Grade Level/Content Area	Alternate K-PREP Aligned to KAS for Science	KAS Standard
Grade 11 Science	**(Sci. HS 11.1)** **Use evidence from an investigation to explain the interaction between the properties of water (e.g. expansion when freezes, high specific heat, capacity to absorb or release heat, water as a solvent, ability to transport materials) and its effects on Earth's materials and surface processes.** **LINK TO EARTH SCIENCE PROGRESSION** **Earth Science**	HS-ESS2-5: Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes. [Clarification Statement: Emphasis is on mechanical and chemical investigations with water and a variety of solid materials to provide evidence for the connections between the hydrologic cycle and system interactions commonly known as the rock cycle. Examples of mechanical investigations include stream transportation and deposition using a stream table, erosion using variations in soil moisture content, and frost wedging by the expansion of water as it freezes. Examples of chemical investigations include chemical weathering and recrystallization (by testing the solubility of different materials) or melt generation (by examining how water lowers the melting temperature of moist solids).]

		Earth Science
	(Sci. HS 11.2) **Evaluate evidence that supports the claim that changes to the environment (e.g., deforestation, fishing, drought and flood) affect the distribution or disappearance of traits in species which may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) extinction of other species.** **LINK TO LIFE SCIENCE 1 PROGRESSION** **Life Science 1**	HS-LS4-5: Evaluate the evidence supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals and some species, (2) the emergence of new species over time, and (3) extinction of other species. [Clarification Statement: Emphasis is on determining cause and effect relationships for how changes to the environment such as deforestation, fishing, application of fertilizers, drought, flood, and the rate of change of the environment affect the distribution or disappearance of traits in species.] **Life Science 1**
	(Sci. HS 11.3) **Evaluate the design of a device that minimizes the force on an object during a collision and make suggestions for improvement.** **LINK TO PHYSICAL SCIENCE 2 PROGRESSION**	HS-PS2-3: Apply scientific and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision. [Clarification Statement: Examples of evaluation and refinement

	Physical Science 2	could include determining the success of a device at protecting an object from damage and modifying the design to improve it. Examples of a device could include a football helmet or a parachute.] **Physical Science 2**
	(Sci. HS 11.4) **Evaluate evidence that interactions in ecosystems remain relatively consistent over time in stable conditions (in terms of numbers and types of organisms), but ecosystems can change as a result of disruptions (e.g., farming, hunting, flooding, fire, or volcanic eruption) that are moderate to extreme.** **LINK TO LIFE SCIENCE 2 PROGRESSION** **Life Science 2**	HS-LS2-6: Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem. [Clarification Statement: Examples of changes in ecosystem conditions could include modest biological or physical changes, such as moderate hunting or a seasonal flood, and extreme changes, such as volcanic eruption or a sea-level rise.] **Life Science 2**

	(Sci. HS 11.5) **Evaluate a solution to a real-world problem based on criteria and trade-offs that account for a range of constraints including cost, safety, reliability as well as social and environmental impacts.** **LINK TO ENGINEERING AND TECHNOLOGY PROGRESSION** **Engineering and Technology**	HS-ETS1-3: Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural and environmental impacts. **Engineering and Technology**
	(Sci. HS 11.6) **Construct an explanation for the outcome of a simple chemical reaction (specific to elements in families 1, 2, and 13-18), based on the outermost electron states of atoms and trends in the periodic table.** **LINK TO PHYSICAL SCIENCE 1 PROGRESSION** **Physical Science 1**	HS-PS1-2: Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties. [Clarification Statement: Examples of chemical reactions could include the reaction of sodium and chlorine, carbon and oxygen, or carbon and hydrogen.] **Physical Science 1**

Blue: Standards 1 through 3 (TEST WINDOW 1)
Yellow: Standards 4 through 6 (TEST WINDOW 2)