**Volume and Mass Inquiry Activity Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block: \_\_\_\_\_\_**

**Purpose – to learn how to determine volume and mass and to see how those two values can be compared**

**Note\* –** *please take precise measurements and include units (mL, cm3 or g) in your answers*

**Class Demo: Comparing 2 different ways of finding the volume of irregular shaped objects**

|  |  |
| --- | --- |
| * **Graduated cylinder**
* **Small beaker**
* **Water**
* **Rock**
 | * **Overflow can**
* **Graduated cylinder**
* **Water**
* **Rock**
 |
| 1. **Rock – Graduated cylinder**
 | 1. **Rock – Overflow can**
 |
| Volume measured with water displacement:Initial volume of water: \_\_\_\_\_\_Volume after the object is added: \_\_\_\_\_\_\_Volume of the object: \_\_\_\_\_\_\_ | Volume measured with the overflow can and graduated cylinder:Measure it 3 times and take an average:Trial #1: \_\_\_\_\_\_Trial #2: \_\_\_\_\_\_Trial #3: \_\_\_\_\_\_Average: \_\_\_\_\_\_ |
| Compare and contrast the 2 different methods of measuring volume? Which is better and why? |

**Comparing Mass and Volume of Solids**

* Triple Beam Balance
* a metal rod (copper, aluminum or brass)
* graduated cylinder
* small beaker – filled with water

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| --- | --- | --- |
| 1. **Copper**
 | 1. **Brass**
 | 1. **Aluminum**
 |
| Volume measured with water displacement:Initial volume of water: \_\_\_\_\_\_Volume after the object is added: \_\_\_\_\_\_\_Volume of the object: \_\_\_\_\_\_\_ | Volume measured with water displacement:Initial volume of water: \_\_\_\_\_\_Volume after the object is added: \_\_\_\_\_\_\_Volume of the object: \_\_\_\_\_\_\_ | Volume measured with water displacement:Initial volume of water: \_\_\_\_\_\_Volume after the object is added: \_\_\_\_\_\_\_Volume of the object: \_\_\_\_\_\_\_ |
| Mass measured on the trip beam balance:  | Mass measured on the trip beam balance:  | Mass measured on the trip beam balance:  |
| Compare and contrast the 3 metals rods in terms of mass and volume: |
| Density: | Density: | Density: |

**Comparing Mass and Volume of Liquids**

* Triple beam balance
* Graduated cylinder
* Small beaker
* 50 mL of solution

|  |  |  |
| --- | --- | --- |
| 1. **Sugar solution**
 | 1. **Salt Solution**
 | 1. **Water solution**
 |
| Volume:  | Volume: | Volume: |
| Mass of cylinder: \_\_\_\_\_\_Mass of cylinder + liquid: \_\_\_\_\_Mass of the liquid: \_\_\_\_\_\_ | Mass of cylinder: \_\_\_\_\_\_Mass of cylinder + liquid: \_\_\_\_\_Mass of the liquid: \_\_\_\_\_\_ | Mass of cylinder: \_\_\_\_\_\_Mass of cylinder + liquid: \_\_\_\_\_Mass of the liquid: \_\_\_\_\_\_ |
| Compare and contrast the 3 solutions (***sugar***, ***salt*** and ***water***) in terms of Density. How would the solutions be layed? |
| Density:  | Density: | Density: |