Habitat Hike (3rd-5th)

During this hour-long walk around the Garden, students have opportunities to examine the amazing adaptations and interdependent relationships between our local species first-hand. Our expert docents lead each tour using inquiry-based teaching methods to engage students with the natural world and inspire curiosity with their surroundings.

The Santa Barbara Botanic Garden's tours are aligned with Next Generation Science Standards (NGSS). Teachers have the option to have their tour revolve around one of two Cross Cutting Concepts. See below for tour options.

Structure & Function

Plants and animals have internal and external parts that help them survive. Many of California's native plants have developed special adaptations that enable them to thrive here.

Key tour concepts:

1. Plants and animals have structures that function to provide needs that support an individual's growth, survival, and reproduction.
2. Living things need food and water to survive and live in places that support their needs.
3. Organisms inherit traits from their parents which causes differences between individuals. Over time, the traits that are passed through multiple generations can lead to organisms developing adaptations that help a species survive in a given environment.
4. Habitats are never stagnant; they are dynamic environments that are constantly in flux due to changes in weather, organisms, and landscape. Environmental changes may cause some organisms to thrive while others die.
5. Humans depend on plants for food and resources and could not survive without them.

Energy & Matter

Plants and animals are interconnected through food webs. Energy cycles between the earth and organisms through these webs. California native plants play a pivotal role in the survival of our native animal species.

Key tour concepts:

1. Plants and animals need to intake food – or energy – and nutrients to grow, survive, and reproduce.
2. Plants, animals, and microorganisms are intertwined and rely on one another for survival.
3. Energy, matter, and nutrients cycle through an ecosystem through food webs.
4. Species engage in behaviors that help them obtain the food they need to survive.
5. Humans depend on plants for food and resources and could not survive without them.

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Sample Habitat Summary

Meadow: Walking towards the mountains students will see and hear a variety of birds, insects, and mammals as they make their way around the meadow. While these animals are collecting food from the many different plants they are distributing pollen around the Garden. This process is called pollination and is essential for the reproduction of nearly all plants. Pollen carriers like bees, wind, and birds (aka pollinators) provide the plant with pollen that it otherwise wouldn't have been able to collect on its own.

Riparian: Riverbeds are rich with life and provide homes for a wide variety of creatures, especially those you may miss at a cursory glance. Caddisflies, dragonflies, and a number of other insect larvae start their lives in the water before taking flight. These small invertebrates break down leaf litter and other debris in the streams. As adults, they become food for birds and other larger animals. When these large animals die, their remains provide food for carrion animals, like the turkey vulture and decompose, returning nutrients to the soil. All plants and animals are subject to this cycle of consumption and decomposition where after death their nutrients are returned to the soil from which they can then be reabsorbed by plants.

Deserts: In an environment characterized by scarce amounts of rain water, desert plants have developed adaptations to survive. Cacti and agave developed succulent leaves to store water it is able to obtain throughout the year. To protect this resource, they arm themselves with spines. Plants are also in danger of losing the water they've collected through evaporation. To keep themselves cooler, plants may have leaves oriented vertically rather than horizontally to reduce exposure to the sun, or white fur along their stems and leaves that acts like a white T-shit on a hot day by reflecting the sun's rays.

Chaparral: Chaparral is a rare plant community covering only 2% of all earth's landmass and is found exclusively in California and other Mediterranean climates. These climates are characterized by hot, dry summers and wet, rainy winters. Chaparral is dominated by shrubs with small, stiff, waxy, evergreen leaves that limit evaporation and hold water.

Oak Woodland: Oak trees produce acorns that are eaten by acorn woodpeckers, squirrels, and other native animals. The woodpeckers and squirrels then act as seed dispersal agents, carrying the acorns away from the original tree to add to their caches intended for later use. Inevitably some of these acorns are lost or forgotten and able to germinate.

Coastal Redwood Forest: California's redwood forests are home to the tallest trees on the planet. These impressive trees can grow up to 100m tall, but have very small leaves. These leaves are designed to comb through fog and collect the moisture that then falls to the ground to provide additional 'rainfall' to sustain such massive trees. Although Coastal Redwoods are some of the largest trees in the world, the ones at the Garden lack the ability to grow to their potential due to the lower amount of water here compared to up north.

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