

Grade	10-12
Unit of Study	Unit 6: Stoichiometry
Length of Unit	3 weeks
Sample Essential Questions	Sample Corresponding Big Ideas
How can amounts of chemical quantities be used to make predictions?	Stoichiometry is the calculation of the amounts of reactants and products involved in a chemical reaction.
What factors should be considered when maximizing percent yield?	The actual yield should be increased by reducing systematic error in the procedure or using more accurate measuring devices.

Missouri Learning Standards	
Priority Standard(s)	Supporting Standard(s)
I can explain how matter is structured, how its properties are determined by its structure, and how it changes during chemical reactions.	9-12.PS1.B.3

Unit 6 Sequence			
MLS	Topic(s)	Learning Targets	Academic Vocabulary
PS1.B.3	Stoichiometry	I can make quantitative predictions about chemical reactions using dimensional analysis.	Stoichiometry
	Percent Yield	I can calculate the percent yield for a laboratory investigation.	Percent Yield Actual Yield Theoretical Yield
	Limiting Reactant	I can determine the limiting and excess reactants when two or more reactants are provided. I can use the limiting reactant to calculate the theoretical yield.	Limiting Reactant Excess Reactant

MLS	Learning Activities	
PS1.B.3	NSTA Argument Driven Inquiry Lab 27 (Thermal Decomp of NaHCO_3)	Must Do ▾
	Gravimetric Stoichiometry/Percent Yield Lab ($\text{HCl} + \text{Na}_2\text{CO}_3$)	Must Do ▾
	Pogil Activities for High School Chemistry (Limiting and Excess Reactants)	Diff Inst ▾

Assessments		
MLS	Description or Location	Rubric/Location
PS1.B.3	Unit 6 Test	Paper

Additional Resources
Phet, OpenStax, Javalab