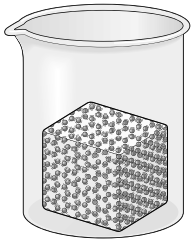
Name: _____ Date: _____

The Particle Model of Matter

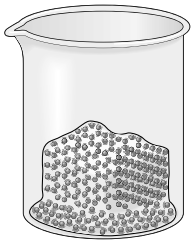
Use the following words to fill in the blanks in the chart.

absorbs condensation empty evaporation fills fixed freely freezing gas larger liquid melting shape slowly small solid reverse vibrate



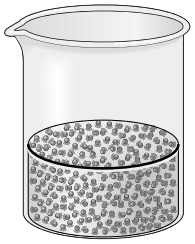
The particles in a solid are held together strongly. The spaces between the particles are very _____.

A _____ has a fixed shape and a fixed volume because the particles can move only a little. The particles _____ back and forth but remain in their fixed positions.



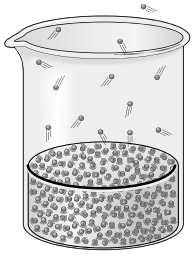
As a solid is heated, the particles vibrate faster and faster until they have enough energy to break away from their fixed positions. When this happens, the particles can move about more _____. The change from a solid to a liquid is called _____.

The reverse of melting is called _____ or solidification. This is the change from a liquid to a solid. As a liquid cools, the particles in the liquid lose energy and move more and more _____. When they settle into fixed positions, the liquid has frozen or solidified.



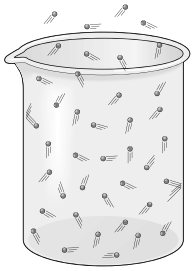
The particles in a liquid are separated by spaces that are large enough to allow the particles to slide past each other.

A _____ takes the _____ of its container because the particles can move around more freely than they can in a solid. They are held close together, however. Therefore, a liquid has a _____ volume, like a solid.



When a liquid _____ heat energy, the particles move about more and more quickly. Some of the particles gain enough energy to break free of the other particles. When this happens, the liquid changes to a gas. The change from a liquid to a gas is called _____.

The _____ process—the change from a gas to a liquid—is called _____. As a gas cools, the particles in the gas lose energy and move more and more slowly until the gas condenses to a liquid.



The particles in a gas are separated by much _____ spaces than the particles in a liquid or a solid. Therefore, a gas is mostly _____ space.

A _____ always _____ whatever container it is in. Since the particles are moving constantly in all directions, they spread throughout their container, no matter what volume or shape their container is.