

Name: Key
Chapter 2 study guide

Period: _____
Date: _____

Test: Tuesday 10/29/19

WARNING

This guide is not the only thing you should use to study. It does not provide you with everything you need. You should also rely on your textbook, homework, and classroom notes. Use everything you can for the best results.

Topic 1: States of matter – Textbook pg. 42 – 47

1. Match the following characteristics with the correct state of matter, there may be more than one answer for each characteristic.

<u>C</u>	No fixed shape & volume	A. Solids
<u>B</u>	Flows easily	B. Liquids
<u>C</u>	Highest energy	C. Gases
<u>A</u>	Little free space	
<u>A</u>	Fixed volume & shape	
<u>C</u>	Easily compressed	
<u>A, B, C</u>	Particles in motion	
<u>C</u>	Highest energy	
<u>B</u>	Particles slide past each other	
<u>C</u>	Assumes the shape and volume of its container	

2. What is the difference between crystalline solids like salt and amorphous solids like butter?

Crystalline solid = Particles form a regular repeating pattern, melts at a specific temp.
Amorphous solid = Particles not arranged in a regular pattern

3. There is 45mL of a liquid sitting in a 250mL beaker. If you pour the liquid into a 500mL flask, which of its two physical properties will change: Shape or Volume
4. A student pours 5 different liquids out of their containers and times how long they take to empty. Based on her data, put the liquids in order from least viscous (1) to most viscous (5).

Liquid	Time (min)	Viscosity
A	1.2	3
B	5	5
C	0.3	1
D	0.8	2
E	2.6	4

5. A sewing needle is made of a metal that is denser than water. However, a sewing needle can appear to float on top of water. Explain the unique property of liquids that allows this to occur.

Surface Tension (The attraction of water molecules at the surface)

6. Unlike solids and liquids, a gas will:
- Keep its volume in different containers
 - Keep its shape in different containers
 - Expand to fill the space available

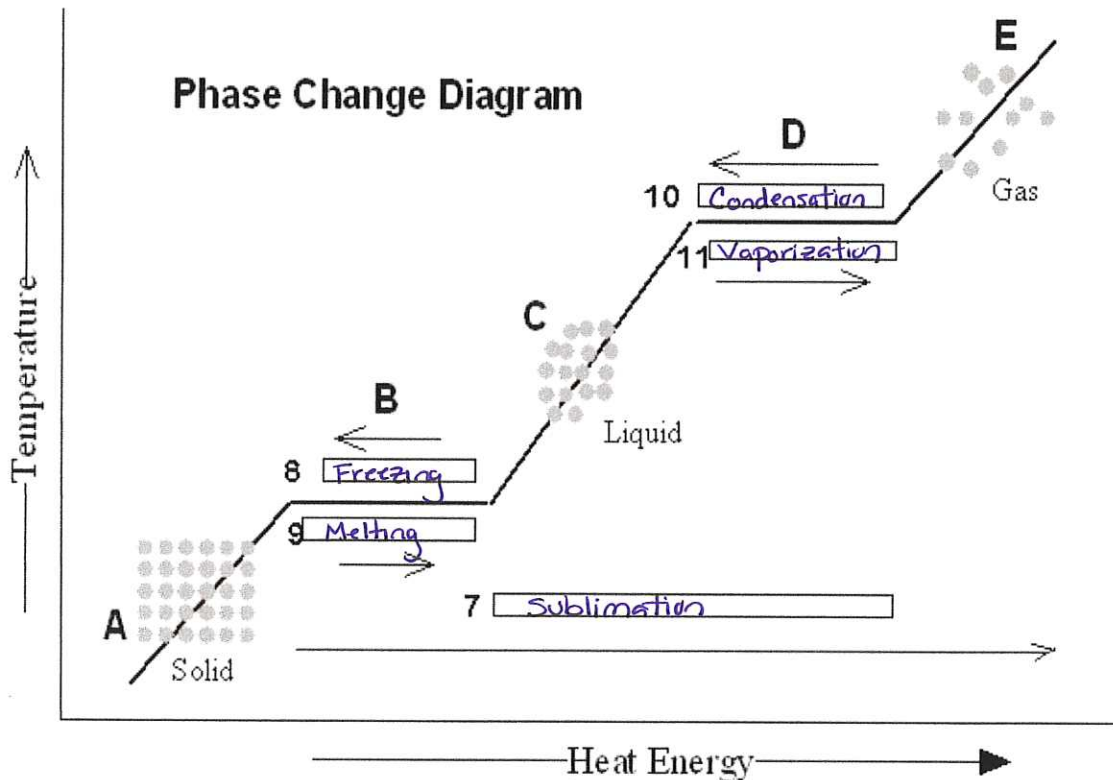
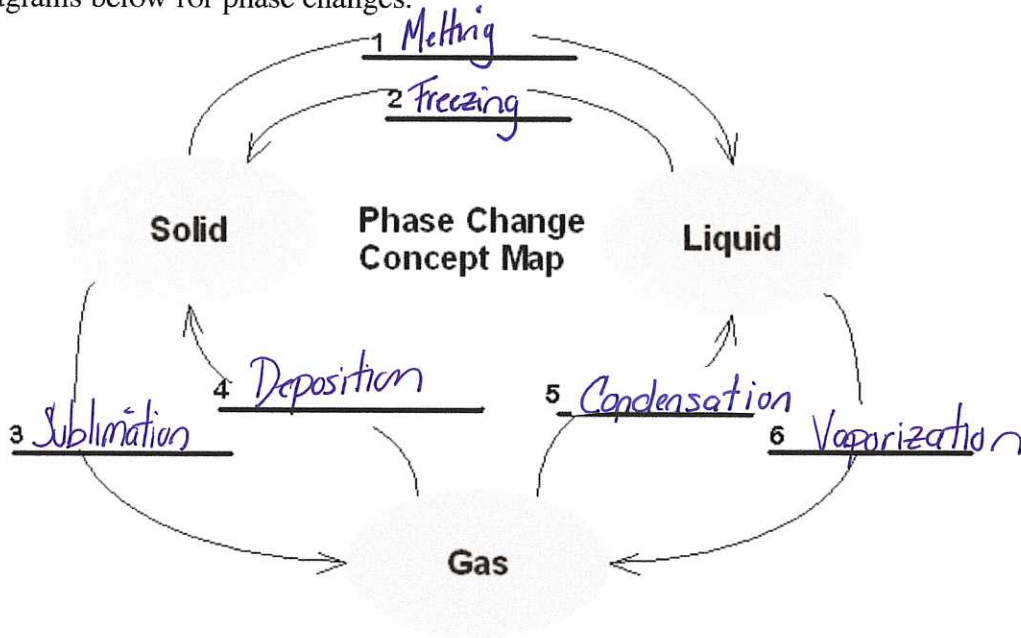
7. Describe the motion of particles in a solid.

