Objectives

1. Qualitative Observation
   * Introduce the idea that science begins with careful observation
   * Define qualitative observation as properties we can observe using our senses
   * Develop the skill of qualitative observation through the physical properties lab
   * Consolidate the understanding of qualitative observation in the context of physical properties of materials *(Formative assessment / Observation)*
2. Periodic Table
   * Introduce the idea that scientists have used careful observation to identify the “stuff” that makes up our world
   * Develop this idea by coloring the periodic table according to a template that groups elements that share similar properties. *(Observation: done / not-done)*
3. Quantitative Observation
   * Introduce the idea that science continues with careful measurement of “stuff”
   * Define quantitative observation as properties we can measure using tools and procedures
   * Develop the skill of quantitative observation through the density lab
     + Use of ruler – Volume of regular solids
     + Displacement – Volume of irregular solids
     + Triple Beam Balance – Mass of objects
   * Introduce the idea of measurement error and the need for multiple trials.
   * Develop this idea by calculating the averages of provided measurements
   * Consolidate the understanding of quantitative observation through the recording of procedures for measuring volume and mass *(Formative assessment / Observation)*
4. Math & Analysis
   * Introduce the idea that science uses mathematical principles to help understand the world.
   * Define density as a physical property that can be calculated using a defined formula
   * Develop this idea by completing the density worksheet *(Formative assessment / Observation)*
   * Define density a linear relation that can be identified using a graph and line of best fit.
   * Develop this idea by graphing density based on provided measurements to identify a material. *(Formative assessment / Observation)*
5. Evaluation
   * Identify an unknown solid using density and qualitative observation

Lesson Order