

States of Matter

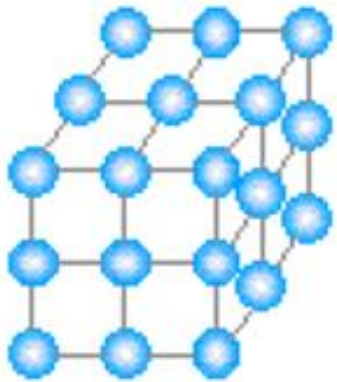
- What are the states of matter?
- How are their particles arranged?
- What level of energy is each?
- Do they definite volume and shape?
- What are some examples?



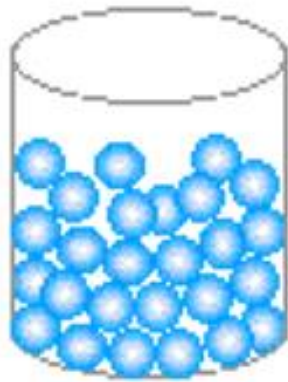
Matter is anything with mass and volume. It is everywhere from the clouds in the sky to a boat out at sea.



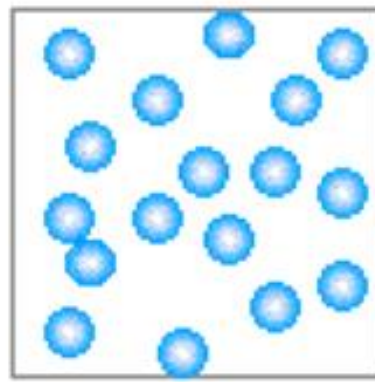
There are 4 states of matter:
solid, liquid, gas, and plasma.



