New Braunfels ISD Year at a Glance 2020-21	IPC Science	June 2020

Essential Resources	District Resources to Teach 100% of the TEKS: Apex	
Spiraled TEKS	**Scientific Investigations & Reasoning IPC.1A, B & C, IPC.2A, B, C , D & E & IPC.3A, B, C, D, E & F**	
Previous Courses	* High school science courses are considered "stand alone" and any common content or process skills needed as foundational learning were taught with fidelity in the 2019-20 school year.	

		1st Quarter Aug 24 - Oct 16, 2020 (38 Instructional Days)	**2nd Quarter Oct 19 - Dec 18, 2020 (40 Instructional Days)**
Timeline			
Big Idea	Current Grade	**Structure and Properties of Matter Changes in Matter Elements and Periodic Table Placement**	**Chemical Changes and Reactions Thermal Energy Chemical Reactions and Environments History of Chemistry and Scientists**
TEKS	Current Grade	**IPC.1A IPC.6A, B & C IPC.7A IPC.6D** **SAFETY**: Demonstrate safe practices during laboratory and field investigations. **STRUCTURE AND PROPERTIES OF MATTER**: Examine differences in physical properties of solids, liquids, and gases as explained by the arrangement and motion of atoms or molecules, relate chemical properties of substances to the arrangement of their atoms or molecules, analyze physical and chemical properties of elements and compounds such as color, density, viscosity, buoyancy, boiling point, freezing point, conductivity, and reactivity **CHANGES IN MATTER**: Investigate changes of state as it relates to the arrangement of particles of matter and energy transfer. **ELEMENTS AND PERIODIC TABLE PLACEMENT**: Relate the placement of an element on the Periodic Table to its physical and chemical behavior, including bonding and classification.	**IPC.7B, C, D & E IPC.5E IPC.6E & F IPC.7F IPC.3F** **CHEMICAL CHANGES AND REACTIONS**: Recognize that chemical changes can occur when substances react to form different substances and that these interactions are largely determined by the valence electrons, demonstrate that mass is conserved when substances undergo chemical change and that the number and kind of atoms are the same in the reactants and products, classify energy changes that accompany chemical reactions as exothermic or endothermic reactions, describe types of nuclear reactions such as fission and fusion and their roles in applications such as medicine and energy production. **THERMAL ENERGY**: Investigate and demonstrate the movement of thermal energy through solids, liquids, and gases by convection, conduction, and radiation. **WATER & PROPERTIES OF SOLUTIONS**: Relate the structure of water to its function as a solvent and investigate the properties of solutions and factors affecting gas and solid solubility. **CHEMICAL REACTIONS AND ENVIRONMENTS**: Research and describe the environmental and economic impact of the end-products of chemical reactions such as those that may result in acid rain, degradation of water and air quality, and ozone depletion. **HISTORY OF CHEMISTRY AND SCIENTISTS**: Research and describe the history of chemistry and contributions of scientists.

		3rd Quarter Jan 4 - March 12, 2021 (48 Instructional Days)	**4th Quarter March 22 - May 27, 2021 (48 Instructional Days)**
Timeline			
Big Idea	Current Grade	**Force and Motion Energy Forms, Transfer, and Conservation**	**Electricity and Gravity Magnetism, Waves, Sound, and Light**
TEKS	Current Grade	**IPC.4A, B, C, D, E & F IPC.5A, B, C, D, G & I** **FORCE AND MOTION**: Describe and calculate an object's motion in terms of position, displacement, speed, and acceleration, measure and graph distance and speed as a function of time, investigate how an object's motion changes only when a net force is applied, describe and calculate the relationship between force, mass, and acceleration, using equipment, explain the concept of conservation of momentum using action and reaction forces, describe the gravitational attraction between objects of different masses at different distances. **ENERGY FORMS, TRANSFER AND CONSERVATION**: Recognize and demonstrate that objects and substances in motion have kinetic energy, recognize & demonstrate common forms of potential energy, demonstrate that moving electric charges produce magnetic forces and moving magnets produce electric forces, investigate the law of conservation of energy, analyze energy transformations of renewable and nonrenewable resources and critique the advantages and disadvantages of various energy sources and their impact on society and the environment.	**IPC.3F IPC.4G IPC.5 C, F & G** **HISTORY OF PHYSICS AND SCIENTISTS**: Research and describe the history of physics and contributions of scientists. **ELECTRICITY AND GRAVITY**: Examine electrical force as a universal force between any two charged objects. **MAGNETISM, WAVES, SOUND AND LIGHT**: Demonstrate that moving electric charges produce magnetic forces and moving magnets produce electric forces, evaluate the transfer of electrical energy in series and parallel circuits and conductive materials, and explore the characteristics and behaviors of energy transferred by waves, including acoustic, seismic, light, and waves on water as they are absorbed by materials.