

Fluids

Matter

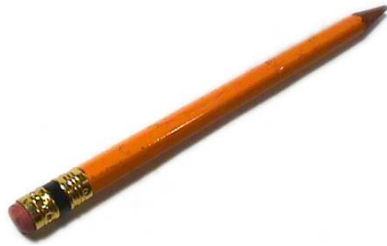
Monday, January 7, 2019





Review

- Lets see what you already know!
- Get out phone for a game of kahoot!



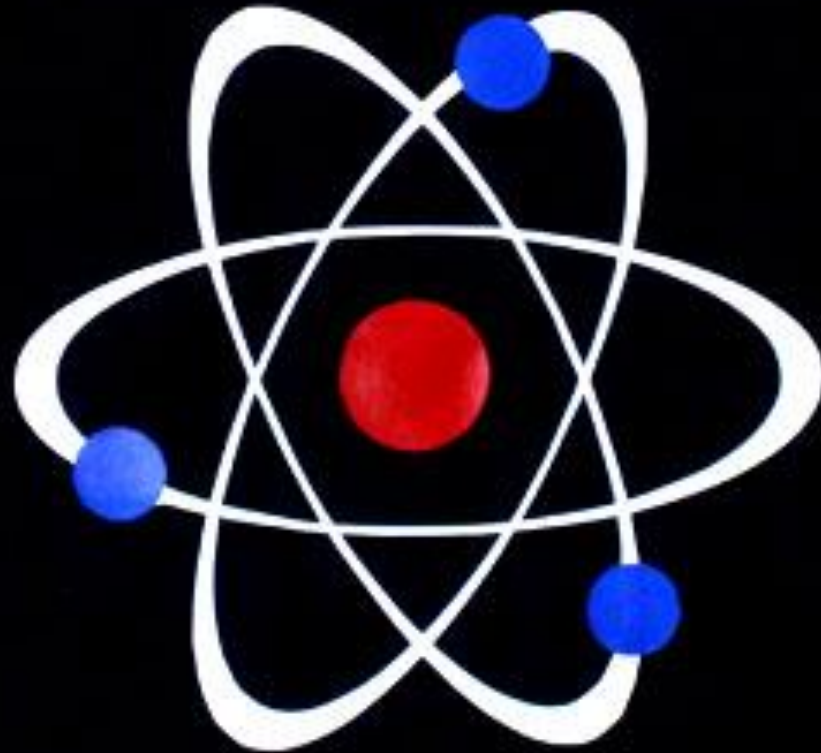
- **Matter** – anything that takes up space and has mass.

- It's **EVERYTHING!!** *



* Except for light...and energy...and you know...dark matter...and of course....antimatter :)

