

Use the website: http://www.clickandlearn.org/Gr9_Sci/Particle_Theory.htm to complete the worksheet.

Matter is anything that has _____ and takes up _____ .

The Particle Theory of Matter:

1. Matter is made up of tiny _____ (Atoms & Molecules)
2. Particles of Matter are _____ by very strong electric _____
3. Particles of Matter are in constant _____ .
4. Each substance has _____ particles that are _____ from the particles of other _____
5. _____ affects the _____ of the particles. The _____ the temperature, the _____ the speed of the particles.
6. There are empty _____ the particles of matter that are very _____ compared to the _____ themselves.

States of Matter

| State | Solid | Liquid | Gas |
|--------------------------|------------|--|-----------------|
| Diagram | | | |
| Spaces between particles | Very small | | |
| Forces between particles | | | Relatively weak |
| Arrangement of particles | | Clumps of particles that slide past each other | |

Thinking Questions

1. Use what you have learned about the particle theory to explain these common situations:
 - a) why a solid metal expands when it is heated.

 - b) why smells of good food *diffuse* from a bag to your nose

 - c) You have 100 mL of water in a beaker. You add 20 mL of table salt. The water level rises to only 105 mL.

 - d) 50 mL of ethyl alcohol and 40 mL of water combined in a beaker add up to 90 mL of liquid

2. When a gas is heated in a container, the pressure increases. Explain using the particle theory of matter.