

Gr 8 7.1 States of Matter

Name _____

Date _____

Block _____

- Matter is anything that has _____ and _____.
- _____ is the quantity of _____ a substance or object contains.
 - Mass is usually measured in _____ (____) or _____ (____).
- _____ is the amount of _____ taken up by a substance or object.
 - Volume is usually measured in _____ (____), _____ (____), or _____ centimetres (cm³).



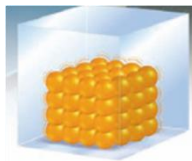
Comparing the basketball and bowling ball, which has more mass? Volume?

The three familiar states (phases) of matter.

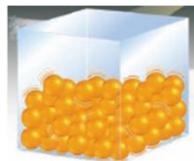
	Fixed mass	Fixed Volume	Fixed Shape
Solid			
Liquid			
Gas			

The Particle Model of Matter

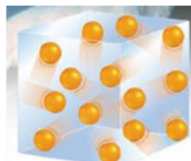
- All matter is made of small _____ that are too small to see.
- There are _____ between the particles. The amount of space varies depending upon the _____.
- The particles are always _____.
- The particles are _____ to one another.



Solid



Liquid



Gas



As the rollercoaster's speed increases, its kinetic energy also increases.

The Kinetic Molecular Theory

- Kinetic energy is the energy due to _____.
- The Kinetic Molecular Theory (KMT) explains what happens to matter when the _____ of the particles _____.
 - A theory provides a scientific explanation based on the results of _____.

The main points of the kinetic molecular theory include:

1. All matter is made of very small _____.
2. There is _____ between particles.
3. Particles are constantly _____. The particles are colliding with each other and the walls of their container.
4. _____ makes particles move. The more energy the particles have, the _____ they move and further apart they get.

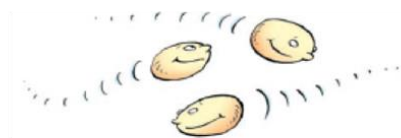
Solid: Particles are so _____ packed together they cannot move freely. They can only _____.



Liquid: Particles are farther apart and they can move by _____ each other.



Gas: Particles are very _____ and move around _____.



Thermal Expansion and Contraction

Thermal _____ is the _____ in volume of a substance when its temperature is _____.

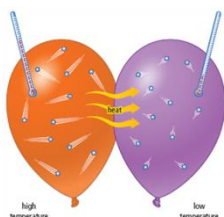
Thermal _____ is the _____ in volume of a substance when its temperature is _____.

Can you use the concepts of thermal expansion and contraction to explain how a thermometer works?



The Difference Between Heat and Temperature

- Thermal energy is the total _____ energy of all the particles in the substance.
- Heat is the _____ of thermal energy between two material of different _____.
 - Heat is always transferred from the substance with a _____ temperature to the substance of a _____ temperature.
- _____ is the average kinetic energy of the particles in a substance.



Changes of State

Name	Change of State (from _ to _)	Heat Gained	Heat Lost
Melting	Solid to liquid		
Evaporation	Liquid to gas		
Condensation	Gas to liquid		
Solidification	Liquid to solid		
Sublimation	Solid to gas		
Deposition	Gas to solid		

- _____ point is the temperature at which solid turns to _____.
- _____ point is the temperature at which liquid turns into _____.

