**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**

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| * **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

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| 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: |