Never Trust an Atom

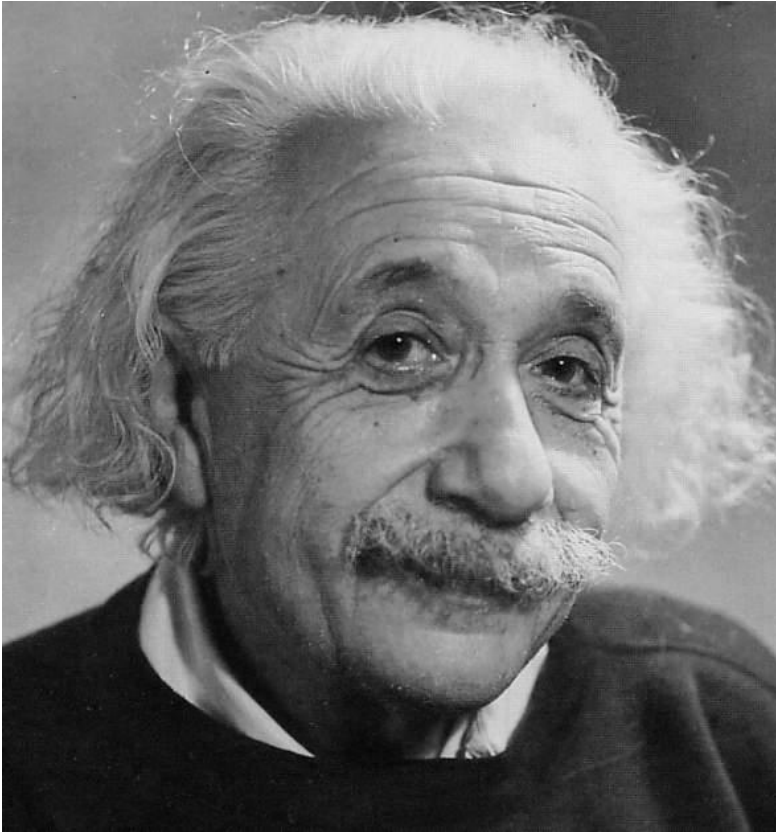


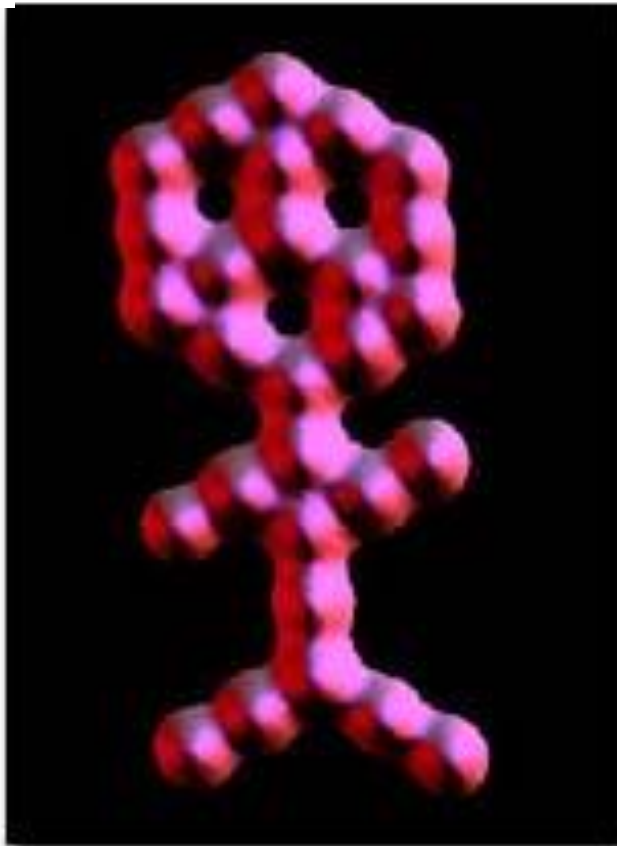
They Make Up Everything



■ Particle Theory of Matter

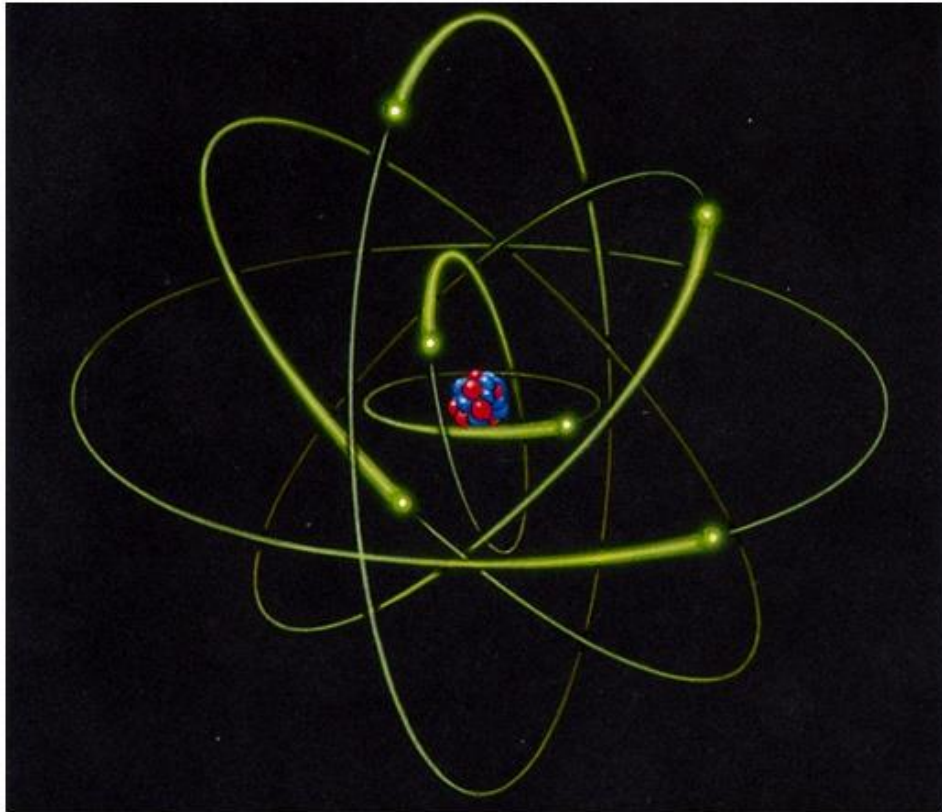
You should have learned about the particle theory of matter last year. It is the basis of this unit as well, and so it is important to understand and review the 5 statements!



