

**Title: Matter in a Mole**

**Introduction:** Could you measure out a dozen eggs? A dozen doughnuts? Chemists use a quantity called a mole the same way you use a dozen to describe a quantity of matter. Could you measure a mole of eggs? What problem do you see? In this activity you will calculate and measure the gram-sized quantities of matter in a mole of an element or compound and share your results with your class.

**Materials:**

A pure substance (element or compound) that you bring from home, baggie, balance, butcher paper, markers

**Procedures:**

1. Look up the element or elements your substance is composed of on a periodic table.
2. List atomic number, # of protons, and atomic mass for your element(s).
3. Calculate the total mass in one mole of your substance. Show your calculations or write an explanation:
  
4. Check off your answer, then measure 1 mole of your substance in grams and place it in a zip-lock bag for later demonstration.
  
5. Create a poster on butcher paper with the following information:
  - a. The name of your element or compound.
  - b. The symbol of your element or formula for your compound.
  - c. Equations that show how many grams of your substance is in 1 mole and how many grams of that substance equals one mole.
  - d. Attach your baggie with one mole of your substance inside.
  - e. Include one other interesting and true fact about your substance (e.g. origin of its name, why is it useful).
  - f. A drawing of something that contains your substance.