Chem 2.1

Goals:

\*Investigate introductory chemical properties and reactions

\*Follow proper laboratory procedures and best practices

Plan

Bellwork: Why is proper use of eyewear important? Why should food and drink not be present in the laboratory area? (5 min)

Prelab. Questions (10 min)

Lab (see handout) (50 min)

Clean-up (remainder)

HW: Post lab questions

Chem 2.2

Goals:

\*Investigate different measurement systems

\*Calculate and convert between different measurement units

\*Demonstrate use of dimensional analysis to convert units

Plan

Bellwork: Determine the length of the following items using your own shoe as the “foot” (15 minutes)

* Length of your table (long ways)
* Distance from entrance to the front of the room
* Your pen or pencil
* Your table partner
* Arm length of the classroom skeleton
* Length of a whiteboard

Cornell notes: origin of the metric system

* How were systems of measurement devised in the past?
* Hypothesize how these could be problematic for collaboration
* Contrast to the metric system and the advantages there are in a uniform measurement system

Guided practice: dimensional analysis

Application: use dimensional analysis to determine the length in meters of the objects measured in the first part of class. Determine your foot size in inches and then convert from there. (1 inch =2.54 cm)

HW: calculations of objects to meters

Chem 2.3

Goals:

\*Identify good accuracy and precision, differentiate between the two

\*Argue why significant figures are important for accuracy in reporting

Plan:

Bellwork: Determine your age as close as you can based on today’s date (5 minutes)

Class discussion: How “close” are we to the true ages in the class? Can we ever get an age that is 100% accurate? (20 min)

Compare and contrast accuracy with precision (20 min)

* Why are both important in determining measurements?
* Assess how well different data sets are based on accuracy and precision standards

Video: Crash Course Chemistry: Measurement <https://www.youtube.com/watch?v=hQpQ0hxVNTg&list=PL8dPuuaLjXtPHzzYuWy6fYEaX9mQQ8oGr&t=0s>

Discussion and guided calculation based on the example shown in the video, calculating speed

HW: Density Prelab: formula for density, conversion factors between g and kg; mL, L and cm3