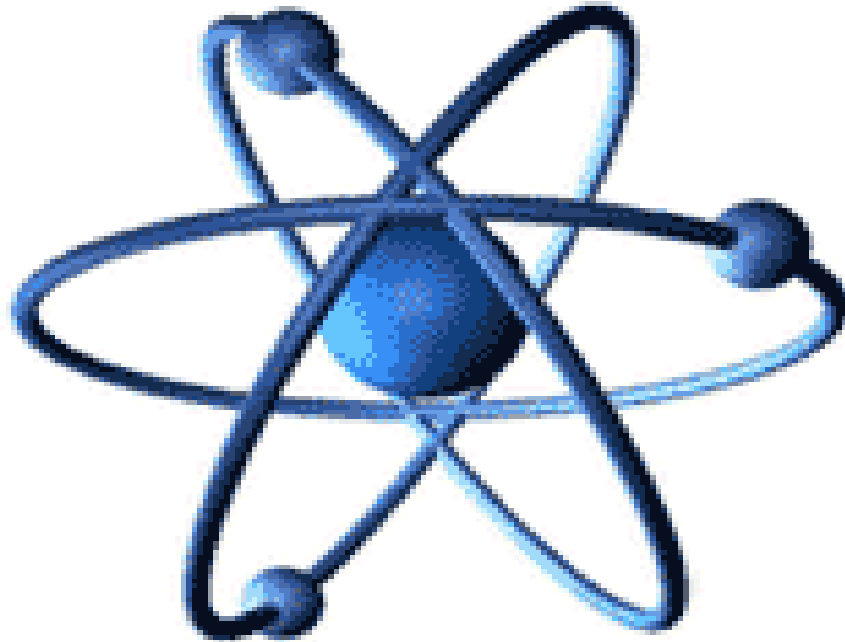


CO₂ Man was made from 28 molecules of carbon dioxide and measures just 5 millionths of a millimeter from head to toe

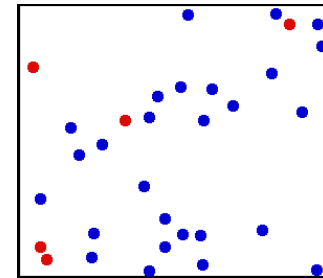
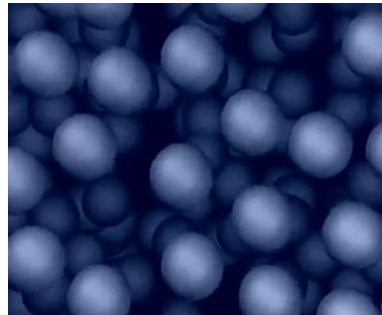
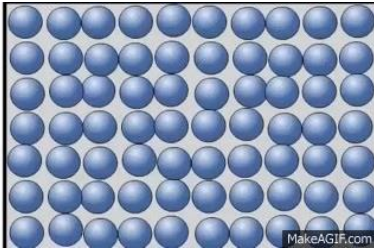
- **Particle Theory of Matter**
- 1. **Everything is made of particles (atoms or molecules)**

