

Understanding by Design(Backward Design) Lesson Plan

Stage 1 Desired Results

ESTABLISHED GOALS Students should be able to critically evaluate a lab for safety. They will be able to identify the key differences between an academic lab and an industrial lab.	Transfer	
	<i>Students will be able to independently use their learning to...</i> Describe and utilize different safety components and procedures in the classroom	
	Meaning	
	UNDERSTANDINGS <i>Students will understand that...</i> Lab safety is not something that can be missed and must be consistently at the front of everyone’s mind	ESSENTIAL QUESTIONS What are the common elements of a safe lab? What laws influence the design and structure of a commercial lab?
	Acquisition	
	<i>Students will know...</i> The different legal requirements (OSHA and ANSI) that influence all decisions made in a lab Differences between a High School Lab and a Commercial Lab	<i>Students will be skilled at...</i> Finding and understanding SDS forms Identifying safety issue in a lab Making informed choices about lab safety
Stage 2 - Evidence		
Evaluative Criteria	Assessment Evidence	
	PERFORMANCE TASK(S): Student presentations Lab safety audit	
	OTHER EVIDENCE: Student discourse Lab safety poster	
Stage 3 – Learning Plan		

Summary of Key Learning Events and Instruction

Students will begin the lesson by observing the safety poster diagram and identifying all of the hazards they can see. This will be to activate prior knowledge and all the teacher to gauge student understanding of overall lab safety. The poster has at least 50 different issues, allowing all students to share at least one item that they can see.

Students will then break into groups and look at the OSHA regulations regulating lab safety in the workplace. Each group of students will be responsible for looking at a different regulation and creating an overall 5 min presentation on their findings. The presentations will highlight the law, the lab conditions that might present the application of the law, and the ways to insure compliance with the law. These presentations will be shared with the entire class.

As an overall group, students will look at the safety poster again, looking to see how many issues they missed.

A followup to the lesson would have students take a virtual tour of a industrial lab through the lens of comparing it to an academic lab. Students would be tasked with looking at how the lab is set up, the procedures that are being followed, and the overall adherence to policy. If possible, the safety manual for an industrial lab will be looked at. If time allows, a comparison using the lab safety audit from LSI would provide interesting results.