

States of Matter

8th Grade Physical Science

10/28/2019

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3 States of Matter



water- **liquid**



heat water- steam (**gas**)
physical change



jello crystals- **solid**



mix in hot water (**liquid**)
dissolves



place in fridge: removing heat
transforms- **liquid** to a **solid**
physical change



Our Goals Today:

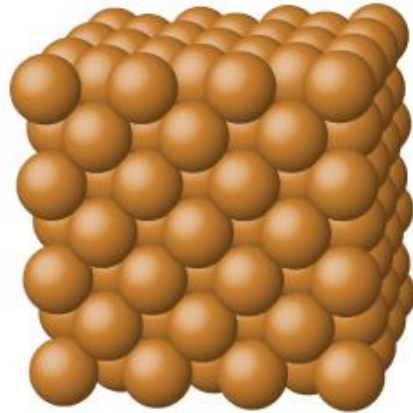
- To better understand what a solid, liquid, and gas are.
- Understand the motion of particles in a solid, liquid, and gas

States of Matter: Solid

- **Solid**
 - Definite shape and volume
 - This means that the solid's shape remains the same (definite) and that it always occupies the same amount of space (volume)

States of Matter: Solid

- Particles in a solid:
 - Closely packed and can only vibrate

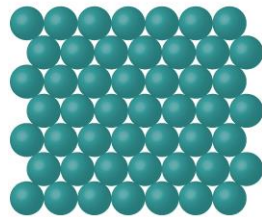


State of Matter: Solids

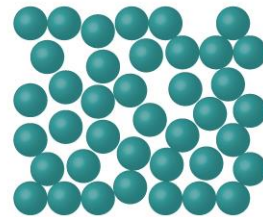
Types of Solid:

1) Crystalline Solids – Particles are arranged in a regular pattern (example: Quartz, diamond, salt, sugar)

2) Amorphous Solids (*structure is “formless” **) – Particles are not arranged in a regular pattern (example: butter, glass, nylon)



Crystalline



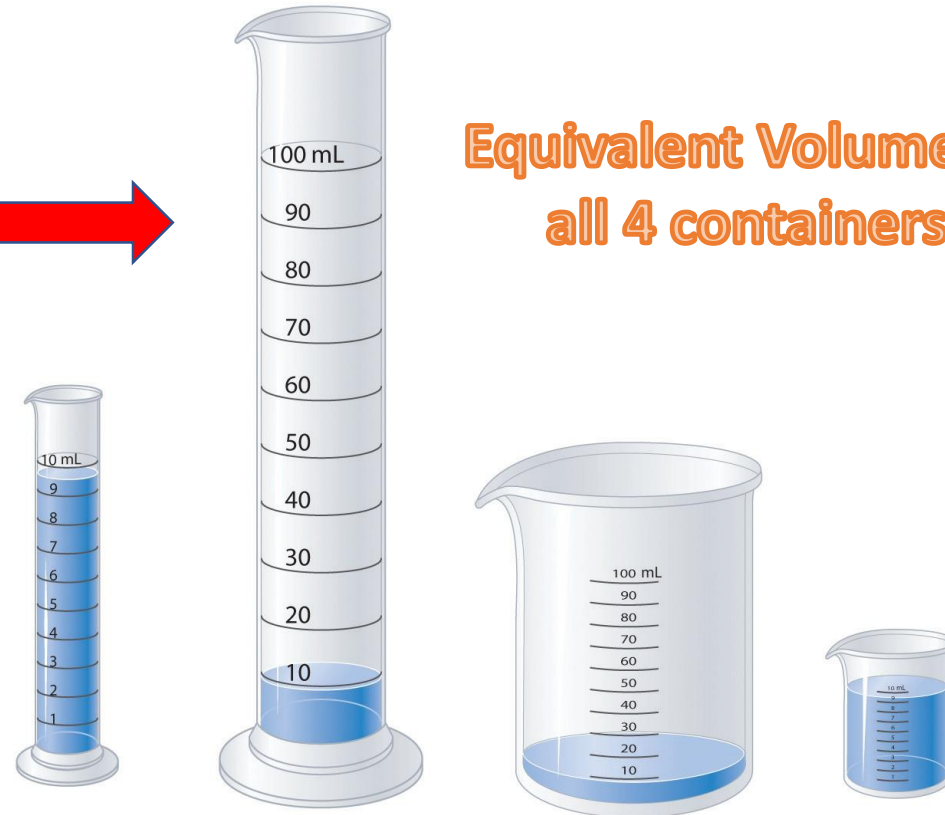
Amorphous

**Prefix "a" is negation and the word “morfo” means form. So, formless*

States of Matter: Liquid

- A liquid has a definite volume but takes the shape of the container its in (it has no shape of its own).

