Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Measurement Lab: Grade 9 Science

***Part I:*** Answer the following questions together with your table.

1. Describe the difference between MASS and WEIGHT.
2. Find the volume of the following objects.
   1. A cereal box: l = 12cm, h = 22cm, w = 5cm.
   2. A DVD case: l = 8cm, h = 10.5cm, w = 2.5cm
3. Find the density of the following objects:
   1. A cube with a volume of 48 cubic cm and a mass of 144g.
   2. A sphere with a mass of 84.5kg and a volume of 5 cubic liters.
4. Why is the unit for density made up of two different units?
5. Use the temperature formulae to convert the following temperatures.
   1. How many degrees C are equal to 426 degrees K?
   2. How many degrees K are equal to 32 degrees C?
   3. Challenge: How many degrees K are equal to 212 degrees F?
6. Why is the Kelvin scale useful?
7. Convert the following:
   1. 36.4 km to meters.
   2. 11.2 mm to cm.
   3. 64 hours to minutes.
   4. 3452 seconds to minutes.
   5. 5.53 L to mL.
   6. 3425 mL to L.
   7. 2345 m to km.
   8. 2134 mm to meters.
   9. 1 year to hours.

***Part II***

**Record the mass of each of the objects at your table in grams using the Triple Beam Balance.**

Object A:

Object B:

Object C:

Object D:

Prism A:

Prism B:

Prism C:

**Find the volume of each of the rectangular prisms on your table in centimeters.**

Prism A:

Prism B:

Prism C:

**Find the density of each of the rectangular prisms at your table in grams per cubic centimeter.**

Prism A:

Prism B:

Prism C:

**Find the volume of each of the following objects on your table using the Displacement Method in cubic centimeters.**

Object A:

Object B:

Object C:

**Find the density of each of the following objects in grams per cubic centimeter.**

Object A:

Object B:

Object C:

**Record the Boiling Point for each of the beakers at your table in degrees Celsius.**

|  |  |
| --- | --- |
| Beaker A |  |
| Beaker B |  |
| Beaker C |  |

***Part III***

**Convert the mass of each of the objects and rectangular prisms to milligrams and kilograms.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | grams | milligrams | kilograms |
| Object A |  |  |  |
| Object B |  |  |  |
| Object C |  |  |  |
| Object D |  |  |  |
| Prism A |  |  |  |
| Prism B |  |  |  |
| Prism C |  |  |  |

**Use the chart below to identify the liquids in each of the beakers you have brought to a boil.**

|  |  |
| --- | --- |
| **Substance** | **Boiling Point** |
| Fresh Water | 373 degrees K |
| Salt Water | > 373 degrees K |

Beaker A: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Beaker B: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Beaker C: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**To raise the boiling point of 250 ml of fresh water by 1 degree Celsius, 14.5 g of salt must be added. Based on this information,** how much salt **was added to each of the beakers that you have identified containing salt water?**

Beaker:\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_mg of salt.

Beaker:\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_mg of salt.

Space for Calculations