

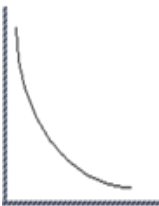
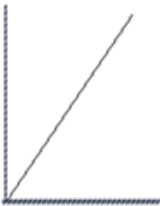
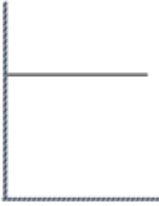
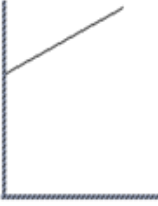
Name _____ Period _____ Date _____ Seat _____

Unit 2 and 3 Study Guide

Objectives	Define or give an example
1. Describe the characteristics of solids, in terms of particles and their arrangement: use particle diagrams to account for motion and density differences;	
2. What is meant by “lattice”?	
3. Describe melting.	
4. Describe freezing	
5. Describe the characteristics of liquids, in terms of particles and their arrangement: use particle diagrams to account for motion and density differences;	
6. Describe evaporation.	
7. Describe condensation	
8. Describe the characteristics of gases, in terms of particles and their arrangement: use particle diagrams to account for motion and density differences;	
9. States of matter, change of state and phase change.	
10. Attractive and repulsive (repelling) forces.	
11. Explain temperature. What causes temperature?	
12. What is a fluid.	

12. <i>What is kinetic energy?</i>	
13. Relate temperature to the kinetic energy and the speed of the particles. Expansion: Contraction:	Hot: Cold:
14. Explain, at the particle level, why the level in a thermometer rises when it is placed in a warmer fluid. Explain with the three step process: heat transfer, speed of molecules, expansion/ contraction,	1. 2. 3.
15. Explain why the level in a thermometer rises when it is placed in a warmer fluid.	1. 2. 3.
16. Describe the Celsius temperature scale.	
17. State the basic tenets of the Kinetic Molecular Theory (KMT).	
18. What is heat? Explain heat flow.	
19. Explain the difference between temperature and heat.	
20. What is energy?	
21. Explain pressure. What causes pressure?	
22. Molecule	
23. Atom	

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<p>24. Identify the following graphs and label the relationship: pressure vs. volume, pressure vs. number of particles, pressure vs. temperature (Celsius & Kelvin), volume vs. temperature.</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>A</p>  </div> <div style="text-align: center;"> <p>B</p>  </div> <div style="text-align: center;"> <p>C</p>  </div> <div style="text-align: center;"> <p>D</p>  </div> </div>	
<p>25. The 4 variables P, V, T, & n are interrelated. Any factor that affects the number of collisions has an effect on the pressure. You should be able to:</p> <ul style="list-style-type: none"> Predict the effect of changing P, V or T on any of the other variables. $P \propto \frac{1}{V} \quad P \propto T \quad V \propto T \quad P \propto n$ <ul style="list-style-type: none"> Explain (in terms of the collisions of particles) why the change has the effect you predicted. 	
<p>26. What is the relationship between pressure and volume?</p>	
<p>27. What is the relationship between pressure and number of particles</p>	
<p>28. What is the relationship between pressure and temperature?</p>	
<p>29. Explain the basis for the Kelvin scale. Compare and contrast the freezing point and boiling point of water for both temperature scales.</p>	
<p>30. How are Celsius and Kelvin (absolute) temperature scales different?</p>	
<p>31. Relate temperature to the thermal energy (Eth) of particles in motion.</p>	

32. Describe thermal energy. Is this Potential or kinetic energy?	
33. Describe phase energy. Is this Potential or kinetic energy?	
34. Draw the heating curve (graph) for water; <ul style="list-style-type: none"> • <u>label the phase change on the graph;</u> • <i>identify which energy mode (E_{th} or E_{ph}) is changing for the various portions of the curve; and</i> • <u>label the state or states of matter on the graph .</u> 	
35. Draw the graph that represents what happens to the energy of particles and the phase changes when energy is removed. (Hint: it is the reverse of the Icy – Hot lab graph.) What is this process called?	
36. Solute	
37. Solvent	
38. Example of gas diffusion	
39. Example of liquid diffusion	
40. What caused the diffusion (mixing) of particles?	
41. What is the relationship between pressure and volume?	
42. What is the relationship between pressure and temperature?	
43. Describe three ways in which energy is transferred between system and surroundings. <ul style="list-style-type: none"> • System: the thing that is being studied including the container. • Surrounding: everything else. 	