

# Phases of Matter Webquest

## Task #1

Go to [http://www.chem4kids.com/files/matter\\_changes.html](http://www.chem4kids.com/files/matter_changes.html) to answer the following questions.

Fill in the blanks in the following chart:

1. When do states of matter change states (phase change)?
2. What do scientists use to determine when a liquid turns into a solid?
3. What happens to the freezing point when the pressure surrounding a substance goes up?
4. When it gets colder, what happens to the size of solids?
5. What does an ice cube (a solid) need to become a liquid?
6. What does a solid have to reach in order to become a liquid?
7. What needs to happen before a gas can become a liquid?
8. When a gas becomes a liquid, what is this called?

<u>Term</u>	<u>Phase Change</u>
Fusion/Melting	
	Liquid to Solid
Vaporization/Boiling	
Condensation	
	Solid to Gas
	Gas to Solid

## Task #2

Click on this link <http://www.enchantedlearning.com/physics/Phasesofmatter.shtml> to answer the following questions

9. What is the 4<sup>th</sup> state of matter?
10. When a solid is heated, what happens to the pressure?
11. When a solid goes directly to a gas, what is that called? Provide an example.
12. Describe the molecules in a solid, liquid, gas and plasma.  
Solid: \_\_\_\_\_ Liquid: \_\_\_\_\_  
Gas: \_\_\_\_\_ Plasma: \_\_\_\_\_

## Task #3

Go to <https://www.quia.com/custom/2202gate.html> and play the matching game until you get a 100%

13. Which definitions did you need help with?

## Task #4

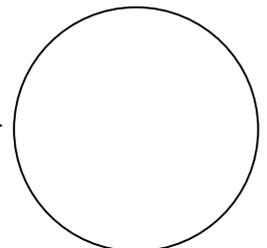
Go to the following site to watch the molecules move in the different phases of matter.

[http://www.harcourtschool.com/activity/states\\_of\\_matter/](http://www.harcourtschool.com/activity/states_of_matter/)

### Click on Gas

14. Describe what you see in the beaker (the purple thing).
15. Describe what you see in the chamber (the big round thing).
16. What does the description say about the amount of space between gas molecules?

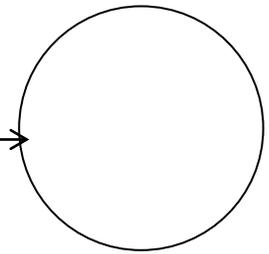
Draw how molecules look in the gas phase in the circle



**Click on Liquid**

17. Describe what you see in the beaker (the purple thing).
18. Describe what you see in the chamber (the big round thing).
19. What does the description say about the arrangement of the particles?

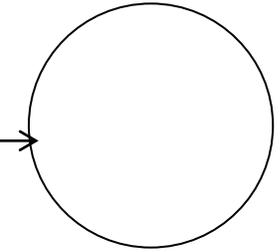
Draw how molecules look in the liquid phase in the circle →



**Click on Solid**

20. Describe what you see in the beaker (the purple thing).
21. Describe what you see in the chamber (the big round thing).
22. What does the description say about how the particles are arranged?

Draw how molecules look in the solid phase in the circle →



## Task #5

Fill in the chart below using this site as a reference: <http://www.chem.purdue.edu/gchelp/atoms/states.html>

Some Characteristics of Gases, Liquids and Solids and the Microscopic Explanation for the Behavior		
gas	liquid	solid

Use the chart above to identify the state of matter described by the following. Many of these may have more than one answer! (Use S, L, or G in the spaces to the left)

- |  |   |
|--|---|
| _____ Not easily compressible                                    | _____ Does not flow easily                          |
| _____ Rigid- particles locked into place                         | _____ Particles can move past one another           |
| _____ Flows easily   | _____ Retains a fixed volume and shape              |
| _____ Compressible   | _____ Assumes the shape and volume of its container |
| _____ Lots of free space between particles                       | _____ Little free space between particles           |
| _____ Assumes the shape of the part of the container it occupies |   |

## Task #6

Go to the following site <http://www.harcourtschool.com/activity/hotplate/>

Place all 3 substances in the beaker and record the melting and boiling points for all 3 substances.

Then draw the graph for **WATER**.

Substance	Melting Point	Boiling Point
Ice/water		
Purple Crystal		
Green Circles		