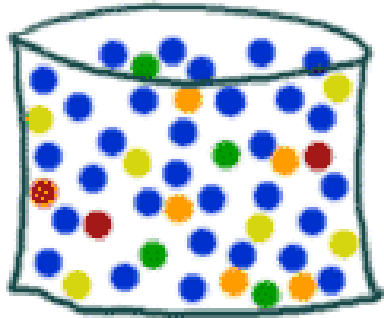


- **Particle Theory of Matter**
- 1. **Everything is made of particles (atoms or molecules)**
- 2. **These particles are always moving**

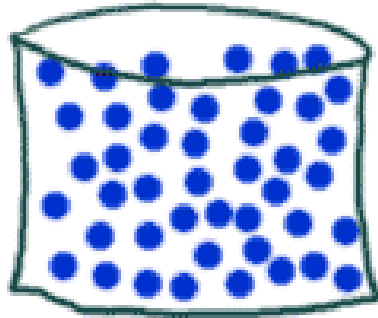


- **Particle Theory of Matter**
- 1. **Everything is made of particles (atoms or molecules)**
- 2. **These particles are always moving (the energy (heat) determines the speed)**





Tap Water

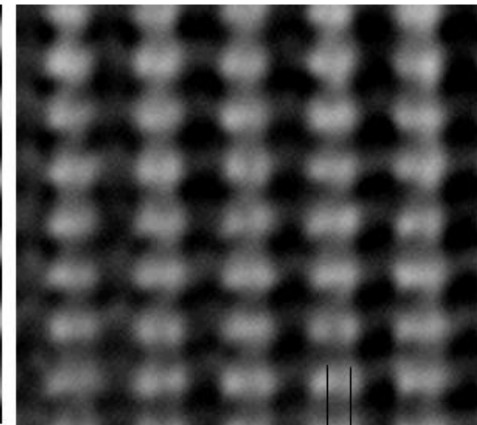
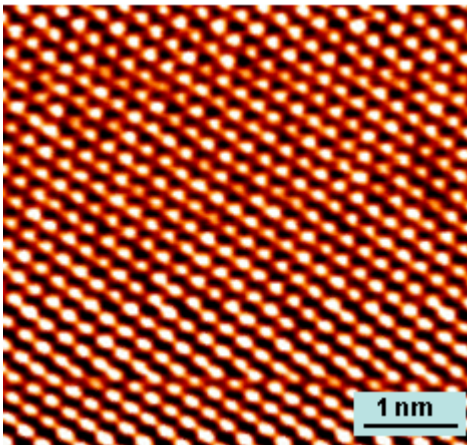


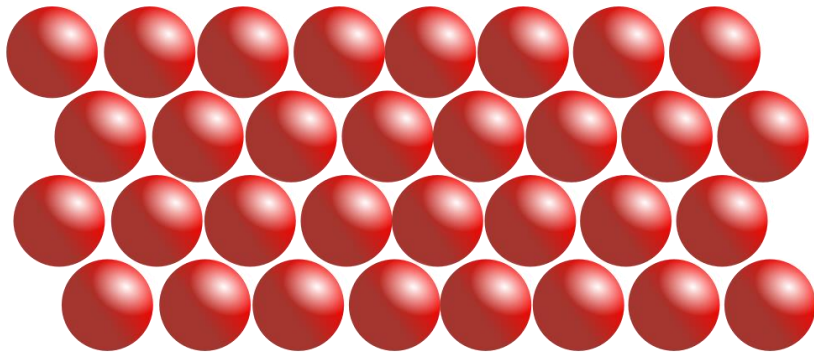
Distilled

- **Particle Theory of Matter**
 1. **Everything is made of particles (atoms)**
 2. **These particles are always moving**
 3. **All particles in a pure substance are the same – different substances are made of different particles**

