

## Nature Walk (K-2<sup>nd</sup>) – Structure & Function

**Cross Cutting Concept (CCC):** The way in which an object or living thing is shaped and its substructure determine many of its properties and functions.

The material below encompasses the Next Generation Science Standard components that may be covered in your students' tour. **Subsequent grade levels build off of the DCI's that they learned the previous year.**

### Disciplinary Core Idea (DCI)

### Relation to Program

#### Kindergarten

**LS1.A Structure & Function:** All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow.

**LS1.C Organization of 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.

*During the walk*, students are reminded that –like animals –plants need food and water to survive and have specific parts (roots, stems, leaves, flowers) that help them obtain these needs in order to survive. Unlike animals however, plants have to harness the sun's energy in order to produce food. Students will be able to observe the plants as a larger whole, identifying, reflecting, and noting their parts' form and functions.

Students are encouraged to observe and inquire about how plants and animals interact with one another. Through observation and investigation, students should conclude that animals depend on plants for food and plants rely on animals to aid with pollination. Students are prompted to make the connection that humans, being animals, rely on plants for not only food but resources as well.

#### 1<sup>st</sup> Grade

**LS1.D Information Processing:** Animals have body parts that capture and convey different kinds of information needed for growth and survival – for example, eyes for light, ears for sounds, and skin for temperature or touch. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs (e.g., turn leaves toward the sun).

**LS2.A Interdependent Relationships in Ecosystems:** Animals depend on their surroundings to get what they need, including food, water, shelter, and a favorable temperature. Animals depend on plants or other animals for food. They use their senses to find food and water, and they use their body parts to gather, catch, eat, and chew food. Plants depend on air, water, minerals, and light to grow. Different plants

*During the walk*, students will observe animal and plant behavior and reflect on how these may lend themselves to their survival. Students will observe species in various habitats and discuss what characteristics they have that help them succeed in these environments. When these living conditions change, species may no longer be able to survive in these locations.

survive better indifferent settings because they have varied needs for water, minerals, and sunlight.

**LS2.C Ecosystem Dynamics, Functioning, and**

**Resilience:** The places where plants and animals live often change, sometimes slowly and sometimes rapidly. When animals and plants get too hot or too cold, they may die. If they cannot find enough food, water, or air, they may die.

**2<sup>nd</sup> Grade**

**LS3.A Inheritance of Traits:** Organisms have characteristics that can be similar or different. Young animals are very much, but not exactly, like their parents and also resemble other animals of the same kind. Plants also are very much, but not exactly, like their parents and resemble other plants of the same kind.

**LS3.B Variation of Traits:** Individuals of the same kind of plant or animal are recognized as similar but can also vary in many ways.

**LS4.C Adaptation:** Living things can survive only where their needs are met. If some places are too hot or too cold or have too little water or food, plants and animals may not be able to live there.

*During the walk*, students are reminded that species can only thrive in locations where they can gather the needs they need to survive.

Students are encouraged to observe, inquire, and investigate various plants and animals and note differences they notice between individuals. They will be led to discover that, like humans, individuals differ from one another – even their own parents. Docents will begin a discussion on how while these changes may start off minor, overtime there may be huge differences between individuals of the same species over several generations. These changes may lead to a flux in the individual’s ability to survive in its current environment.

**Science & Engineering Practices (SEP)**

**Asking Questions and Defining Problems:** Asking questions and defining problems in K-2 builds on prior experiences and progresses to simple descriptive questions.

**Planning and Carrying Out Investigations:** Planning and carrying out investigations to answer questions or test solutions to problems in K-2 builds on prior experiences and progresses to simple investigations, based on fair tests, which provide data to support explanations or design solutions.

**Analyzing and Interpreting Data:** Analyzing data in K-2 builds on prior experiences and progresses to collecting, recording, and sharing observations.

*During the walk*, students are encouraged to ask questions about their surroundings and why things are occurring in nature. Docents will lead several exploration and inquiry-based activities that will engage students in nature and inspire curiosity. These inquiries will lead to observations and investigations in the pursuit of answering these questions. Docents will aid students in their investigations to help them analyze their own findings.

### Performance Expectations (PE)

**K-LS1-1:** Use observations to describe patterns of what plants and animals (including humans) need to survive.

**2-LS2-1:** Plan and conduct an investigation to determine if plants need sunlight and water to grow.

*On the walk*, students will learn that about the major external plant parts and their functions. They will see what needs plants and animals need to survive and make connections between the universal needs of all living things.

*After the walk*, they will have the knowledge and experience to support their investigation of plants needing sunlight and water to grow.

### California's Environmental Principle(s) & Concept(s)

**Principle I:** The continuation and health of individual human lives and of human communities and societies depend on the health of the natural systems that provide essential goods and ecosystem services.

**Principle II:** The long-term functioning and health of terrestrial, freshwater, coastal and marine ecosystems are influenced by their relationships with human societies.

*Throughout the walk*, students are prompted to describe how humans rely on plants to survive. By the end of the tour, they will not only have an understanding on what plants provide humans but that our survival and way of life could not continue without them. In this discussion, students learn that human actions influence the natural environment with both immediate and long-term effects.

Through continual inquiry and observation, students will draw connections that humans, plants, and animals rely on natural systems to continue to exist.