

Scope and Sequence

Subject/Title of Unit	Grade	6 Weeks	Estimated Time Frame (# of days)
PreAP Chemistry Unit 15 – Kinetics and Equilibrium	10 – 12	6 th cycle	8 days
TEKS/Student Expectations		Examples/Specifications:	
15A - verify the law of conservation of energy by evaluating the energy exchange that occurs as a consequence of a chemical reaction		15A – interpret potential energy diagrams and use collision theory and mechanisms to describe the kinetics of reactions.	
15B - relate the rate of a chemical reaction to temperature, concentration, surface area, and presence of a catalyst		15B – investigate the rate of reaction as impacted by temperature, concentration, particle size and catalysts through lab study.	
5A - identify changes in matter, determine the nature of the change, and examine the forms of energy involved		5A – describe chemical equilibrium and use LeChatelier’s principle to predict shifts in an equilibrium system both in theory and lab.	
11A - identify common elements and compounds using scientific nomenclature		11A, B, & C – write and interpret equilibrium equations.	
11B - demonstrate the use of symbols, formulas, and equations in describing interactions of matter such as chemical and nuclear reactions			
11C - explain and balance chemical and nuclear equations using number of atoms, masses, and charge			
1A - demonstrate safe practices during field and laboratory investigations.		1A & B – conduct lab experiments safely and follow instructor guidelines regarding appropriate disposal of materials.	
1B - make wise choices in the use and conservation of resources and the disposal or recycling of materials.			
2A - plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology		2A – use the scientific method when planning a controlled experiment, including the identification and selection of appropriate equipment, and the development of a suitable hypothesis.	
2B - collect data and make measurements with precision		2B & C– using the metric system, measure quantities to the correct number of significant digits using scientific notation as appropriate. Convert between units as needed and round to the correct number of digits when reporting a calculated answer.	
2C - express and manipulate chemical quantities using scientific conventions and mathematical procedures such as dimensional			

analysis, scientific notation, and significant figures		2D & E – apply the steps of the scientific method to lab investigations.
2D - organize, analyze, evaluate, make inferences, and predict trends from data		
2E - communicate valid conclusions		
Language of Instruction:		Instructional Resources/Textbook Correlations:
Kinetics Potential energy diagram Collision theory Activation energy Heat of reaction Rate of reaction Catalyst Inhibitor Surface area Activated complex Equilibrium Reversible reaction LeChatelier's principle	Glencoe Chemistry: Matter and Change – chapters 17 and 18 Reaction rate lab Equilibrium lab	
	Weblinks/Other Resources:	
Evaluation/External Assessment/Local Assessment:		Best Instruction Timeline:
TAKS test (1.1A, 1.2A – D, 4.8A) Teacher-designed test Laboratory reports and performance Quizzes Daily work Homework		2 days – potential energy diagrams and rate lab 1 day – reaction mechanisms and collision theory 2 days – equilibrium and lab investigation 2 days – review and assess