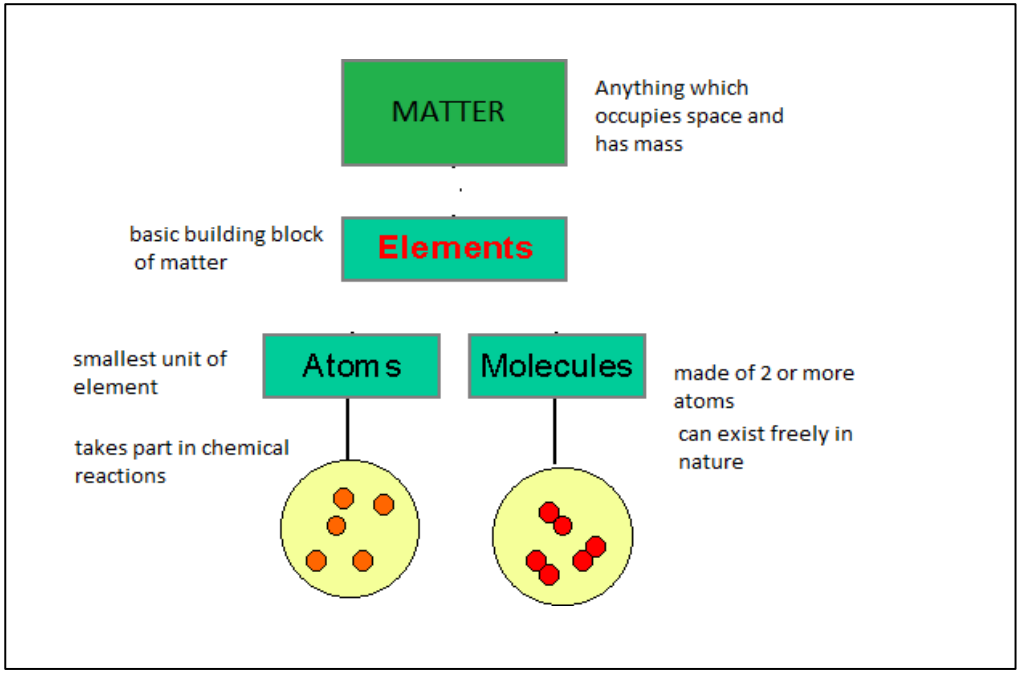
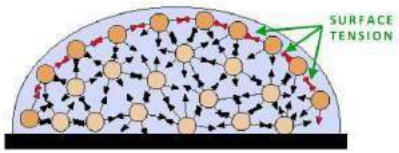
KINETIC THEORY OF MATTER

Kinetic Theory of Matter :

1. Molecules possess kinetic energy
2. kinetic energy increases with increase in temperature
3. Intermolecular force of attraction :
   - molecules of matter always attract each other
   - 2 types – cohesive & adhesive force
4. Force of Cohesion :
   - the force of attraction between the molecules of same substance
   - maximum between solids, less between molecules of liquids and least between gas molecules
   - responsible for keeping the molecules of substance bind together
   - ex. force of attraction between water molecules and water molecules
   -
5. Force of Adhesion :
   - the force of attraction between the molecules of different substance
   - ex. force of attraction between water molecules and gas molecules
6. Intermolecular space – space between any two consecutive molecules
7. More intermolecular space – more intermolecular force



Surface Tension :



The phenomenon in which surface of a liquid, where the liquid in contact with gas , acts like a thin elastic sheet.

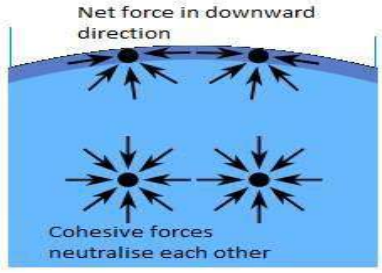
Examples :

Water has highest surface tension than Most other liquids(except liquid metals).
Units – N/m or dynes/cm

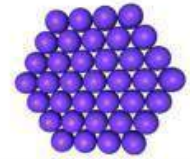
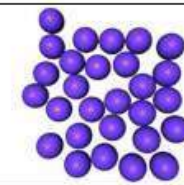
Interface Tension : phenomenon in which surface of a liquid, in contact with another liquid, acts like a thin elastic sheet

Causes :

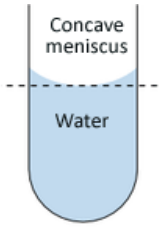
An unbalanced cohesive force experienced by molecules on the surface of the liquid is responsible for the surface tension



Arrangement of molecules :

Solids	Liquids	Gases
		
• Strong attraction between the particles. • Particles are very close together and neatly arranged. • Particles vibrate in place.	• Moderate attraction between particles • Particles still very close together but not neatly arranged • Particles are able to slide passed each other.	• Very weak attraction between particles. • Particles are much further away from each other. • The particles move all around and bump into each other.
• Definite shape • Definite volume	• Indefinite shape • Definite volume	• Indefinite shape • Indefinite volume

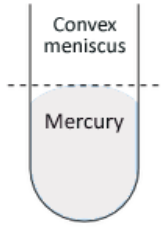
Meniscus :



Adhesive force > Cohesive force

Water wets the glass

Water sprayed on
glass surface, spreads



Cohesive force > Adhesive force

Mercury doesnot wet the glass

When sprayed on glass, forms
spherical drops

Conduction :

molecules in solid objects don't
"move" - they vibrate

* Needs Medium
* Not possible in vacuum

Convection :