Vibrate (move back & forth)

Topic 2: Change of state – Online textbook pg. 48 – 53

8. If a substance changes from one phase to another, is it still the same substance? YES or NO

9. Fill in the diagrams below for phase changes:



10. As temperature increases, are its particles moving farther apart or moving closer together?

11. True/False: A substance changes from a solid to a liquid at its boiling point.

12. True/False: In vaporization, liquid particles have enough energy to become gas particles.

13. When particles go from solid to liquid states, their thermal energy increases (increases/decreases), their speed increases (increases/decreases), and the amount of space between particles increases (increases/decreases).

14. When particles go from gas to liquid states, their thermal energy decreases (increases/decreases), their speed decreases (increases/decreases), and the amount of space between particles decreases (increases/decreases).

15. What is the difference between evaporation and boiling? Evaporation = vaporization only on the surface of a liquid.

16. Solid carbon dioxide is known as dry ice. When a piece of it is placed on a desk, it turns straight into a gas. Therefore, dry ice undergoes sublimation at room temperature. Boiling = Liquid changing to gas below its surface and at its surface.

17. For all 6 phase changes, indicate if it is an endothermic change (heat is added), or an exothermic change (heat is removed)

a. Melting Endothermic
b. Freezing Exothermic
c. Evaporation Endothermic

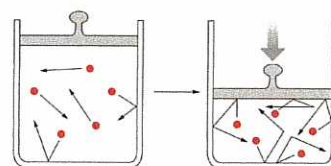
d. Condensation Exothermic
e. Deposition Exothermic
f. Sublimation Endothermic

Topic 3: Gas behavior – Textbook pg. 55 – 61

18. True/False: Gases exert a force on the walls of their containers, creating pressure.

19. Look at the images to the right. What happens to pressure and volume as the plunger drops (Boyle's law)?

Pressure Increases /
Volume Decreases



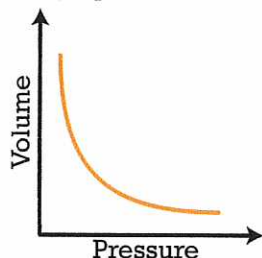
20. How does a decrease in temperature affect the pressure of the gas?

Decreases Pressure

21. Why might a balloon pop on a very hot day?

As temperature increases, volume increases so the balloon could pop.

22. Refer to the graph below to answer the following questions. **Note: The Temperature is Constant!**

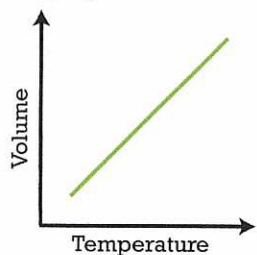


a) As Pressure Increases, Volume Decreases.

b) As Pressure Decreases, Volume Increases.

c) What Gas Law is demonstrated by the graph? Boyle's Law

23. Refer to the graph below to answer the following questions. **Note: The Pressure is Constant!**



a) As Temperature Increases, Volume Increases.

b) As Temperature Decreases, Volume Decreases.

c) What Gas Law is demonstrated by the graph?

Charles's Law