

Grade	10-12
Unit of Study	Unit 3: The Mole
Length of Unit	2 weeks
Sample Essential Questions	Sample Corresponding Big Ideas
How is the mole similar to a dozen?	In the same way that a dozen is a 12 of anything; a mole is a group of 6.022×10^{23} of anything.
How can we use mass as a way to indirectly measure?	Knowing the mass of a dozen of something can reveal how many dozens of that item are present. The same analogy holds true for the mole.

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 3 Sequence			
MLS	Topic(s)	Learning Targets	Academic Vocabulary
PS1.B.3	The Mole	I can convert between mass, moles, and molecules using the given, find, cancel method.	Mole Molar Mass Avagadro's Number Molecules, Atoms, Formula Units
	Empirical and Molecular Formula	I can calculate percent composition of compounds and mixtures. I can determine the empirical formula of a substance when given percent composition. I can determine the molecular formula of a substance when provided the molar mass and empirical formula.	Percent Composition Empirical Formula Molecular Formula

MLS	Learning Activities	
PS1.B.3	Percent Composition of Hydrate Lab	Must Do ▾
	Empirical Formula of Magnesium Oxide Lab	Must Do ▾

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

Additional Resources
Phet, OpenStax, Javalab