SOLID



LIQUID



GAS

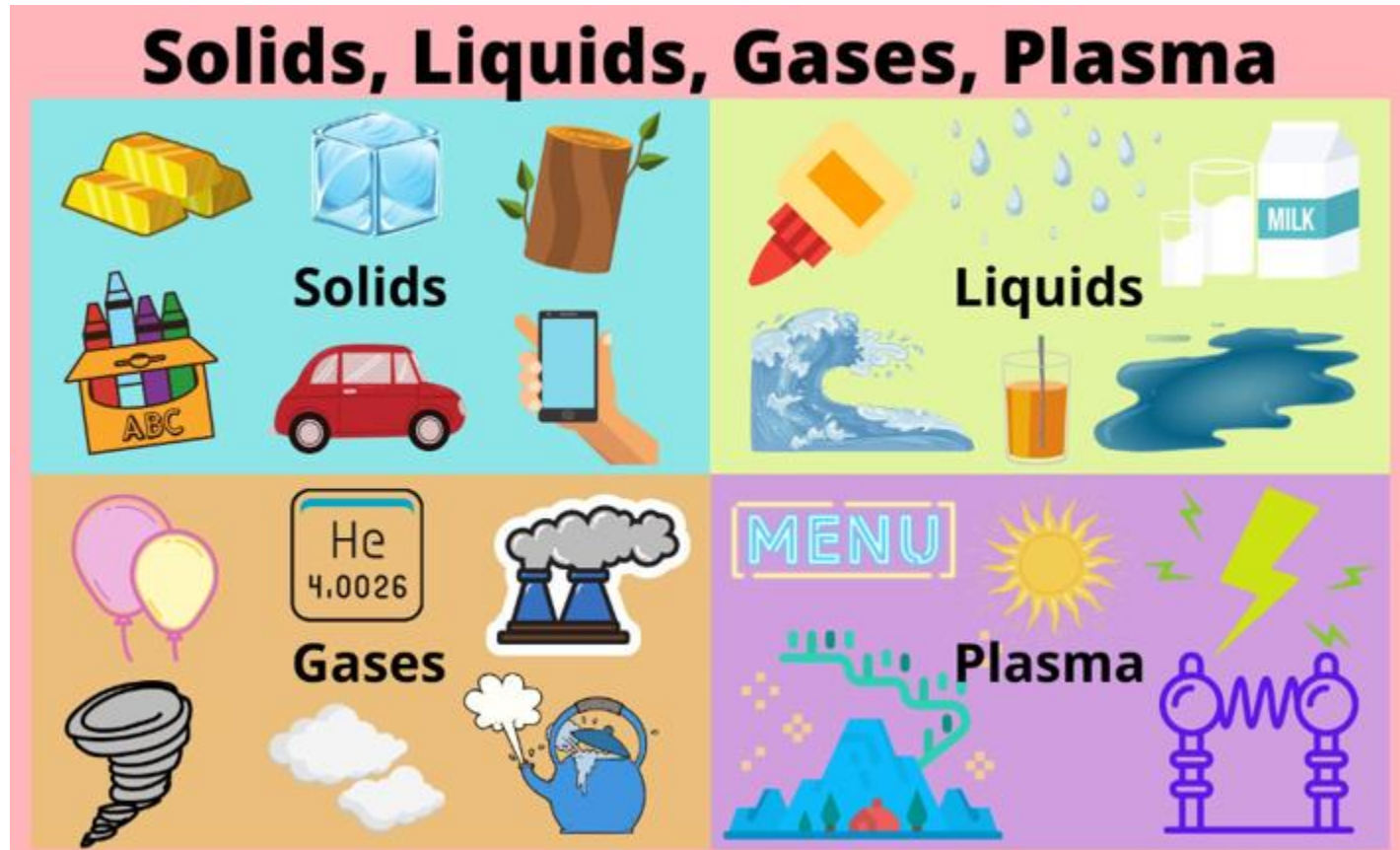


PLASMA



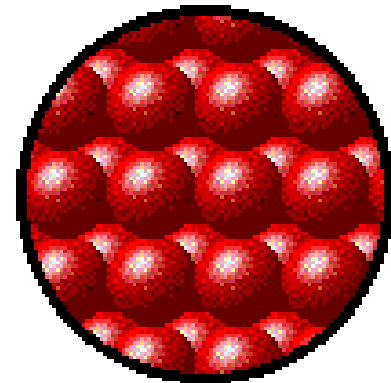
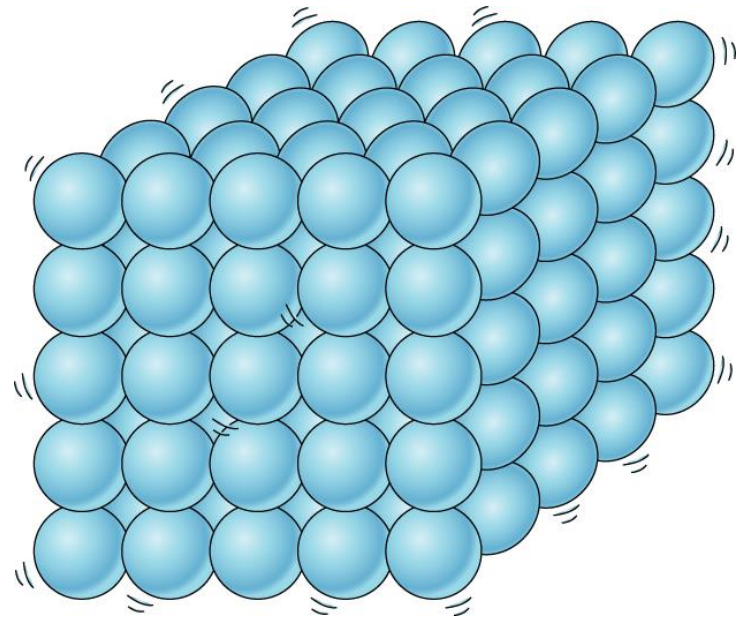
Increase Energy

States of matter are the physical forms in which a substance can exist.

