

Scope and Sequence

Subject/Title of Unit	Grade	6 Weeks	Estimated Time Frame (# of days)
Chemistry Unit 3 – Atomic Theory	10 – 12	1 st cycle	8 days
TEKS/Student Expectations		Examples/Specifications:	
3E - research and describe the history of chemistry and contributions of scientists		3E – describe the early atomic models (Greek, Dalton, Thomson, and Rutherford).	
6A - describe the existence and properties of subatomic particles		6A – describe the fundamental subatomic particles and use atomic number, mass number, and atomic mass to describe atoms.	
5A - identify changes in matter, determine the nature of the change, and examine the forms of energy involved		5A – relate atomic spectra to the organization of electrons in atoms (Bohr’s model and the quantum atomic model) and examine atomic spectra in lab.	
6B - analyze stable and unstable isotopes of an element to determine the relationship between the isotope's stability and its application		6B – define radioactivity, recognize common uses of radioactive nuclei, and determine half-life for radioisotopes in calculations and lab simulation.	
11C - explain and balance chemical and nuclear equations using number of atoms, masses, and charge		11C – write and balance nuclear equations.	
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 - organize, analyze, evaluate, make inferences, and predict		2D & E – apply the steps of the scientific method to lab investigations.	

trends from data		
2E - communicate valid conclusions		
Language of Instruction:		Instructional Resources/Textbook Correlations:
Atom	Scientific law	Glencoe Chemistry: Concepts and Applications – chapter 2 and 21 Spectral analysis lab Half life simulation lab
Atomic number	Theory	
Atomic theory	Valence electron	Weblinks/Other Resources:
Electromagnetic spectrum	Alpha particle	
Electron	Beta particle	
Electron cloud	Gamma ray	
Emission spectrum	Half-life	
Energy level	Nuclear fission	
Hypothesis	Nuclear fusion	
Isotope	Radioactivity	
Law of definite proportions		
Mass number		
Neutron		
Nucleus		
Proton		
Evaluation/External Assessment/Local Assessment:		Best Instruction Timeline:
TAKS test (1.1A, 1.2A – D, 1.3A, 4.7D)		2 days – early atomic models and general atomic structure
Teacher-designed test		2 days – electrons in atoms and atomic spectra lab
Laboratory reports and performance		2 days – nuclear energy and half life including lab simulation
Quizzes		2 days – review and assessment
Daily work		
Homework		