

COMPLETION OF THIS PAPER IS REQUIRED. SUGGESTED DUE DATE IS: _____

Name: _____ Date: _____ Period: _____

1

Measurements and Calculations (CHEMACTIVITY: Metric System)

How Are Measurements and Calculations Important in the Science of Chemistry?

2 – Mastered

1 – Not Yet Mastered

0 - Incomplete

1. **On your own...** Read Sections 5.1B and 5.1C on pp. 129-132. In addition, Use www.google.com to perform a search for “Metric System” or “history of metric system” and answer the following...
2. What country was the first to officially adopt the metric system? When?

3. What is the “SI” system of measurement? Compare and contrast this system with the “regular” metric and English systems:

4. What is the “SI” unit and correct abbreviation for...

- Mass:
- Length:
- Time:
- Amount of Substance:

5. Suggest a possible reason why the gram is NOT the SI base unit for mass:

6. What is meant by the phrase “derived unit”? Give an example of a metric (or SI) unit that is “derived”:

7. Arrange the following prefixes used in the metric system in order from *largest* on the left to the *smallest*. Give the value represented by each prefix and the abbreviation used for each:

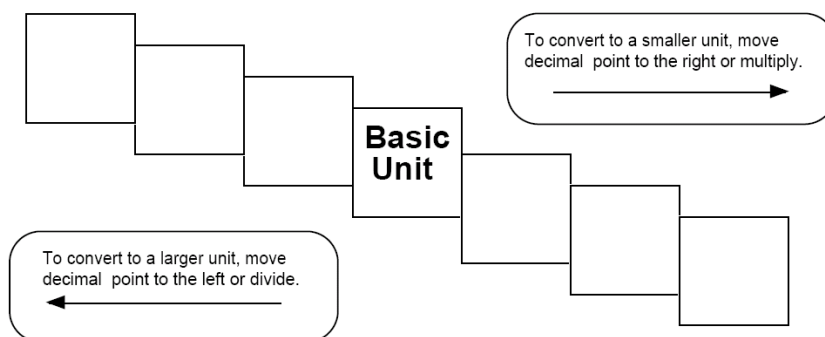
nano- micro- giga- mega- centi- deci- deka- pico- hecto- tera- milli- kilo-

LARGE _____ SMALL

VALUE _____

ABBR _____

8. Fill-in the empty blocks in the graphic below with the kilo- to milli- range of units from above. Explain how this “ladder” can be used to complete simple metric to metric conversions:



9. Practice the following metric to metric conversions:

2000 mg = _____ g

5 L = _____ mL

16 cm = _____ mm

104 km = _____ m

198 g = _____ kg

2500 m = _____ km

8 mm = _____ cm

5.6 m = _____ cm

120 mg = _____ g

10. Compare the following pairs of measurements using <, >, or =

63 cm _____ 6 m

5 g _____ 508 mg

1, 500 mL _____ 1.5 L

536 cm _____ 53.6 dm

43 mg _____ 5 g

3.6 m _____ 36 cm

Essential Content and Skills:

What are the similarities and differences between the English, Metric, and International (SI) systems of measurement?
What are the common SI base units and common prefixes used in measurements?