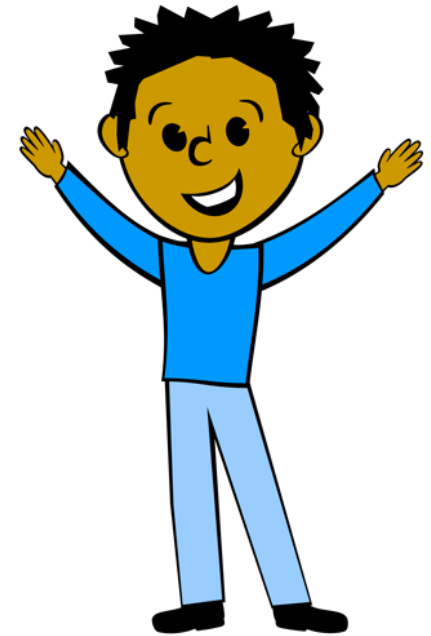


Solid: state in which matter has a definite shape and volume

The particles in a solid are very close together. The tighter the particles are packed, the harder the solid. They have little energy.

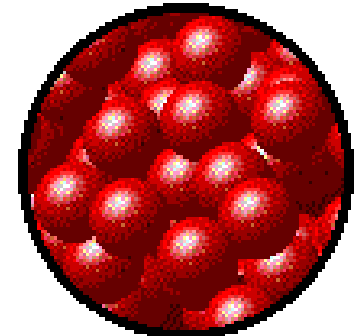
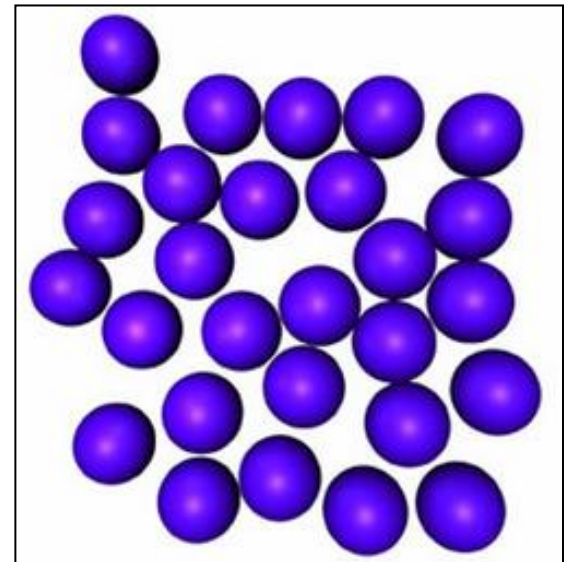


What are some examples of solids?



Liquid: state in which matter takes the shape of its container and has a definite volume

The particles in a liquid slip past each other and have space in between. Liquids have more energy than a solid but less than a gas.





Not all liquids are the same. Some are thicker and resist pouring. These liquids have a higher viscosity. Viscosity is a liquid's resistance to flow.

