Chapter 1-2 Self-Assessment of the Learning Goals

For each of the learning goals from this chapter rate yourself according to the following scale:

1 I'm a **NOVICE**. I sort of know what the topic is about but need a lot of help.	2 I'm an **APPRENTICE**. I have some understanding, but still need additional help.	3 I'm a **PRACTITIONER**. I understand the topic fairly well but occasionally have a question.	4 I'm an **EXPERT**. I understand the topic well enough that I could teach it to a classmate.	*Your goal is to reach or pass practitioner level by the day of the test.*
	Define physical and chemical property.	I can recognize examples of physical and chemical properties.	Given a property of an element/compound I can distinguish if it is chemical or physical.	2a. Distinguish between physical and chemical properties.
	Define physical and chemical change.	I can recognize examples of physical and chemical changes.	Given an example of a change in matter I can classify the change as chemical or physical.	2b. Classify changes in matter as chemical or physical.
Define 2 of the following homogeneous mixture, heterogeneous mixture, element and compound.	Define the following homogeneous mixture, heterogeneous mixture, element and compound.	Give examples of homogeneous mixture, heterogeneous mixture, element and compound.	Classify a given example of matter as homogeneous mixture, heterogeneous mixture, element and compound.	2c. Classify matter as a mixture (homogeneous/heterogeneous) or a pure substance (element/compound).
Characterize metals, non metals and metalloids.	Locate metals, non metals and metalloids and on the periodic table.	Classify an element as a metals, non metals and metalloids as such based on physically observed properties or placement on the periodic table	Characterize metals, non metals and metalloids and classify elements as such based on properties as well as placement on the periodic table.	3. Characterize metals, non metals and metalloids and classify elements as such based on properties as well as placement on the periodic table.
List some of the steps of the scientific method.	List all of the steps of the scientific method.	Describe what some of the steps of the scientific method entail.	Know what each step of the scientific method entails.	1a. Describe the steps of the scientific method.
Define observation or interpretation (inference).	Define observation and interpretation (inference).	Recognize a given statement as an observation.	Classify a statement as an observation or an interpretation (inference).	1b. Classify a statement as an observation or an interpretation (inference).
Define density.	Recognize quantities of mass, volume and density by the unit measured.	Know the algebraic equation for calculating density.	Substitute quantities of mass, volume and/or density into the density equation and solve for the missing variable.	2a. Utilize the density equation to calculate density, mass or volume of a substance.

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Know the following metric prefixes and what quantity they represent with respect to the base unit (meter, gram, liter): kilo- hecto- deka- deci- centi- milli- For example kilo means 1000 times the base unit or kilometer is 1000 meters.	Understand dimensional analysis is an algebraic calculation involving multiplying by conversion factors (facts) relating two quantities. Ex: 1 km/1000m	Convert between units within the metric system using dimensional analysis or moving the decimal place.	Convert between units within the same system (ex: metric) or between different systems (ex: metric to American) using dimensional analysis (or another suitable method).	2b. Convert between units within the same system (ex: metric) or between different systems (ex: metric to American) using dimensional analysis (or another suitable method).
Know the relationship between the following metric prefixes: kilo- hecto- deka- deci- centi- milli-	Have an understanding of the relative magnitude (size) of the length measurements millimeter, centimeter, meter and kilometer.	Have an understanding of the relative magnitude of the mass of an object (in grams/kilograms) or relative volume (in milliliters/liters).	Understand that quantities are best reported in easily understandable values such as numbers between 1-100 without decimals.	2c. Predict the most appropriate metric units to measure the length, volume or mass of an object.
Define accuracy, experimental value and theoretical value (also known as accepted value).	Differentiate between the experimental and accepted value in a given scenario.	Know the equation for calculating percent error.	Substitute the experimental and accepted value into the percent error formula properly.	3a. Measure the accuracy of experimentally determined values using percent error calculations.
Define significant figure.	Determine the number of significant figures in a number/measured quanitity using the rules for significant figures.	Know the rules for determining the number of significant figures in the results of mathematical operations.	Determine the number of significant figures in a measurement or for an answer from a mathematical calculation.	3b. Determine the number of significant figures in a measurement or for an answer from a mathematical calculation.
Define scientific notation or standard number form.	Define scientific notation and standard number form.	Convert numbers from scientific notation to standard number form.	Convert numbers from a standard number form to scientific notation.	3c. Convert numbers between scientific notation and standard number form.
Do one of the following: Use reasonable scales on axis, label axis, title a graph, place independent variable on the x axis, plot (X, Y) coordinates correctly.	Do some of the following: Use reasonable scales on axis, label axis, title a graph, place independent variable on the x axis, plot (X, Y) coordinates correctly.	Do most of the following: Use reasonable scales on axis, label axis, title a graph, place independent variable on the x axis, plot (X, Y) coordinates correctly.	Do all of the following: Use reasonable scales on axis, label axis, title a graph, place independent variable on the x axis, plot (X, Y) coordinates correctly.	3d. Graph two data variables to Ms. Quirarte's specifications (by hand or with a graphing program) as indicated on the graphing guidelines handout.