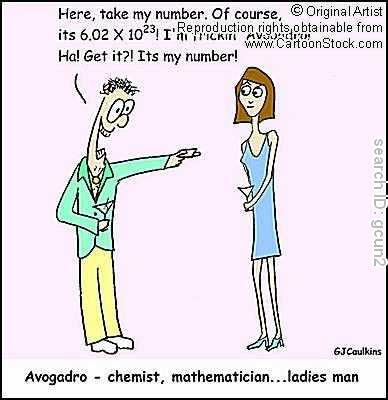
**Unit 5: Learning Goals for Moles in Compounds, Stoichiometry and Limiting Reactants**

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| Guiding Question: How do scientists predict or determine amounts of reactants and products in chemical reactions? | | |
| Content Goals  Students will be able to:   * Determine the molar mass (formula mass) of an element or compound * Determine the percent composition of a compound * Determine the empirical formula and molecular formula based on mass of elements or % mass of elements in compounds * Convert moles to grams or particles AND convert grams or particles to moles * Write balanced equations for chemical reactions * Use mole ratios in a balanced equation to determine the moles, mass, or particles of a reactant or product * Determine the limiting reactant and the excess reactant in a reaction * Calculate the theoretical yield based on the limiting reactant * Determine the percent yield from the actual and theoretical yields | Skills Goals  Students will:   * Conduct laboratory investigations in a safe and productive manner * Use standard laboratory equipment properly to observe various chemical reactions * Make measurements to the correct degree of uncertainty * Present data in organized tables * Present calculations in organized format * Analyze results of investigation in a written conclusion * Evaluate the effect of error on experimental results * Suggest realistic improvements to obtain more accurate results | |
| Big Ideas  Students will:   * Understand how to determine the amount of product that will be produced or the amount of reactant that reacted based on a measured amount of any reactant or product in a chemical reaction | | |
| Assessment – How will I know if students have mastered content, skills, and big ideas?  Students will:   * Collect and present data in tables or graphs * Make calculations and present in organized format * Complete tests and quizzes on all topics in content goals | | |
| Key Vocabulary | | |
| Mole Molar mass (Formula mass)  Coefficient in balanced equation  Subscript in chemical formula  Percent composition  Empirical formula  Molecular formula (compound formula)  Balanced Equation | | Mole ratio (from balanced equation or chemical formula)  Stoichiometry  Limiting reactant  Excess reactant  Theoretical yield  Actual yield  Percent yield |



**Related in Discovery Ed:**

Chapter 10, p. 290-299 mole review

Chapter 10, p. 305-312 % comp, emp formulas, molec formulas

Chapter 11, p. 321-339 Balancing and Writing equations

Chapter 12, p. 353-375 Stoichiometry and Limiting Reactants

Here take my number. Of course it’s 6.02x1023!

I’m frickin’ Avogadro! Get it?! It’s my number!