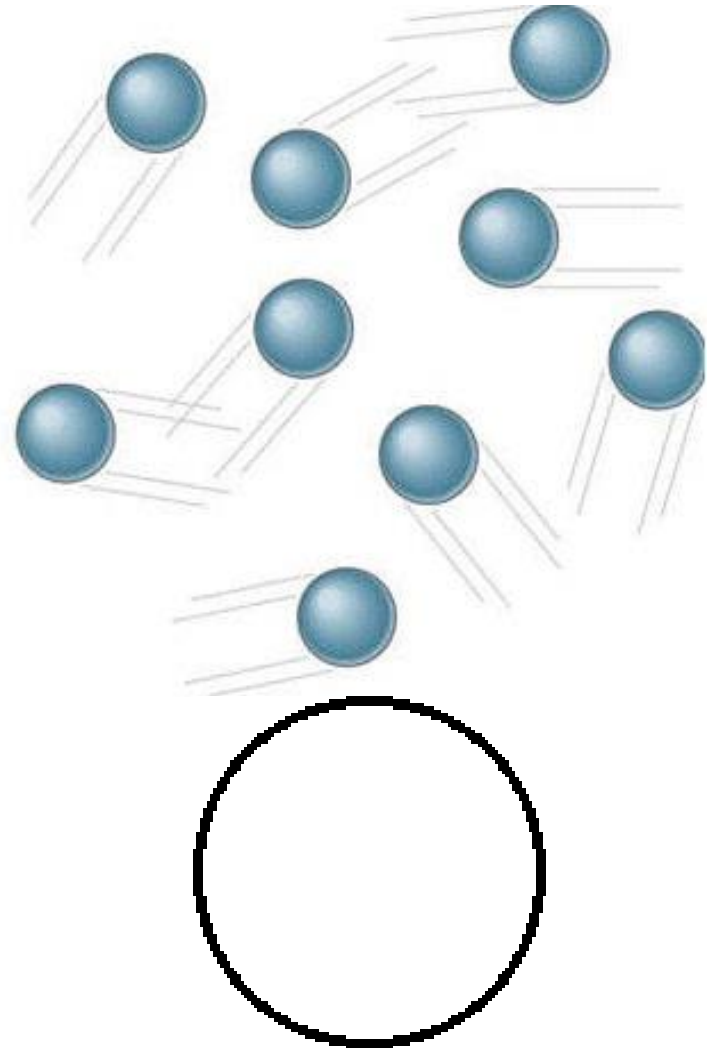
What are some examples of liquids?



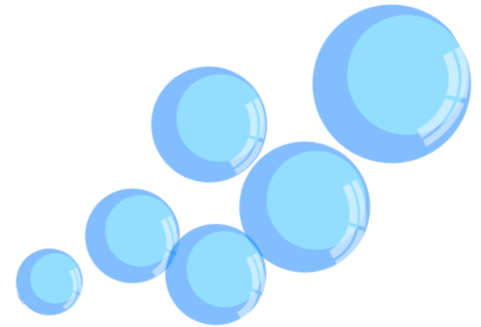
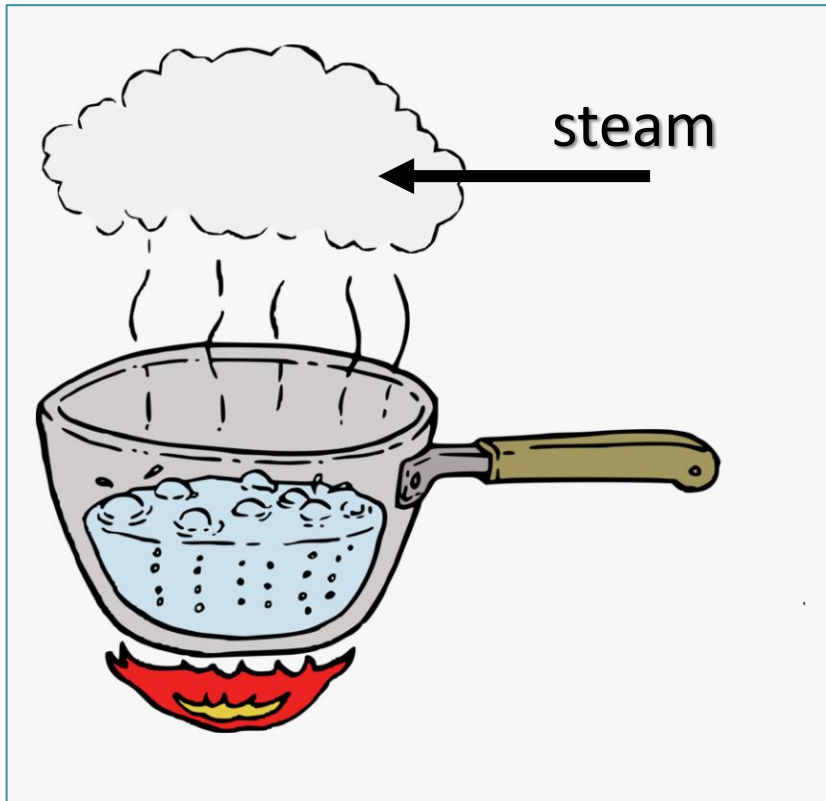
Gas: state in which matter changes in both shape and matter

The particles in a gas spread out to fill a space.

