New Braunfels ISD Year at a Glance 2021-2022

Chemistry

July 2021

Essential Resources	District Resources to Teach 100% of the TEKS: STEMscopes and Discovery Education
Spiraled TEKS	**Scientific Investigations & Reasoning C.1 A, B & C, C.2 A, B, C, D, E, F, G, H & I, C.3 A, B, C, D, E & F**

		1st Quarter Aug 23 - Oct 15, 2021 (38 Instructional Days)					2nd Quarter Oct 19 - Dec 17, 2021 (39 Instructional Days)					
Timeline												
Big Idea	Current Grade	**Physical/Chemical Changes and Properties Classifying Matter Energy, Frequency, and Wavelength of Light Atomic Mass Atomic Theory**					**Using the Periodic Table Properties of Chemical Families Chemical Bonding Chemical Formulas Chemical Reactions**					
TEKS	Current Grade	C.1 A, B & C, C.2 F, G & H Demonstrate safe practices during laboratory and field investigations, know specific hazards of chemical substances, and demonstrate an understanding of the use and conservation of resources and proper disposal. Collect data and make measurements with accuracy and precision, express and manipulate chemical quantities using scientific conventions and mathematical procedures, organize, analyze, evaluate, and make inferences, and predict trends from data.	**C.4A**BC**D** Differentiate between physical and chemical changes and properties, identify extensive and intensive properties, compare solids, liquids, and gases, and classify matter as pure substances or mixtures, through investigations	C.6A Describe the experimental design and conclusions used in the development of modern atomic theory	C.6B Describe the mathematical relationships between energy, frequency and wavelength of light using electromagnetic spectrum	**C.6C**D Calculate average atomic mass of an element, express the arrangement of electrons in atoms of representative elements	**C.5A**B Explain the use of chemical and physical properties	**C.5C** Interpret periodic trends	**C.7A**B Name ionic compounds containing main group or transition metals, covalent compounds, acids, and bases using IUPAC rules	**C.7C**D Construct electron dot formulas to illustrate ionic and covalent bonds, describe metallic bonding and explain metallic properties	**C.8E** Write and balance chemical equations using the law of conservation of mass	C.8F Differentiateamong double replacement reactions
	Pre-Assessing TEKS	NONE	IPC.6A, 6C, IPC.7B	IPC. 6B, IPC.6D	IPC.5G	8.5A	IPC. 6B, IPC.6D	IPC. 6B, IPC.6D	IPC.6D	IPC.6D, IPC.6.6A	IPC.7C	NONE

		3rd Quarter Jan 4 - March 11, 2021 (47 Instructional Days)			4th Quarter March 21 - May 28, 2022 (47 Instructional Days)							
Timeline												
Big Idea	Current Grade	**Mole Concept Stoichiometry Lewis Structures Molecular Geometry**			**Energy in Chemical Reactions Kinetic Molecular Theory Ideal Gases Solutions Solubilities Acids and Bases Radioactivity Nuclear Decay**							
TEKS	Current Grade	**C.8 A**B**C**&D Define and use the concept of a mole, calculate the number of atoms or molecules in a sample of material using Avogadro's number, calculate percent composition of compounds, differentiate between empirical and mo;ecular structures	C.8GH Perform stoichiometric calculations, describe the concept of limiting reactants and products and percent yield	C.7DE Describe metallic bonding and explain metallic properties, classify molecular structure for molecules with linear, trigonal planar, and tetrahedral electron pair geometries using Valence Shell Electron Pair Repulsion (VSEPR) theory	C.11ABCD Describe energy and its forms, describe the law of conservation of energy and the processes of heat transfer in terms of calorimetry, classify reactions as exothermic or endothermic and represent energy changes that occur in chemical reactions using thermochemical equations or graphical analysis, perform calculations involving heat, mass, temperature change, and specific heat.	C.11C Classify reactions as exothermic or endothermic and represent energy changes that occur in chemical reactions	**C.9A**B Describe and calculate the relations, describe the postulates of kinetic molecular theory.	**C.10A**B Describe the unique role of water solutions of polarity, apply general rules regarding solubility through investigatons	C.10CD Calculate the concentration of solutions in units of molarity, calculate the dilutions of solutions using molarity	**C.10E**F Distinguish among types of solutions, investigate factors that influence solid and gas solubilities and rates of dissolution	C.10GH Define acids and bases and distinguish between Arrhenius and Bronsted- Lowry definitions and predict products, define pH and calculatethe pH of a solution	C.12AB Describe the characteristics of alpha, beta, and gamma radiation, describe radioactive decay process in terms of balanced nuclear equations, and compare fission and fusion reactions.
	Pre-Assessing TEKS	NONE	NONE	IPC.6D, 6.6A	IPC.5A, B, D, IPC.7D	IPC.7D	IPC.6A	IPC.6E	IPC.6E, IPC.6F	IPC.6.E	IPC.6E	IPC.7E

Readiness standards are in bold