LIQUIDS

9. How do the particles of a liquid make it possible to pour juice into a glass?

The particles of water slide past each other along the bottom of a container, then pile up over each other to take up the shape of the container.

10. The juice in a beaker is poured into a graduated cylinder. The volume of juice in either container is 350 mL. What does this show you about the properties of a liquid?

The volume stays the same, and pouring it causes all the particles to stay together and pull each other around, even though they swivel around each other and take up the shape of the container

GASES

11. What is the definition of a gas in terms of shape and volume?

Gas - is the state of matter that has no definite shape or volume, because the particles move freely around the whole container.

12. How is it possible for one small tank of helium to fill hundreds of balloons?

In the tank the helium atoms are compressed (close together) When the enter all the balloons, they can spread out and take up all the space allowed to them.

PLASMAS

13. What state of matter makes up more than 99% of the matter in the universe?

plasma (ex. sun= a dense group of Hydrogen atoms)

14. How do plasmas behave differently than gases?

plasmas can conduct electric current,
but gasses cannot, electric and magnetic fields affect plasmas, but not gasses

15. Give one example of a natural plasma and one example of an artificial plasma.

fire and lightning are natural plasmas,
fluorescent lights contain a plasma.
(neon lights = electrified gas turned to plasma)

Name _____ Class _____ Date _____

Skills Worksheet

Directed Reading B

Section: Changes of State (pp. 114–119)

ENERGY AND CHANGES OF STATE

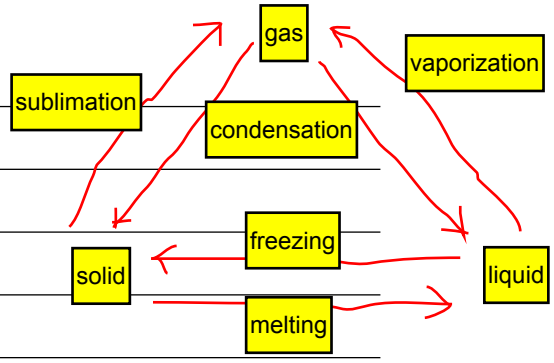
steam **1.** Which of the following have the most energy?

- **a.** particles in steam
- **b.** particles in liquid water
- **c.** particles in ice
- **d.** particles in freezing water

2. When a substance changes from one physical form to another, we say the substance has undergone a(n) change of state.

3. List the six main kinds of changes of state.

1. freezing - liquid to solid
2. melting - solid to liquid
3. boiling or vaporizing - liquid to gas
4. condensation - gas to liquid
5. sublimation - solid to gas
6. condensation - gas to solid



MELTING: SOLID TO LIQUID

4. Could you use gallium to make jewelry? Why or why not?

gallium melts at body temperature
a gallium bracelet would drip off your wrist like melted chocolate

5. The temperature at which a substance changes from solid to liquid is the melting point of the substance.

FREEZING: LIQUID TO SOLID

6. A substance's freezing point is the temperature at which it changes from a liquid to a solid.

7. What happens if energy is added to or removed from a glass of ice water?

If you add energy to the ice water, then some ice will melt

If you remove energy from the ice water, then some water will freeze.

Vaporization

EVAPORATION: LIQUID TO GAS

Match the correct definition with the correct term. Write the letter in the space provided.

vaporization **8.** the change of a substance from a liquid to a gas

boiling **9.** the change of state from a liquid to a gas when the vapor pressure equals the atmospheric pressure

boiling point **10.** the temperature at which a liquid boils

a. boiling point
b. evaporation
c. boiling

11. As you go higher above sea level, the atmospheric pressure decreases and the boiling point of a substance gets lower.

CONDENSATION: GAS TO LIQUID

12. The change of state from a gas to a liquid is called condensation.

13. At a given pressure, the condensation point for a substance is the same as its boiling point.

14. For a substance to change from a gas to a liquid, particles must attract each other and stay more together and swivel around each other.

SUBLIMATION: SOLID TO GAS

15. Why is solid carbon dioxide called "dry ice"?

It sublimates at room temperature instead of melting. This means it turns to a gas instead of a liquid, and as it disintegrates it does not feel wet.

16. The change of state from a solid directly to a gas is called sublimation.

TEMPERATURE AND CHANGES OF STATE

17. The speed of the particles in a substance changes when the _____temperature_____ changes.

18. When a substance is undergoing a change of state, the temperature of the substance does not change until the _____state change_____ is complete.