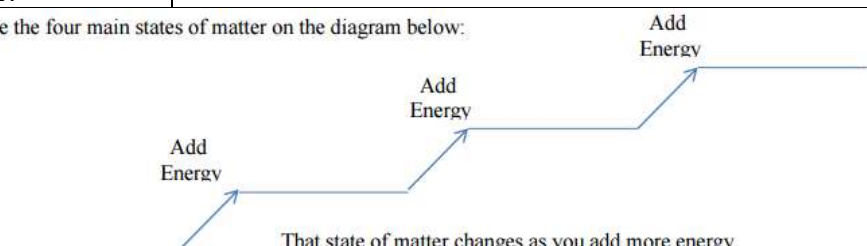


States of Matter WebQuest

PART 1: http://www.chem4kids.com/files/matter_states.html

1. List the four main states of matter:	
2. Place the four main states of matter on the diagram below:	 <p style="text-align: center;">That state of matter changes as you add more energy.</p>
3. If a substance changes from one phase to another, is it still the same substance? Why?	
<ul style="list-style-type: none"> • Scroll up and click on the SOLIDS link on the right side of the screen. 	
4. What are some physical characteristics of a solid?	
5. Draw what the atoms in a solid look like in the box to the right.	<div style="border: 1px solid orange; width: 40px; height: 40px; display: inline-block; vertical-align: middle;"></div> <p>Are the atoms in a solid allowed to move around much? _____</p> <p>How do they move? _____</p>
<ul style="list-style-type: none"> • Scroll back up and click on the LIQUIDS link on the right side of the screen. 	
7. What is one characteristic of a liquid?	
<ul style="list-style-type: none"> • Now scroll up and click PHASE CHANGE 1. 	
8. Atoms in a liquid have _____ energy than atoms in a solid, so the easiest way to change a solid to a liquid is to add _____.	
9. To change a gas to a liquid, you will need to lower the _____.	
<ul style="list-style-type: none"> • Scroll back up and click on the GAS link on the right hand side of your screen. 	
10. Gases are really _____ and the atoms and molecules are full of _____, bouncing around constantly.	
11. One of the physical characteristics is that a gas can _____.	

PART 2: http://www.harcourtschool.com/activity/states_of_matter/

Click on GAS	
12. Describe what you see in the beaker (the purple thing).	
13. Describe what you see in the chamber (the big round thing).	
14. What does the description say about the amount of space between gas molecules?	
Click on LIQUID	
15. Describe what you see in the beaker (the purple thing).	
16. Describe what you see in the chamber (the big round thing).	
17. What does the description say about the arrangement of particles?	
Click on SOLID	
18. Describe what you see in the beaker (the purple thing).	
19. Describe what you see in the chamber (the big round thing).	
20. What does the description say about the arrangement of particles?	

PART 3: <http://www.harcourtschool.com/activity/hotplate/index.html>

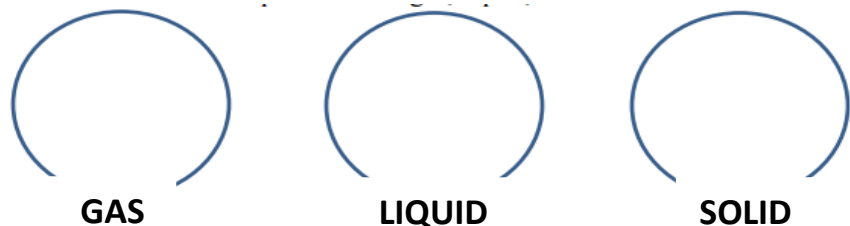
21. Drag each of the substances onto the hot plate. Pay close attention to what happens. Record the temperature at which the substances melt, and then boil:

Object placed on hot plate	Melting Point (°C)	Boiling Point (°C)
White Ice		
Purple Rock		
Green Balls		

- Do all substances have the same melting and boiling temperature? _____
- Could boiling and melting temperature be a characteristic used to identify substances? _____

PART 4: <http://www.chem.purdue.edu/gchelp/atoms/states.html>

22. Draw and label the Microscopic view of a gas, liquid, and solid.



23. **Particles in a:**

- Gases are well _____ with _____ regular arrangement.
- Liquids are _____ with _____ regular arrangement
- Solids are _____, usually in a regular pattern.

24. **Particles in a:**

- Gas _____ and move _____ at high speeds.
- Liquid _____, move about, and _____.
- Solid _____ (jiggle), but generally do not _____

25. _____ and _____ are often referred to as condensed phases because the particles are _____.

26. Fill in the missing parts of the table.

Characteristics of Gases, Liquids and Solids and the Microscopic Explanation for the Behavior		
Gas	Liquid	Solid

27. Use the chart to identify the state of matter described by the following. Many of these have more than one answer! Write solid, liquid, or gas in the spaces below.

	not easily compressible
	rigid – particles are locked into place
	flows easily
	Compressible
	lots of free space between particles
	does not flow easily
	assumes the shape of the part of the container that it occupies
	particles can move past one another
	retains a fixed volume and shape
	assumes the shape and volume of its container
	little free space between particles

Part 5: Go to the following website.

http://www.bbc.co.uk/schools/scienceclips/ages/9_10/changing_state.shtml

28. At what temperature does water become a solid? _____

29. At what temperature does water become a gas? _____

30. What happens to the container if you increase the temperature past the gas state? _____

31. Take the quiz, what was your score? _____