

Nature Walk

Life Sciences

Grade 2

Focus: Form and function of plant parts and how these relate to animals (e.g. flowers and pollinators)

NGSS & Environmental Principals

Relation to Program

Disciplinary Core Idea (DCI)

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. (2-LS1-1)

LS2.A Interdependent Relationships in Ecosystems

Plants depend on water and light to grow. Plants depend on animals for pollination to move their seeds around. (2-LS2-1)

ESS2.E Biogeology Plants and animals can change their environment (2-ESS2-1)

During the walk, students will be shown how ecosystems are complex and that plants and animals are intertwined in complex relationships that are essential for their survival. They will be reminded that –like animals –plants need food and water (and sunlight) to survive. Students are encouraged to observe and inquire about how plants and animals interact with one another. Through observation and investigation, students’ guesses will be tested and, with docent guidance, students will conclude that animals depend on plants for food and plants rely on animals for pollination. Students are prompted to make the connection that humans, being animals, rely on plants for not only food but resources as well.

Throughout their walk, students will observe how changes plants and animals make to their environment to survive (e.g. build nests, make burrows, overgrow landscapes) can inadvertently alter the ecosystem.

Crosscutting Concepts (CCC)

Patterns: Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence.

Structure & Function: The shape and stability of structures of natural and designed objects are related to their function(s).

Cause and Effect: Events have causes that generate observable patterns.

Stability and Change: For both designed and natural systems, conditions that affect stability and factors that control rates of change are elements to consider and understand.

- Things may change slowly or rapidly.
- Some things stay the same while other things change.

During the walk, students will learn how basic plant parts (roots, stems, leaves, flowers) are designed to help plants obtain needs –whether it be gathering food and water, capturing sunlight, or reproducing – for their survival and recognize the reemerging pattern that these parts occur in some form on all plants, and all living things rely on natural cycles (e.g. pollination, seasonal rains, fire, etc.) to survive.

Throughout their walk, students will observe some of the effects phenomena like weather, climate, and organisms can have on an environment. Although some of these occurrences took place several to thousands of years ago, students will still be able to observe the effects of natural disasters such as the Jesusita Fire and prehistoric debris flows that carried

the Blaksley Boulder to its current location. These events happened in nearly no time at all (matter of days), or over a time period of thousands of years.

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.

- Ask questions based on observations to find more information about the natural world and/or designed world(s).
- Ask and/or identify questions that can be answered by an investigation.

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.

- With guidance, plan and conduct an investigation in collaboration with peers.
- Make observations to collect data that can be used to make comparisons.
- Make predictions based on prior experiences.

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

- Record information (observations, thoughts, and ideas).
- Use observations to describe patterns and/or relationships in the natural and designed world(s) in order to answer scientific questions and solve problems.

Constructing Explanations and Designing Solutions: Use information from observations to construct an evidence-based account for natural phenomena.

During the walk, students are encouraged to ask questions about their surroundings and why things are occurring in nature. With Docent guidance, these inquiries will lead to observations and investigations in the pursuit of answering these questions. Afterwards, students will use their findings to describe patterns that reoccur throughout the Garden.

After the tour, students will have the relevant evidence to describe and construct an account of the interdependency of plants and animals.

Performance Expectations (PE)

2-LS1-1 Ecosystems: Interactions, Energy, and Dynamics: Plan and conduct an investigation to determine if plants need sunlight and water to grow.

On the walk, students will be encouraged to remember what plants, and all living things, need to survive. Through questions and discussion, they will reach the conclusion that all living things need food and water to survive. Students will be reminded that plants obtain water from the soil and produce food

using the sun's energy.

After the walk, students will have the relevant knowledge and experience to conduct their own investigations and dive into this concept further on their own or in a group.

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.

- **Concept a:** Goods produced by natural systems are essential to human life and to the functioning of our economies and cultures.
- **Concept b:** Ecosystem services provided by natural systems are essential to human life and to the functioning of our economies and cultures.
- **Concept c:** The quality, quantity and reliability of the goods and ecosystem services provided by natural systems are directly affected by the health of those systems.

Principle III: Natural systems proceed through cycles that humans depend upon, benefit from, and can alter.

- **Concept a:** Natural systems proceed through cycles and processes that are required for their functioning.
- **Concept b:** Human practices depend upon and benefit from the cycles and processes that operate within natural systems.
- **Concept c:** Human practices can alter the cycles and processes that operate within natural systems.

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. As students see how the drought has affected many of the ecosystems within the Garden, they will be prompted to think about how these changes may affect the food and resources plants provide.

Through continual inquiry and observation, students will draw connections that humans, plants, and animals rely on natural systems to continue to exist. These systems are made up of cycles (e.g. pollination, seasonal rains, fire, etc.) which human practices can alter.

CA CCSS, ELA/ELD & Math

SL.2.3: Ask and answer questions about what a speaker says in order to clarify comprehension, gather additional information, or deepen understanding of a topic or issue.

W.2.2: Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding section.

During the tour, students are engaged through inquiry-based learning and encouraged to ask why something is certain way.

After this program, students will have the relevant evidence to describe what plants and animals need to survive, and how humans rely on plants and natural systems in order to live.