Kindergarten Science Standards

Earth & Space Science

K.ESS2 Earth's Systems

K.ESS2.1 **Use and share observations of local weather conditions to describe patterns over time.^** [Clarification Statement: Examples of qualitative observations could include descriptions of the weather (such as sunny, cloudy, rainy, and warm); examples of quantitative observations could include numbers of sunny, windy, and rainy days in a month. Examples of patterns could include that it is usually cooler in the morning than in the afternoon and the number of sunny days versus cloudy days in different months.] [Assessment Boundary: Assessment of quantitative observations limited to whole numbers and relative measures such as warmer/cooler.]

K.ESS2.2 **Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.^** [Clarification Statement: Examples of plants and animals changing their environment could include a squirrel digs in the ground to hide its food and tree roots can break concrete.][Assessment Boundary: Assessment is limited to a single example of a plant or animal per item or task.]

K.ESS3 Earth and Human Activity

K.ESS3.1 **Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.** [Clarification Statement: Examples of relationships could include that deer eat buds and leaves, therefore, they usually live in forested areas; and, grasses need sunlight so they often grow in meadows. Plants, animals, and their surroundings make up a system.][Assessment Boundary: Modeling is limited to describing the relationship and does not include patterns of structure and function to show how needs are met. Impact on the environment is beyond the standard.]

K.ESS3.2 **Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.*^** [Clarification Statement: Emphasis is on local forms of severe weather and preparation efforts to respond to weather events that sometimes happen more often in some regions or locations.][Assessment Boundary: Assessment focuses on a particular region at a particular time to describe weather and notice patterns, including severe weather events.]

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.*^** [Clarification Statement: Examples of human impact on the land could include cutting trees to produce paper and using resources to produce bottles. Examples of solutions could include reusing paper and recycling cans and bottles.][Assessment Boundary: Assessment focuses on the ability to choose solutions and communicate ways to reduce the impact(s) on land, water, and air, and other living things. Communication can be written, oral, drawings, modeling, or other ways that are comprehensible to others.]

Engineering, Technology, and the Application of Science

K.ETS1 Engineering Design

K.ETS1.1 **Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.** [Clarification Statement: Identifying a problem or need is necessary before designing a solution. For example, students can describe desired features or tools to solve a simple problem.][Assessment Boundary: Assessment does not include information regarding constraints (restraints or limitations).]

K.ETS1.2 **Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.** [Clarification Statement: Solutions or designs can be addressed in stages before describing the overall plan or design.][Assessment Boundary: Assessment is limited to the development of a single, simple solution illustrated by a sketch, drawing, or physical model.]

K.ETS1.3 **Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.** [Clarification Statement: Observations and measurements are collected and information is displayed to compare the performance of two objects. Students test solutions and collect data to identify the strengths and weaknesses of each object. Objects could feature shape, thickness, strength, speed, etc.][Assessment Boundary: Assessment is limited to sharing observations about the strengths and weaknesses of the analyzed data. Students will not be asked to propose an improved design based on the analyzed data.]

Life Science

K.LS1 From Molecules to Organisms: Structures and Processes

K.LS1.1 **Use observations to describe patterns of what plants and animals (including humans) need to survive.** [Clarification Statement: Examples of patterns could include that animals need to take in food but plants do not; the different kinds of food needed by different types of animals; the requirement of plants to have light; and, that all living things need water.][Assessment Boundary: Assessment is limited to patterns of light, food, or water as sources of matter and energy needed for growth. The process of photosynthesis is beyond the standard at this grade level.]

Physical Science

K.PS2 Motion and Stability: Forces and Interactions

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.** [Clarification Statement: Examples of pushes or pulls could include a string attached to an object being pulled, a person pushing an object, a person stopping a rolling ball, and two objects colliding and pushing on each other.] [Assessment Boundary: Assessment is limited to different relative strengths or different directions, but not both at the same time. Assessment does not include non-contact pushes or pulls such as those produced by magnets.]

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.*** [Clarification Statement: Examples of problems requiring a solution could include having a marble or other object move a certain distance, follow a particular path, and knock down other objects. Examples of solutions could include tools such as a ramp to increase the speed of the object and a structure that would cause an object such as a marble or ball to turn.] [Assessment Boundary: Assessment does not include friction as a mechanism for change in speed.]

K.PS3 Energy

K.PS3.1 **Make observations to determine the effect of sunlight on Earth's surface.** ^ [Clarification Statement: Examples of Earth's surface could include sand, soil, rocks, and water] [Assessment Boundary: Assessment of temperature is limited to relative measures such as warmer/cooler.]

K.PS3.2 **Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.*^** [Clarification Statement: Examples of structures could include umbrellas, canopies, and tents that minimize the warming effect of the sun.][Assessment Boundary: Assessment does not include information about how light travels or mechanisms of solar radiation.]

***This performance expectation integrates traditional science content with engineering through a practice or disciplinary core idea.

^This performance expectation references a proximal connection to climate change and the disciplinary core ideas: Earth's Systems and Earth and Human Activity.