Essential Question

How do we describe matter?

Vocabulary

<table>
<thead>
<tr>
<th>Matter</th>
<th>Physical Property</th>
<th>Chemical Property</th>
<th>Disposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas</td>
<td>Plasma</td>
<td>Liquid</td>
<td>Vaporization</td>
</tr>
<tr>
<td>Melting</td>
<td>Freezing</td>
<td>Sublimation</td>
<td>Condensation</td>
</tr>
<tr>
<td>Chemical Change</td>
<td>Physical Change</td>
<td>Solid</td>
<td>Phase Change</td>
</tr>
</tbody>
</table>

Absolute Zero: evaporation/boiling; Bose-Einstein Condensate; atoms
Mixture: heterogeneous mixture; homogeneous mixture; molecule

Learning Targets (Objectives)

1. Identify and describe the two characteristics of all matter
2. Identify the significance of atoms
3. Compare and contrast the results of atomic bonding (compounds & molecules)
4. Describe a mixture and the two main types (heterogeneous and homogenous)
5. Differentiate between the physical and chemical properties of matter
6. Describe the five states of matter and how they differ at the molecular level
7. Describe how energy (heat) affects the particles that make up matter
8. Describe density and how to use the density formula to calculate it
9. Name and describe the processes that occur as matter undergoes phase changes (freezing, melting, evaporation/vaporization, sublimation, condensation, disposition, ionization)
10. Identify examples of physical and chemical changes

Helpful Websites

- [http://education.jlab.org/atomtour/](http://education.jlab.org/atomtour/) (atoms)
- [http://education.jlab.org/qas/compound.html](http://education.jlab.org/qas/compound.html) (compounds and molecules)
- [http://www.school-for-champions.com/chemistry/mixtures.htm](http://www.school-for-champions.com/chemistry/mixtures.htm) (mixtures)
http://www.harcourtschool.com/activity/mixture/mixture.html (mixtures lab + interactive)
http://www.school-for-champions.com/science/matterstates.htm (3 phases)
http://cwx.prenhall.com/petrucci/chapter1/medialib/0105.html (3 phases of water + animations)
http://www.scienceclarified.com/Ma-Mu/Matter-States.html (phases of matter + overview)
http://www.visionlearning.com/library/module_viewer.php?mid=120&l=&c3 (phases of matter + animations)
http://www.dac.neu.edu/physics/b.maheswaran/phy1121/data/ch04/anim/anim0402.htm (phases of matter + animations)
http://www.miamisci.org/af/sln/phases/ (heat & 3 phases of matter + animations)
http://id.mind.net/~zona/mstm/physics/mechanics/energy/heatAndTemperature/changesOfPhase/changeOfState.html (changing phases of matter)
http://www.school-for-champions.com/science/matterstates_changing.htm (changing phases of matter)
http://www.learner.org/channel/courses/essential/physicalsci/session4/closer.html (videos)
http://www.teacherbridge.org/public/bhs/teachers/Dana/chemphys.html (quiz)
http://www.nisd.net/secww/science/science-taks/quiz14/physical%20quiz.htm (quiz)
http://www.mcwdn.org/chemist/pcchange.html (physical and chemical changes)
http://science.nasa.gov/headlines/y2002/20mar_newmatter.htm
http://science.nasa.gov/headlines/y2004/12feb_fermi.htm

*You are not responsible for this information, it was just interesting*