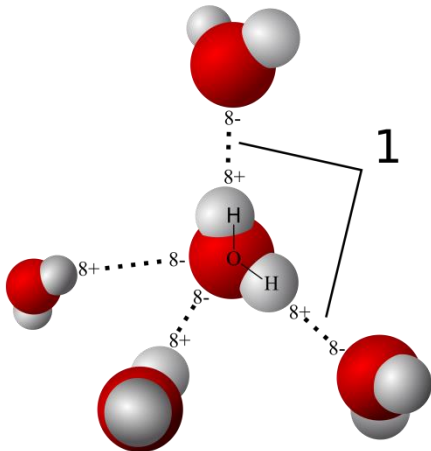
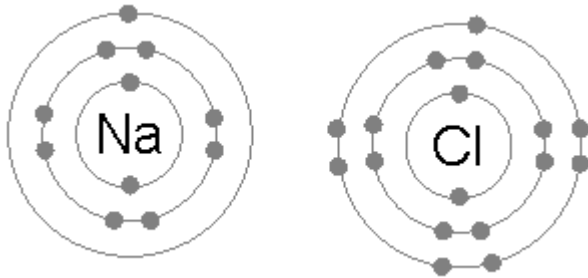
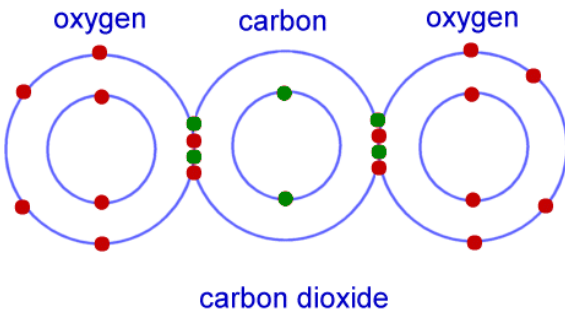
Diamond [110]

Silicon [112]





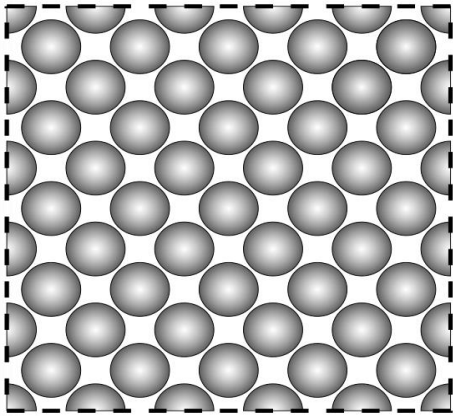
- **Particle Theory of Matter**
- 1. **Everything is made of particles (atoms)**
- 2. **These particles are always moving (the energy (heat) determines the speed)**
- 3. **All particles in a pure substance are the same – different substances are made of different particles**
- 4. **There is space between the particles**



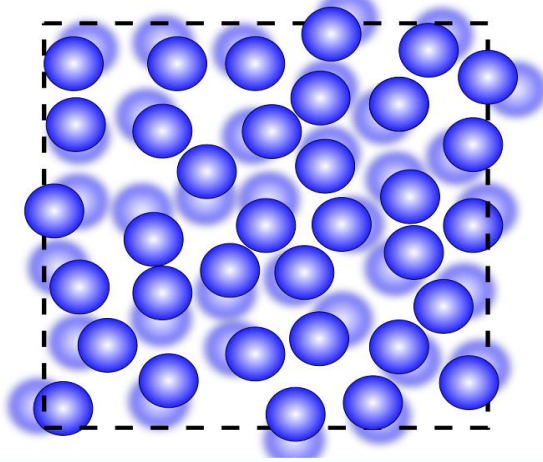
■ Particle Theory of Matter

1. **Everything is made of particles (atoms or molecules)**
2. **These particles are always moving (the energy (heat) determines the speed)**
3. **All particles in a pure substance are the same – different substances are made of different particles**
4. **There is space between the particles**
5. **The particles in a substance are attracted to one another – the strength of the attraction depends on the type of particles.**

