**Physical Properties Chapter 2.2 Notes Mr. Rita**

**Physical Properties** – any characteristic that can be observed or measured without changing or destroying the substance

Examples of Physical Properties

1. Viscosity – the resistance to flowing
   * 1. Vinegar – low viscosity
     2. Syrup – high viscosity

- How does heat affect viscosity?

\* Viscosity decreases as heat increases

b) Conductivity – a material’s ability for energy to flows

What is a good conductor heat?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is a bad conductor of heat?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Malleability – ability of a solid to be hammered without shattering

What materials are malleable?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What materials are not malleable?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Hardness – Moh’s scale (*remember this from studying minerals*??)
2. Melting / boiling points
   * 1. Melting point – changes from a solid to a liquid
     2. Boiling point – changes from a liquid to a gas
3. Density – The fingerprint (purity) of a substance (Identifies the substance)
   * 1. Example: Anything aluminum, no matter what the size, has a mass of 2.7grams/milliter
     2. Found by calculation:

Density = Mass

Volume

A physical change occurs when the properties of a material change but the substance still remains the same.

Check if the following actions are a physical change or not a physical change.

|  |  |  |
| --- | --- | --- |
|  | Physical Change | Not a physical change |
| Sharpening a pencil |  |  |
| Scrambling an egg |  |  |
| Shredding paper |  |  |
| Cutting your hair |  |  |
| Burning wood |  |  |

**Discuss the difference between the terms Filtration and Distillation. What can distillation do that filtration cannot? When would you use one over another?**

**How did Archimeedes use density to solve the “Crown” problem?**

**With your group of no more than 2, use the above information to write a solution to the mystery stated below.**

**PS CSI 1**

A statue made of pure platinum ($1250.00/gm) was stolen from the National Museum. The thief ground the statue up into powder and hid it in his apartment, intending to recover it at a later date. A search of the apartment revealed no signs of the powder. The only object not searched was the thief’s salt water fish tank. It is suspected that the remnants of the statue are somewhere in the fish tank. The tank was delivered to your lab at PS CSI for examination and a hopeful recovery of the platinum. Explain how you could use Filtration, Distillation, and Physical properties to complete this task.

Save your solution as a Word document and submit it to me in my Drop Folder as:

(period) **.** CSI1(First3letters)(First3letters)