Lesson Plans for AP Chemistry

Diane Paskowski

March 4th to March 13th

**Chemical Kinetics - Chapter 12**

Mass State Frameworks

7.5 Identify the factors that affect the rate of a chemical reaction (temperature, mixing, concentration, particle size, surface area, catalyst).

College Board AP Chemistry Curriculum Guidelines:

C3 – The course provides instruction in the five content areas of which one is the reactions (Reaction types, Stoichiometry, Equilibrium, Kinetics, Thermodynamics).

C5 – Laboratory (Physical manipulations; Processes and procedures; Observations and data manipulation: Communication, group collaboration, and the laboratory report)

C6 – The course emphasizes the chemical calculations and the mathematical formulations of principles.

Essential Questions:

1. What factors affect the rate of reaction?
2. How are the rates of reaction determined experimentally?
3. What is the significance of rate orders for reactions?
4. What is the relationship of between rate order and reaction mechanism?

**Lessons**

Monday, March 4th

E Day

Lecture/discussion: Introduce the concept of rate of reaction – conceptually, graphically, and mathematically. Differentiate between differential rate law and integrated rate law.

Tuesday, March 5th

F day

Lecture/discussion: Practice problems – how to determine the Rate Law, graphically and mathematically. The significance of Rate Order and how to determine rate order.

Wednesday, March 6th

G day

Lecture/discussion: Half-lives of reactions and activity.

Thursday, March 7th

H day

Lecture/discussion: Reaction Mechanisms, intermediates, factors that affect Rate.

Friday, March 8th

A day

Lab Exercise – Rates of Reactions

Monday, March 11th

B day

Lecture/discussion: Reaction Mechanisms, intermediates, factors that affect Rate. Thermodynamics of Reactions – Activation energy.

Tuesday, March 12th

C day

Review Kinetics Day

Wednesday, March 13th

D Day

Assessment: Multiple Choice and Free Response

Homework:

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| Section | Pages | Exercises | Due Date |
| Reaction Rates | p. 567 | # 21, 23 | Wednesday, March 6th |
| Rate Laws from Exp Data, initial rates | 567-568 | # 25, 27, 29 | Wednesday, March 6th |
| Integrated Rate Laws  (Half-Life) | 569-573 | # 31, 33, 35, 39  # 43, 45 | Friday, March 8th |
| Reaction Mechanisms & Temperature Dep. | 573 | #49, 51, 53, 55 | Tuesday, March 12th |
| Active Learning Questions and Questions | 566 | #3, 10, 17 | Wednesday, March 13th |

**Summaries and Key Terms are due on Monday, March 11th**