BLUE VALLEY DISTRICT CURRICULUM

Science | Grade K

ORGANIZING THEME/TOPIC	FOCUS STANDARDS AND SKILLS
Unit 1: Weather and Climate **Bring Science Alive!** Unit 3: Weather Lessons 1 - 2 Suggested Time Frame: 25 days	**K-ESS2-1.** Use and share observations of local weather conditions to describe patterns over time. **Science and Engineering Practice** • **Analyzing and Interpreting Data** – Use observation to describe patterns in the natural world in order to answer scientific questions. **Disciplinary Core Idea** • **ESS2.D: Weather and Climate -** Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time. People measure these conditions to describe and record the weather and to notice patterns over time. **Crosscutting Concept** • **Patterns** - Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.
Unit 2: Sunlight **Bring Science Alive!** Unit 3: Weather Lessons 3 - 4 Suggested Time Frame: 17 days	**K-PS3-1.** Make observations to determine the effect of sunlight on Earth's surface. **K-PS3-2.** Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area. **Science and Engineering Practices** • **Planning and Carrying Out Investigations** – Make observations to collect data that can be used to make comparisons. • **Constructing Explanations and Designing Solutions –** Use tools and materials provided to design and build a device that solves a specific problem or a solution to a specific problem. **Disciplinary Core Idea** • **PS3.B: Conservation of Energy and Energy Transfer -** Sunlight warms Earth's surface. **Crosscutting Concept** • **Cause and Effect** – Events have causes that generate observable patterns.

Unit 3: Severe Weather **Bring Science Alive!** Unit 3: Weather Lessons 5 - 6 Suggested Time Frame: 19 days	**K-ESS3-2. Ask questions to obtain information** about the purpose of **weather forecasting** to prepare for, and respond to, severe weather. **Science and Engineering Practices** • **Asking Questions and Defining Problems** – Ask questions based on observations to find more information about the designed world. • **Obtaining, Evaluating, and Communicating Information** - Read grade-appropriate texts and/or use media to obtain scientific information to describe patterns in the natural world. **Disciplinary Core Ideas** • **ESS3.B: Natural Hazards -** Some kinds of severe weather are more likely than others in a given region. Weather scientists forecast severe weather so that the communities can prepare for and respond to these events. • **ETS1.A: Defining and Delimiting an Engineering Problem –** Asking questions, making observations, and gathering information are helpful in thinking about problems. **Crosscutting Concepts** • **Cause and Effect –** Events have causes that generate observable patterns.
Unit 4: Plant and Animal Needs **Bring Science Alive!** Unit 1: Plants and Animals Lessons 1-3 Suggested Time Frame: 29 days	**K-LS1-1. Use observations to describe patterns of** what plants and animals (including humans) need to survive. **Science and Engineering Practice** • **Analyzing and Interpreting Data** - Use observations to describe patterns in the natural world in order to answer scientific questions. **Disciplinary Core Idea** • **LS1.C: Organization for Matter and Energy Flow in Organisms -** All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow. **Crosscutting Concepts** • **Patterns** – Patterns in the natural and human designed world can be observed and used as evidence.
Unit 5: Relationships: Plants, Animals and Places **Bring Science Alive!** Unit 1: Plants and Animals Lesson 4 Suggested Time Frame: 9 days	**K-ESS3-1. Use a model to represent the relationship between the needs** of different plants and animals (including humans) **and the places** they live. **Science and Engineering Practice** • **Developing and Using Models** – Use a model to represent relationships in the natural world. **Disciplinary Core Idea** • **ESS3.A: Natural Resources -** Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do. **Crosscutting Concept** • **System and System Models** – Systems in the natural and designed world have parts that work together.

Unit 6: Changing the Environment **Bring Science Alive!** Unit 1: Plants and Animals Lessons 5 – 7 Suggested Time Frame: 34 days	**K-ESS2-2. Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.** **Science and Engineering Practice** • **Engaging in Argument from Evidence** – Construct an argument with evidence to support a claim. **Disciplinary Core Idea** • **ESS2.E: Biogeology** - Plants and Animals can change their environment. **Crosscutting Concept** • **Systems and System Models** – Systems in the natural and designed world have parts that work together. **K-ESS3-3. Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.** **Science and Engineering Practice** • **Obtaining, Evaluating, and Communicating Information** – Communicate solutions with others in oral and/or written forms using models and/or drawings that provide detail about scientific ideas. **Disciplinary Core Idea** • **ESS3.C: Human Impacts on Earth Systems** - Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things. • **ETS1.B: Developing Possible Solutions –** Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people. **Crosscutting Concept** • **Cause and Effect** – Events have causes that generate observable patterns.
Unit 7: Push and Pull **Bring Science Alive!** Unit 2: Pushes and Pulls Lessons 1 - 5 Suggested Time Frame: 45 days	**K-PS2-1. Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.** **K-PS2-2. Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.** **Science and Engineering Practice** • **Planning and Carrying Out Investigations** - With guidance, plan and conduct an investigation in collaboration with peers. • **Analyzing and Interpreting Data** – Analyze data from tests on an object or tool to determine if it works as intended. **Disciplinary Core Ideas** • **PS2.A: Forces and Motion -** Pushes and pulls can have different strengths and directions. • **PS2.A: Forces and Motion** Pushing and pulling on an object can change the speed or direction of its motion and can start or stop it. • **PS2.B: Types of Interactions -** When objects touch or collide, they push on one another and can change motion. • **PS3.C: Relationship Between Energy and Forces -** A bigger push or pull makes things speed up or slow down more quickly. • **ETS1.A: Defining Engineering Problems –** A situation that people want to change or create can be approached as a problem to be solved through engineering. Such problems may have many acceptable solutions. **Crosscutting Concept** • **Cause and Effect –** Simple tests can be designed to gather evidence to support or refute student ideas about causes.