SCH4U **UNIT 3** **RATES**
(Rayner Chap 6)

Class

1. **Demos**: Factors That Affect Rates of Reaction
Definions of rate: change in quantity/time for either product or reactant
e.g. mole of Mg, volume of H_2, change of molarity of HCl/time
Review **MOLARITY** calculations
Complete demo chart, neatly and permanently attach to lab book
Do Booklet Ex. 3.1

2. **Video**: Chemical kinetics (part one) 13 min.
Activation energy and ΔH diagrams
Video: Catalysis 15 min Do **Ex. 3.2** video questions
Do p 240-255 # 1 to 14 (study examples p 235-248)

3. **Lesson in homo and hetero catalysts, production of SO_3 and role of H_2SO_4 in economics, catalytic convertors in automobiles, hydrogenation**
Read p 255-260, 278-280 and take notes; Do p 260 # 15, 16
Prelab Exp. 3.3
Do Prelab in lab book including title, purpose, complete hypothesis and prelab calculations

4. **Video**: Rates of reactions 15 min.
Lesson: Boltzman distribution

5. **Lab: Exp. 3.3**
Complete lab write up in lab book; do graphs by hand on graph paper; each graph should be on one sheet of graph paper and follow directions of axis given in the booklet

6. **Take up of graphs from Exp 3.3**
Continue lab write up in lab book

7. **Lab due**
Meaning of rate order; Rate Law ; # of particles that collide in activated complex
Demo of funnels and sand to show RDS
Do Booklet Ex. 3.4 and take up in class
Do Ex. 3.5 for homework
Read p 261-275; Do p 267 # 17 to 20; p 278 # 21ab, 22ab, 24

8. **Discuss "order" of exp. results, mechanism**
Complete Booklet Ex. 3.5, Do p 267 # 17 to 20 (if not already assigned above)
Do Booklet Ex. 3.6
Do p 284 # 3, 5, 21, 31 to 41, 45 to 53 due before unit test

9. **Take up of Some Work**
Introduce the ISP (Unit 7)

10. Test