

Name: _____

Due: _____

Unit 1 Academic Chemistry Study Guide

Goals & Standards

- I can make and convert measurements using the metric system.
- I can set up a problem using dimensional analysis.
- I can compare accuracy and precision.
- I can label glassware correctly and safely set up an experiment.
- I can calculate density and identify an unknown metal.
- I can calculate percent error and identify sources of error.
- I can convert numbers into scientific notation.

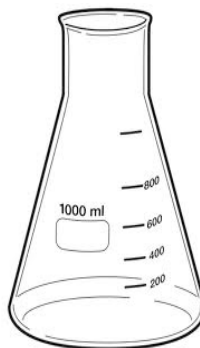
Practice Problems

- 1) Mass can be measured in _____. Length can be measured in _____. Temperature can be measured in _____. Volume could be measured in _____ or _____.
- 2) How many cm are equivalent to 5.52 m? Use dimensional analysis.
- 3) How many L are equivalent to 35mL? Use dimensional analysis.
- 4) How many kg are equivalent to 872mg? Use dimensional analysis.
- 5) Lord of the Rings is approximately 2.5 hours long. How many seconds long is the movie?
- 6) A student measures a 4.00 ft chemistry desk and records 8.00 ft, 9.00 ft, and 8.50 ft. Is the student accurate, precise, both, or none? Explain your answer.
- 7) An unknown chunk of metal weighs 25.2 g and takes up 5.6cm³ of space.
 - a. Calculate the density of the metal.
 - b. Use your reference table to determine the identity of the metal. _____
 - c. If you had 75.3cm³ of the metal, what would the mass be?

8) Complete the table:

Number	Scientific Notation	Significant Figures
402000		
0.0003012		
	3.38×10^{-4}	
	6.1×10^7	

9) Identify the glassware and list the appropriate use for each one.



NCFE Multiple Choice Practice

10) Which of the following masses is the largest?

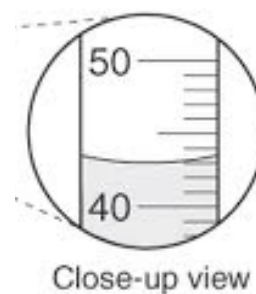
- a. Microgram
- b. Milligram
- c. Gram
- d. Kilogram

11) How many centimeters are in one meter?

- a. 1
- b. 10
- c. 100
- d. 1000

12) The following image is a graduated cylinder holding water. What is the volume of water? Estimate using correct significant figures.

- a. 40mL
- b. 43mL
- c. 43.1mL
- d. 45.50mL



13) The diameter of a francium atom is 0.000000000348 m. What is this number expressed in scientific notation?

- a. 3.48×10^9 m
- b. 3.48×10^{-9} m
- c. 3.48×10^{10} m
- d. 3.48×10^{-10} m

14) How many liters is 52.5 milliliters equivalent to?

- a. 5.25 L
- b. 0.525 L
- c. 0.0525 L
- d. 525 L