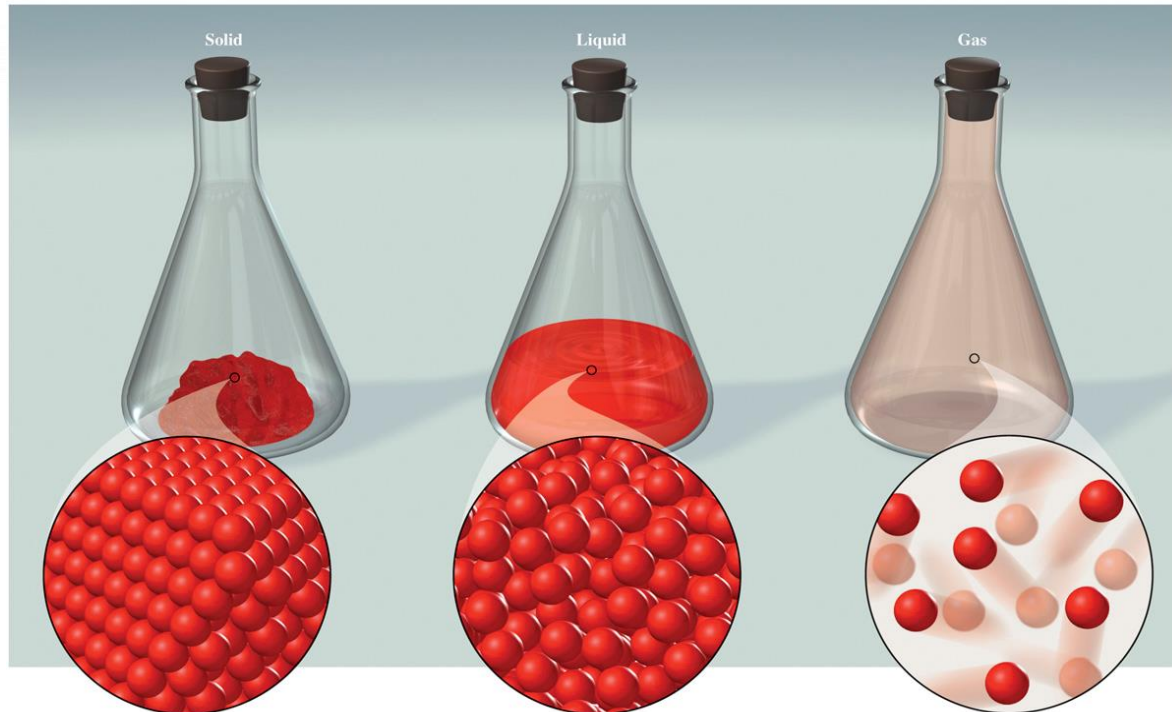
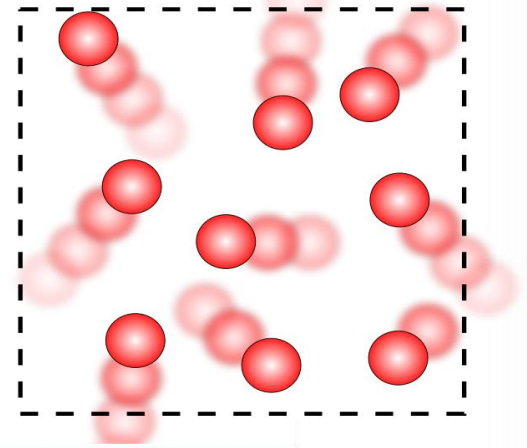
SOLID