Particles move freely and have lots of energy.

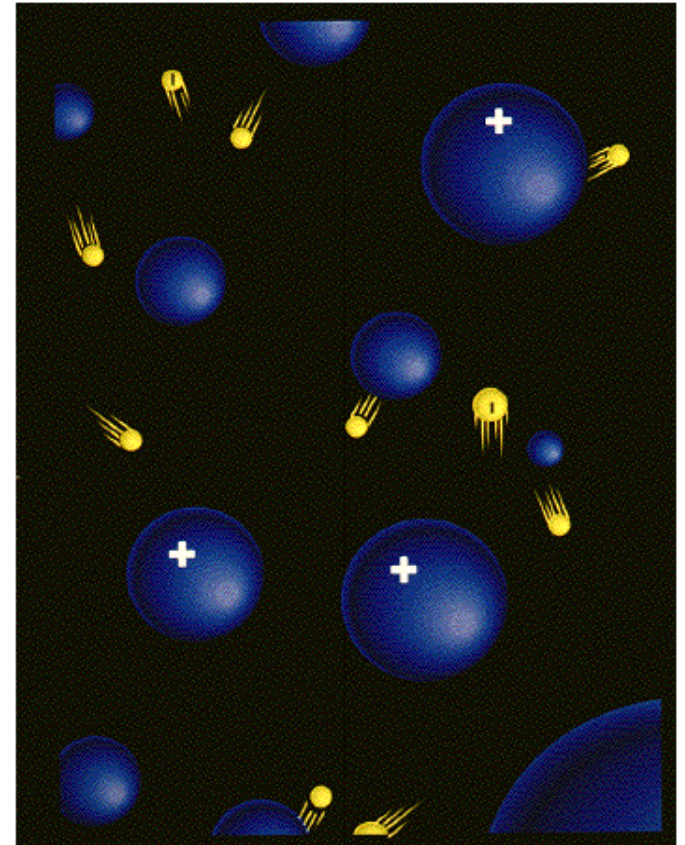


What are some examples of gases?

