**States of Matter WebQuest**


1. List the four main states of matter:

<table>
<thead>
<tr>
<th>State of Matter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOLIDS</td>
<td></td>
</tr>
<tr>
<td>LIQUIDS</td>
<td></td>
</tr>
<tr>
<td>GAS</td>
<td></td>
</tr>
</tbody>
</table>

2. Place the four main states of matter on the diagram below:

3. If a substance changes from one phase to another, is it still the same substance? Why?

   - Scroll up and click on the SOLIDS link on the right side of the screen.

4. What are some physical characteristics of a solid?

   - Are the atoms in a solid allowed to move around much? How do they move?

   - Scroll back up and click on the LIQUIDS link on the right side of the screen.

5. Draw what the atoms in a solid look like in the box to the right.

6. What is one characteristic of a liquid?

   - Now scroll up and click PHASE CHANGE 1.

7. What is one characteristic of a liquid?

   - Scroll back up and click on the GAS link on the right hand side of your screen.

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 __________.

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 _______________.


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?

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?

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?


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:

<table>
<thead>
<tr>
<th>Object placed on hot plate</th>
<th>Melting Point (°C)</th>
<th>Boiling Point (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>White Ice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purple Rock</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green Balls</td>
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</tr>
</tbody>
</table>

- 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.

<p>| Characteristics of Gases, Liquids and Solids and the Microscopic Explanation for the Behavior |</p>
<table>
<thead>
<tr>
<th>Gas</th>
<th>Liquid</th>
<th>Solid</th>
</tr>
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</table>

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.

<p>| | | |</p>
<table>
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</table>

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? ________