**Chapter 2: Data Analysis**

* **Math Standards**
  + HSN-Q-A.1: Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays. (HS-PS1-7)
  + HSN-Q.A.2: Define appropriate quantities for the purpose of descriptive modeling. (HS-PS1-7)
  + HSN-Q.A.3: Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. (HS-PS1-7)
* **Essential Questions:** 
  + List the SI (metric) units for length, time, mass, and temperature.
  + Describe the relationship between mass, volume, and density of a material.
  + What is the difference between a base unit and a derived unit?
  + How many milliseconds are in a second?
  + Why does oil float on water?
  + Which of these measurements was made with the most precise measuring device: 8.1956 m, 8.20 m, or 8.19 m? Explain your answer.
  + Explain why graphing can be an important tool for analyzing data.
  + How are significant figures applied to different mathematical operations?
* **Big Ideas:**
  + SI (metric) measurement units allow scientists to report data that can be reproduced by other scientists.
  + Adding prefixes to SI units extends the range of possible measurements.
  + SI units for length, time, mass, and temperature.
  + Volume and density have derived units.
  + Scientific notation makes it easier to handle extremely large or small measurements.
  + Dimensional analysis often uses conversion factors.
  + An accurate measurement is close to the accepted value and precise measurements show little variation over a series of trials.
  + Graphs are visual representations of data.
* **Vocabulary**
  + SI (Systeme International) Units
    - Base unit
      * Second (s)
      * Meter (m)
      * Kilogram (kg)
    - Derived unit
      * Liter (L)
      * Density
      * Kelvin (K)
  + Scientific notation
  + Conversion factor
  + Dimensional analysis
  + Accuracy
  + Precision
  + Percent Error
  + Significant Figure
* **Equations**