

41.4: Procedures

You will use dozens of items to visualize moles of particles (atoms/molecules).

Dozens

1. Draw two tables in which to record your data for dozens, grams, and pieces. **Do not fill in data until you have read the instructions for obtaining that data.**

Table 41.4.1: Dozens

Item	Measured Mass per Dozen	Calculated Dozens in 15 Grams
Small Paperclips		
Large Paperclips		
Small Metal Nuts		
Large Metal Nuts		

Table 41.4.2: Pieces

Element	Measured Mass per Mole
Aluminum	
Iron	
Helium	
Carbon	

Table 41.4.4: Particles

Element	Calculated Moles per 1.8×10^{24} Atoms	Calculated Mass of 1 Atom
Aluminum		
Iron		
Helium		
Carbon		

- Use the periodic table to determine the measured mass in grams of one mole of atoms, for each type of atom listed in the table. Record these values in your *moles* data table.
- Calculate how many moles a 15 gram sample would contain, for each type of atom. Record these values in your *moles* data table.
- Calculate and record in your *moles* data table, the mass of 3 moles for each type of atom listed.
- Calculate and record in your *particles* data table, the number of moles in a sample that contains 1.806×10^{24} particles, for each type of atom.
- Calculate and record in your *particles* data table, the average mass in grams of one particle, for each type of atom.

Clean-up

- Check that none of your paperclips or metal nuts were mixed

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