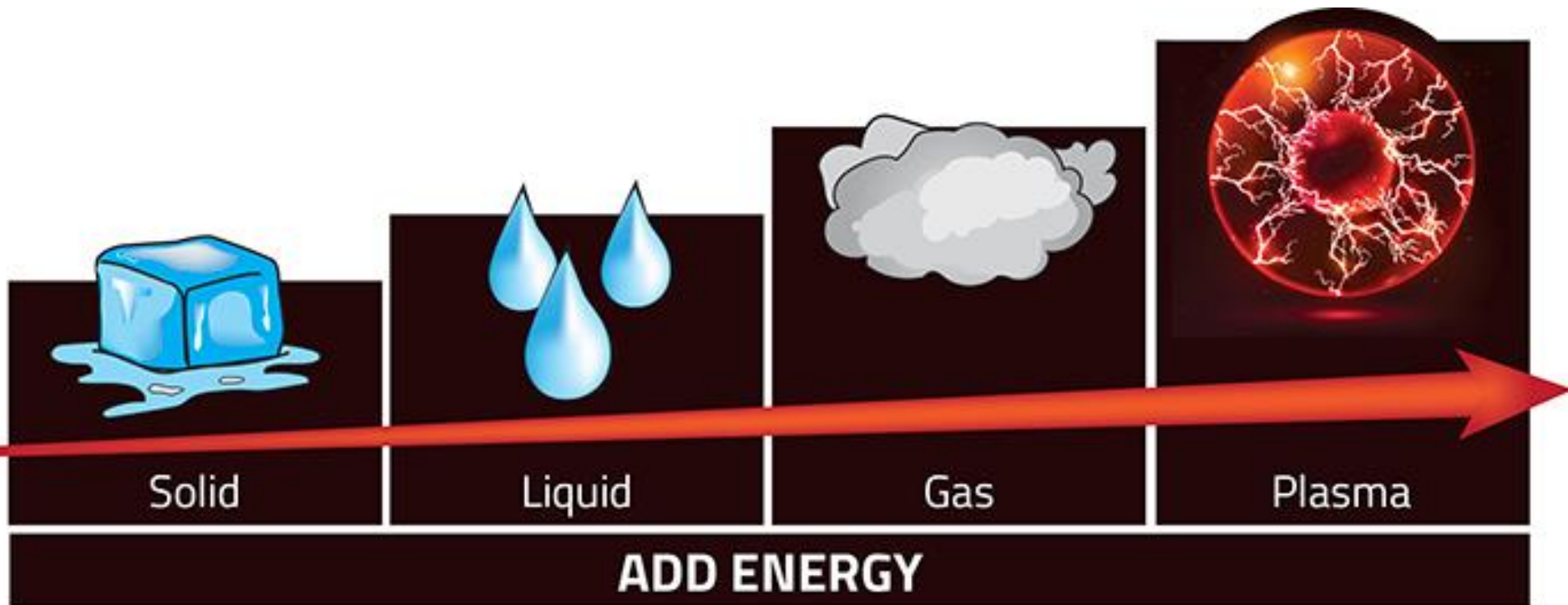


Plasma: state of matter that does not have a definite shape or volume and whose particles have broken apart

The particles in a plasma are like a gas, but they are electrically charged. Particles move freely and have extremely HIGH energy.



On Earth, the three most common states of matter are solid, liquid, and gas. However, plasma makes up most of our universe (around 99%). Plasma is found in the stars and the interstellar environment. On Earth, it does not exist naturally, except in lightning and the Aurora Borealis. It can be produced artificially using powerful magnetic fields to separate electrons from their nuclei in gases.



In our everyday life, plasma can be seen in micro-electronics and television flat screens. The commonest is the neon tube in our bathrooms. A plasma is a mixture of positively charged ions and negatively charged electrons, possibly co-existing with neutral atoms and molecules.



What are some examples of plasma?



Did you know that water is the only form of matter that appears in three states of matter? Yes, it's true.



Steam



Water



Ice



Gas

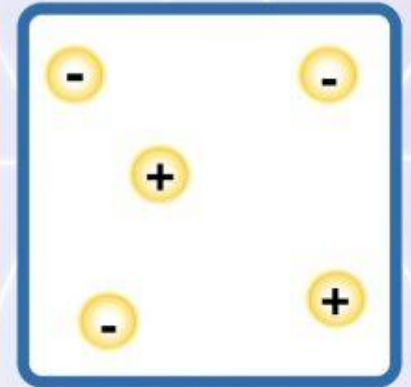
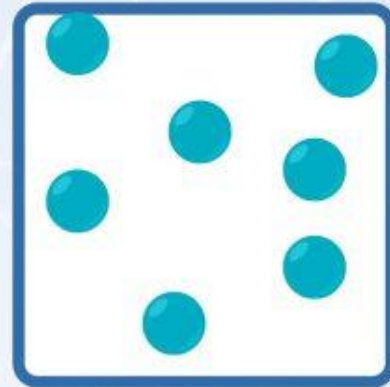
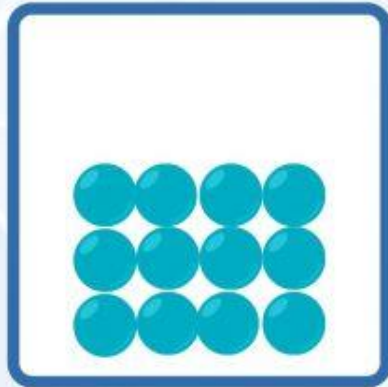


Liquid



Solid

Matter can change from state to state by undergoing a change in energy.



To learn more about matter, visit our States of Matter Printable & Activities post under our [Science Units & Activities](#).





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♥ Marie

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