# PLASMA BALL

BY: CAMILLE ROBINSON



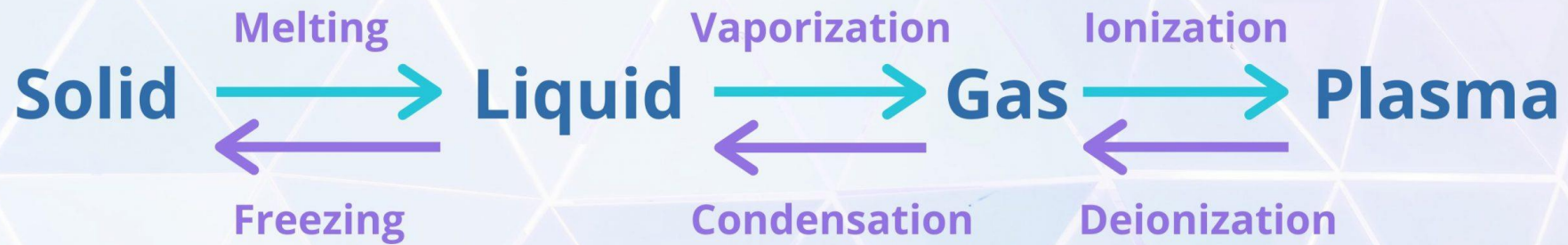
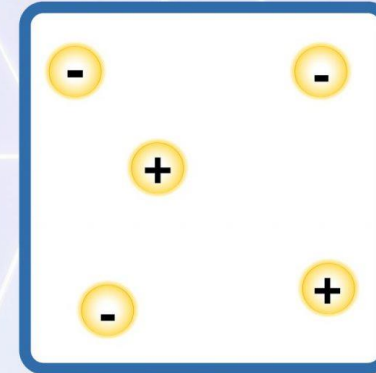
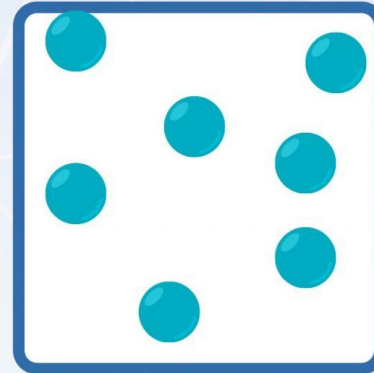
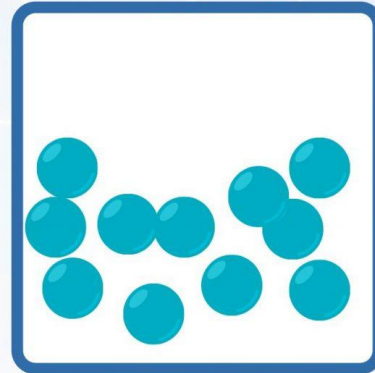
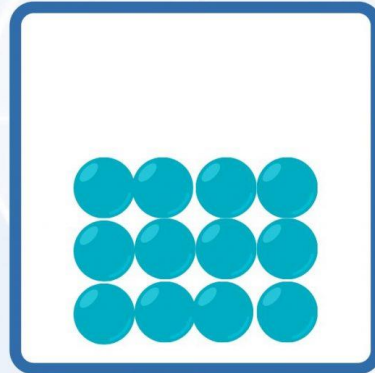
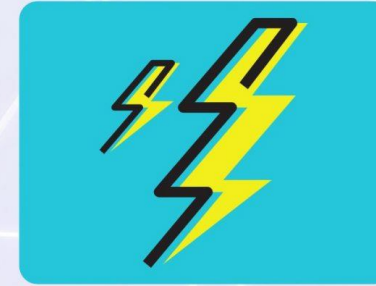
# DEFINITIONS

- **Noble gases** – Any of the gaseous elements; helium, neon, argon, krypton, xenon, and radon, occupying Group 0 of the periodic table. Exhibit great stability and low reaction rates.
- **High-voltage electrode** - A conductor (w/ a source/sink for a current) with a large electrical potential.
- **Ionization** – Process by which an atom or molecule acquires a negative or positive charge by gaining or losing electrons, often in conjunction with other chemical changes. This results in an electrically charged atom or molecule is called an ion.

# WHAT IS PLASMA?

- Plasma is a **4th state of matter**.
- Plasma is created by adding energy to a gas so that some of its electrons leave its atoms. A process called **ionization**. This results in negatively charged electrons, and positively charged ions.
- The charged particles in a plasma will react strongly to electric and magnetic fields.

# States of Matter



sciencenotes.org

# HOW DOES A PLASMA BALL WORK?

- A plasma ball is a clear glass ball filled with a mixture of **noble gases** with a **high-voltage electrode** at its center.
- Plasma filaments extend from the electrode to the glass when electricity is supplied, creating beams of colored light.
- The colors displayed depend on the gases used inside. Common gasses include neon, argon, xenon, and krypton.

# SOURCES

- [https://kids.kiddle.co/Plasma\\_\(physics\)](https://kids.kiddle.co/Plasma_(physics))
- <https://sciencenotes.org/states-of-matter/>
- <https://wonderopolis.org/wonder/how-does-a-plasma-ball-work#:~:text=The%20electrode%20at%20the%20center%20of%20a%20p,lasma%20ball%20emits,arg%20C%20xenon%20C%20and%20krypton.>