Virtual Density Lab Assignment

**Purpose:**Density is a physical property of matter. Every element has a unique density. Now that you have learned that density plays an important role in the formation of the layers of the earth and the elements found in each layer, let’s learn more about density.

Pre Lab Questions

Directions: Use this website, <http://ippex.pppl.gov/interactive/> , to answer the following questions

Click on the Mass, Volume, and Density icon

1. Mass, volume, and density are physical properties of an object. What is a physical property?
2. The amount of matter in an object is called its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. The amount of space an object occupies is called its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
4. How do you find the volume of a rectangle?
5. Explain how to find the fluid displacement of an object by using a graduated cylinder.
6. For equal volume objects, the object with the bigger mass will have a

greater/smaller (circle one) density.

1. The denser the plasma, the closer/further-apart (circle one)the particles are and the more/less (circle one) they collide to release large amounts of energy through \_\_\_\_\_\_\_\_\_\_\_\_\_.

Density can be calculated by dividing mass by volume. d=m/v   Mass is measured in grams and volume is measured in milliliters. It is possible to find the density of an object by measuring its mass and then the amount of water it displaces.

**Procedure:** Go to the following website and complete the data table below to find the density of the objects.

[Explore Science - Density Virtual Lab](http://ww2.unime.it/weblab/mirror/ExplrSci/dswmedia/density.htm)

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Directions:

* Select an object and use your mouse to drag it onto the scale; record the mass
* Next, drag the object to the graduated cylinder and record how much water it displaces
* Finally, drag the object to the pail of water to see if the object floats or sinks.
* Complete the table by ranking the density of each object from lowest (1) to highest (10) density.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Description | Mass (g) | Volume (ml) | Density (g/ml) | Does it float? | Rank |
| Blue square |  |  |  |  |  |
| Blue triangle |  |  |  |  |  |
| Red square |  |  |  |  |  |
| Red Oval |  |  |  |  |  |
| Pink Square |  |  |  |  |  |
| Purple Oval |  |  |  |  |  |
| Green Triangle |  |  |  |  |  |
| Grey Triangle |  |  |  |  |  |
| Tan Rectangle |  |  |  |  |  |
| Red/Black Rectangle |  |  |  |  |  |

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Questions:

1)What is the density of water?

2)Do you notice any correlation (Pattern) between the density of an object and the ability of the

object to sink or float?

2) Which object has the greatest volume? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the least? \_\_\_\_\_\_\_\_\_\_\_\_\_

3) Which object has the greatest mass? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the least? \_\_\_\_\_\_\_\_\_\_\_\_\_

4) Which object has the greatest density?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the least? \_\_\_\_\_\_\_\_\_\_\_\_\_