Krug Chemistry – Deep Run Daily Planning Guide

Date of Lesson: Q3 Day 10 – Limiting Reactant and Percent Yield

Topic /Big Questions: (Question Stems & Question Creation Chart)

- **How can a chemist identify the limiting reactant and excess reactant after a reaction?**
- **What is the mass of the theoretical yield?**
- **How much excess reactant is leftover?**

State SOL	Unpacking the Standards (Video explanation shown at 3:18)
CH. 4	CH.4 The student will investigate and understand that molar relationships compare and predict chemical quantities. Key ideas include a) Avogadro's principle is the basis for molar relationships; and b) stoichiometry mathematically describes quantities in chemical composition and in chemical reactions.

Visible Learning (For the three items with asterisks*, think from a student perspective. Use simple language)

***What am I learning today?** A limiting reactant is the reactant that will run out first in a chemical reaction. Industries determine which reactant to use as the limiting reactant based on the cost of the chemical.

***Why is it important?** In order for chemical equations to be useful, there needs to be a way to measure the quantities of reactants and products. Stoichiometry involves quantitative relationships in a balanced equation which are based on mole ratios.

***How will I know I've learned it?** I will use dimensional analysis to determine the limiting reactant. I will use dimensional analysis to determine the amount of excess reactant. I will calculate the percent yield of the desired product.

Differentiation strategies:

Roadmap to Stoichiometry

Stoichiometry Formula Guide

Limiting Reactant Lab: Baking Soda and Vinegar

Accommodations and/or modifications are being met for students with IEP's/504's.

Small group activities; frequent checks for understanding; materials available on Schoology

Daily Plan/Sequence of Instruction:

Teacher will check the **Limiting Reactant and Percent Yield Homework** for completion and go over the problems on the board**.** Teacher will explain the procedure for the **Limiting Reactant Lab: Baking Soda and Vinegar**. Students will work in small groups to complete the lab and record their measurements and calculations on the lab worksheet. Teacher will offer assistance as needed.

Assessments (List all formative/summative assessments used to check for understanding during this lesson. Summative assessments may occur during a different class period.):

Limiting Reactant and Percent Yield Homework – (summative)

Limiting Reactant Lab: Baking Soda and Vinegar – (summative)

After assessing today's lesson are you and your students comfortable moving forward with your next objective?

Yes - students scored 80% or higher on the Limiting Reactant Homework and Lab Report

No, remediation required to proceed – tutoring will be available during One Lunch

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