LIQUID

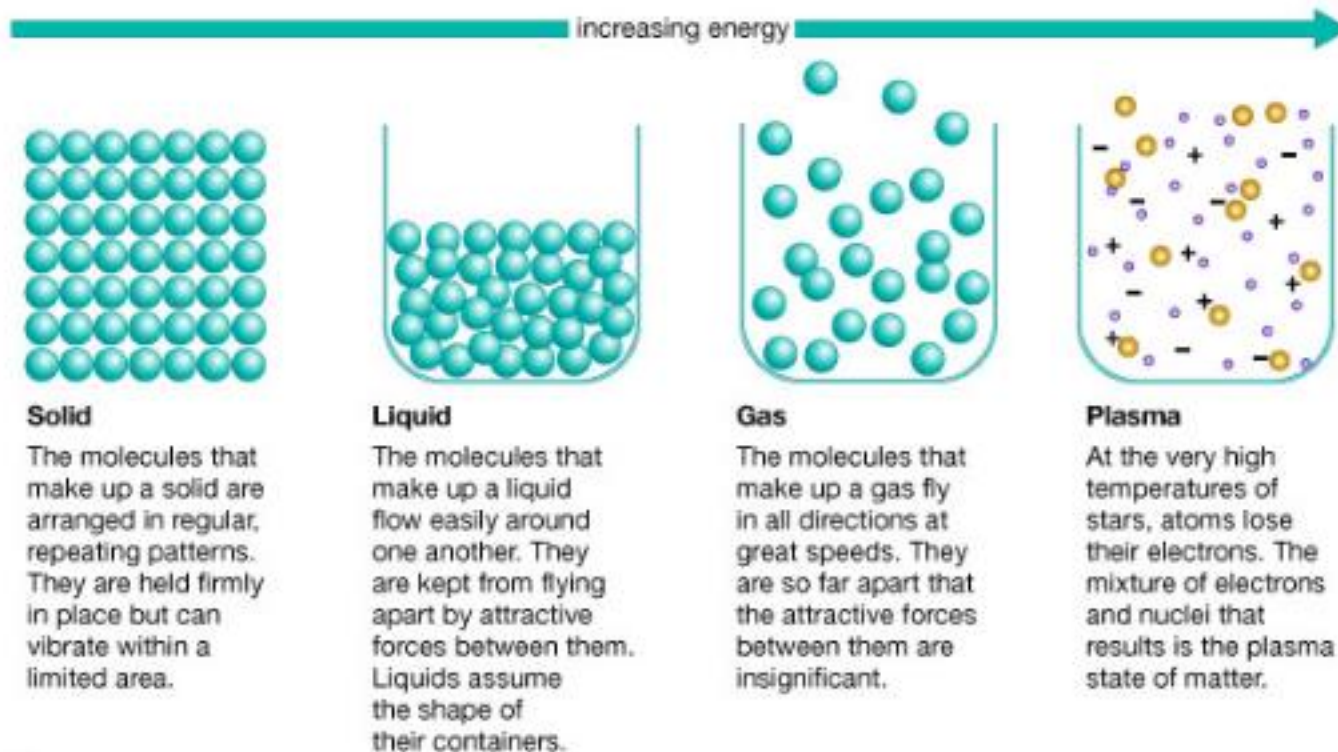


GAS



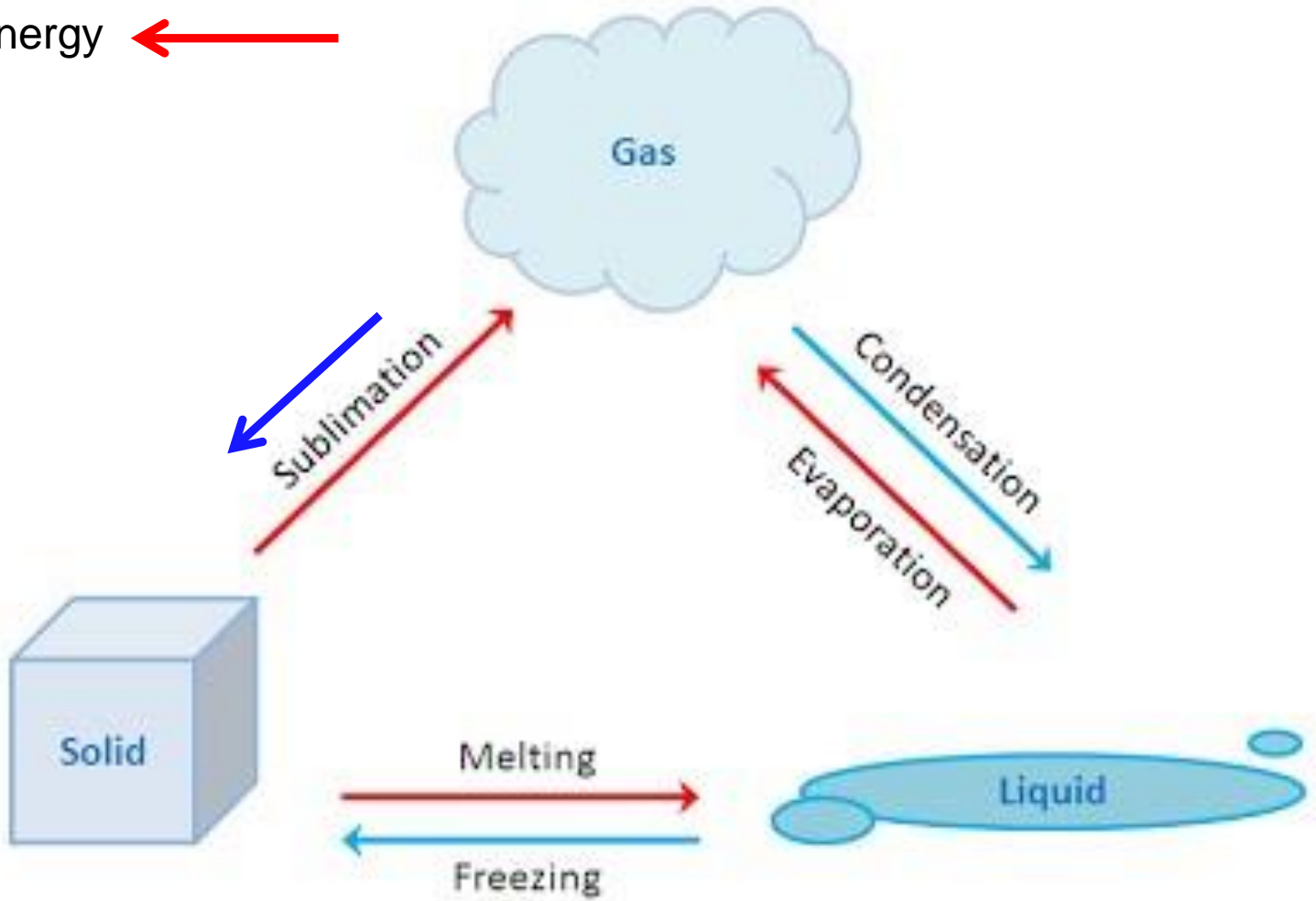
The States of Matter

Although modern science has allowed scientists to discover several states of matter, there are only four that occur naturally. The state at which you will find any bit of matter depends on the level of energy contained within it at the time.



Lose Energy ←

Gain Energy ←



Fluids

- Of the four naturally occurring states of matter, we will look at two of them; liquids and gases. Combined we refer to these states of matter as "Fluids." *A fluid is defined as any substance that is able to flow or will change shape continually under a constant force.*
- In this unit we will study fluids, the properties of fluids, and how humans take advantage of these properties. Our list of topics will include:
 - • Viscosity
 - • Buoyancy
 - • Hydraulics
 - • Flow Rate
 - • Pressure
 - • Pneumatics
 - • Density
 - • Compressibility
- To conclude, you are going to answer this question: Is peanut butter a solid or a fluid?