

# Metric Measuring Madness

Earth Science

Mr. Traeger

Name: \_\_\_\_\_ Period: \_\_\_\_\_ Date: \_\_\_\_\_

Partner's name: \_\_\_\_\_

Points: / 20

**Purpose**

To become familiar with and/or to review metric measurements and calculations.

**Materials**

- bathroom scale
- triple beam balance
- dice
- Irregularly shaped mineral (galena works best)
- meter stick
- calculator
- 100 mL graduated cylinder
- water

**Procedure**

Find the answers to the following items and express your measurements in the most appropriate units. Make sure to put units after the number that you measured. Use centimeters for distance measurement in this lab. ***You will not get credit if you do not include units!***

**Some Potentially Helpful Formulas**

- area of a rectangle = length x width
- volume of a rectangular box = length x width x height
- 1 milliliter = 1 centimeter<sup>3</sup>
- density = mass/volume

**Do all distance measurements in centimeters!**

Question (1.5 points each)	Answer (make sure to <u>show your calculations!</u> )	What are the <u>appropriate metric units</u> for this measurement?	What <u>type</u> of measurement is this (distance, volume, mass, area, or density)?
1. What is your <b>mass</b> ? What are the <b>units</b> for this type of measurement?	Look at the lower scale on the bathroom scale at the front of the room		
2. What are the separate <b>dimensions</b> (length, width, and height) of your lab table? What are the <b>units</b> for this type of measurement?			
3. What is the <b>area</b> of your lab table? What are the <b>units</b> for this type of measurement?	Use length times width		
4. Imagine that your lab table is one big box. What would be the <b>volume</b> of your lab table? What are the <b>units</b> for this type of measurement?	Use length times width times height		

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5. On the side counters, you will find a triple beam balance and some dice. What are the separate <b>dimensions</b> of one of the dice? What are the <b>units</b> for this type of measurement?			
6. What is the <b>mass</b> of one of the dice? What are the <b>units</b> for this type of measurement?	Measure using triple beam balance.		
7. What is the <b>volume</b> of one of the dice? What are the <b>units</b> for this type of measurement?	Multiply side x side x side		
8. What is the <b>density</b> of one of the dice? What are the <b>units</b> for this type of measurement?	Take mass of die and divide by volume of die.		
9. Next to the triple beam balance, you will find an irregularly shaped mineral and a graduated cylinder. What is the mass of the mineral? What are the <b>units</b> for this type of measurement?			
10. What is the volume of the mineral? What are the <b>units</b> for this type of measurement? What was the only method that you could use to find the volume of an irregularly shaped object?	Drop mineral in water in graduated cylinder.  Volume After:  Volume Before: _____  Volume:		
11. What is the density of the mineral? What are the <b>units</b> for this type of measurement?	Take mass of mineral and divide it by volume of mineral		

### Conclusion (2 points)

How comfortable do you feel with metric measurements and calculations after doing this activity? Could you do this by yourself if you had to?