

## Particle Theory and the Classification of Matter

**Science:** A way of knowing or thinking about nature. It depends on observation, explanations, logical arguments and skeptical review.

**Chemistry:** a branch of science which studies the structure and properties of matter.

**Matter:** anything that \_\_\_\_\_ and \_\_\_\_\_.  
The particle theory is a scientific model that explains matter.

### The Particle Theory

The four main points of particle theory are:

P: \_\_\_\_\_

\_\_\_\_\_

S: \_\_\_\_\_

\_\_\_\_\_

A: \_\_\_\_\_

\_\_\_\_\_

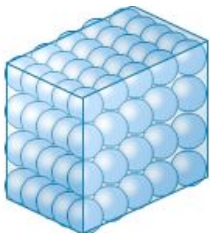
M: \_\_\_\_\_

\_\_\_\_\_

### Stages of matter

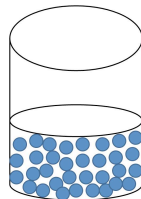
#### SOLID

- Particles are \_\_\_\_\_ packed, \_\_\_\_\_ attractive forces hold them together.
- \_\_\_\_\_ energy
- \_\_\_\_\_ Shape.
- \_\_\_\_\_ be compressed.



#### LIQUID

- Particles are \_\_\_\_\_ apart, have strong enough energy to overcome attractive forces.
- \_\_\_\_\_ energy
- \_\_\_\_\_ Shape. Take on the shape of container.
- \_\_\_\_\_ be compressed.

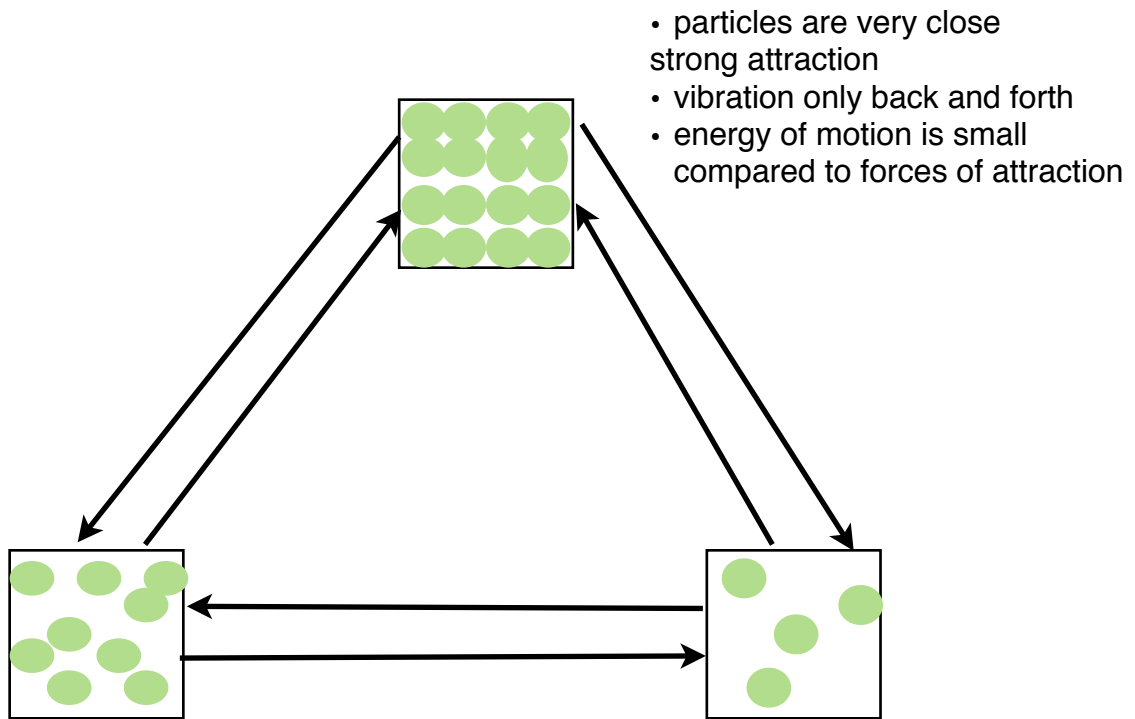


#### GAS

- Particles are \_\_\_\_\_ apart, have so much energy they fly apart.
- \_\_\_\_\_ energy
- \_\_\_\_\_ Shape. Take on the shape of container.



## Changes in state



- particles are close
- attraction
- particles can slide past each other

- particles are very far apart
- particles are moving rapidly
- forces of attraction are almost zero compared to energy of

Initial State	Final State	Change of State	Heat Added or Removed
Solid	Liquid		
Solid	Gas		
Liquid	Gas		
Liquid	Solid		
Gas	Solid		
Gas	Liquid		