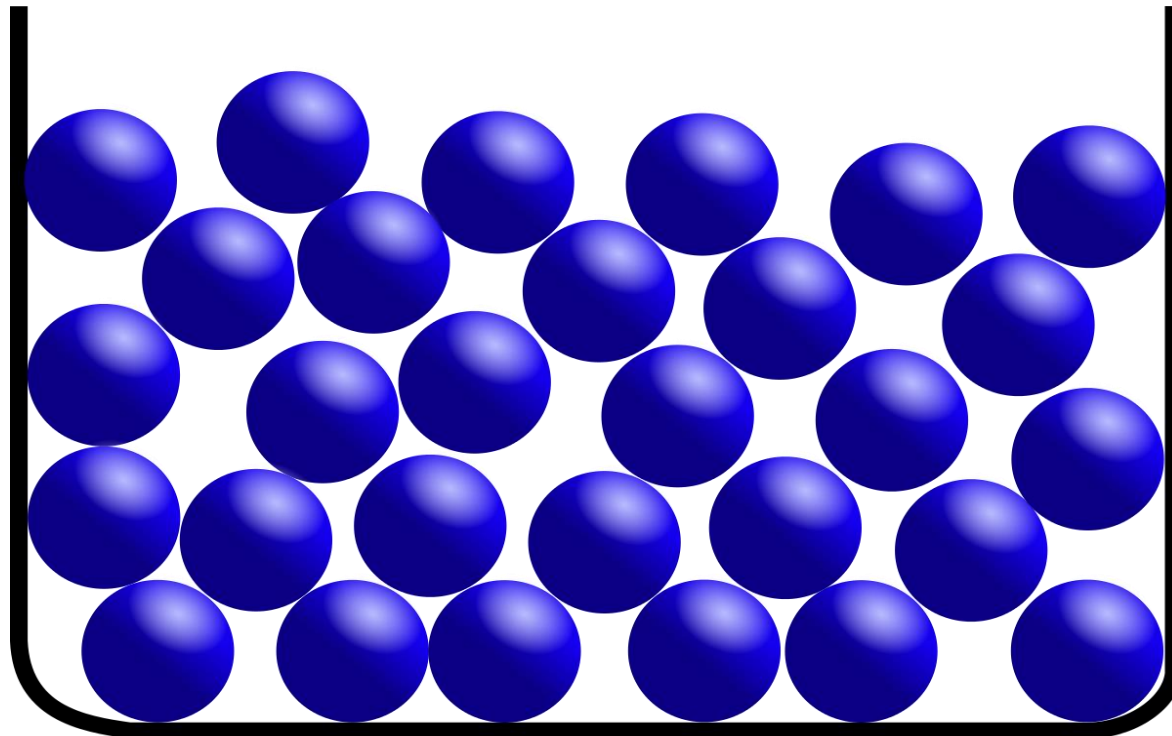
This picture shows 10 milliliters of liquid in 4 different containers. Notice how the volume does not change, but the liquid assumes The shape of its container!



Equivalent Volumes in all 4 containers!

States of Matter: Liquid

- Particles in a liquid:
 - Loosely packed (compared to a solid), can bump each other and move past each other.



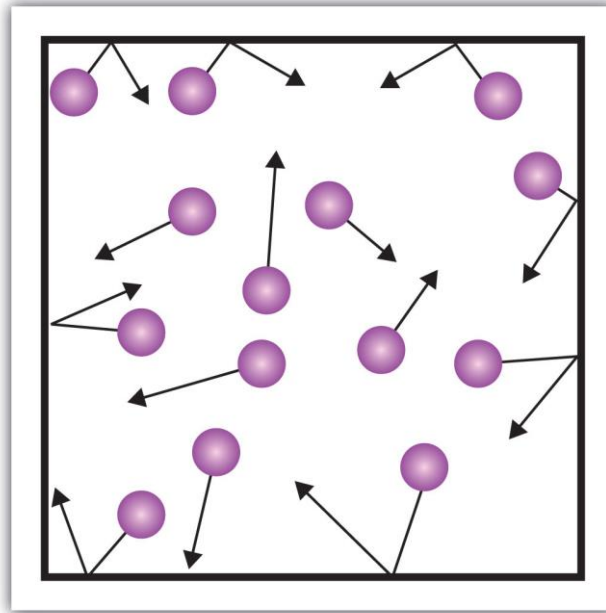
States of Matter: Liquids

Properties of Liquids:

- 1) Surface Tension: An attractive force among the surface molecules of a liquid.
- 2) Viscosity: resistance to flow. The higher the viscosity, the slower the flow!

States of Matter: Gases

- In gases particles move freely and bump into each other randomly.



Vocab you should know!

1. Solid
2. Crystalline Solid
3. Amorphous Solid
4. Liquid
5. Surface Tension
6. Viscosity
7. Gas