Grade Two Pre-Visit Activities

Let’s Learn About Plants and Animals!

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Filoli Education Department
Some activities adapted from “Web of Life” by the San Francisco Botanical Garden Society. Original artwork by Megan Gnekow.
Introduction

*Let’s Learn About Plants and Animals* is a Grade Level Two activity booklet to use with your class before and after your Filoli Nature Hike to help your students get the most out of their trip. We encourage you to use these materials to prepare your students before their trip and to extend their learning when they return to the classroom.

Filoli is on 654 acres at the base of the Santa Cruz Mountains and has six miles of nature trails through six different ecosystems with a wide variety of plants and animals to observe. These activities help students learn to become nature investigators and are based on the California Life Science Grade Standards for Grade Two. These include learning how to be a nature detective and using our senses, identifying parts of a plant and their uses and how they differ in different environments.

**Grade Standards & Learning Objectives**

**State Standard for Life Sciences #2** Plants and animals have predictable life cycles. As a basis for understanding this concept:

- Students will examine how organisms reproduce offspring of their own kind and that the offspring resemble their parents and one another
- Students will learn that the sequential stages of life cycles are different for different animals, such as butterflies, frogs and mice
- Students will learn that many characteristics of an organism are inherited from the parents. Some characteristics are caused or influenced by the environment.
- Students will learn that there is variation among individuals of one kind in a population
- Students will examine how light, gravity, touch, or environmental stress can affect the germination, growth, and development of plants
Pre-Visit Activity 1

Parts of a Plant

What are the names for the parts of a plant?

PLANT WORDS AND PICTURES
Color this picture and say the words!

FLOWER
LEAF
FRUIT
STEM
ROOT
It's your turn to color and name the parts of a plant.

What do they do?

Flower

Fruit/Seed

Leaf

Stem

Root
Pre-Visit Activity 2
Plant a Seed—Be A Nature Detective

1. Using a bean, pea or any available seed, plant the seed in a paper cup of soil. As a Nature Detective, keep a journal of your plant.
2. Write down the date and time that you planted your seed. Put your seed in a sunny spot and water when necessary.
3. Write down when your seed first starts to sprout. Keep a record by sketching your plant as it changes and grows, labeling the parts.
4. See if different conditions change your plant—put the plant in the shade for a couple of days. Does it change appearance?
5. Try not watering your plant. How does it change?

The amount of water, heat, light and type of soil can have an impact on how your plant grows.

Flowers and fruit are involved in how a plant creates new plants. Different flowers and fruit appear at different times of the year. If you look in your neighborhood, what plants do you see that have flowers and fruits today. Write them down to share. In three months look outside again and see what is flowering and blooming.

Go for a walk in your schoolyard.

Pull up a weed and look at the roots. What do they look like? How do they feel? Do they have a smell?

Pull up a different weed. Do the roots look the same, feel the same, smell the same?
Vocabulary

**Characteristic** — feature of a plant or animal that you can observe

**Cone** — a hard, woody seed holder that some plants make

**Flower** — the part of a plant that can make a fruit with seeds inside

**Food** — what plants and animals need to survive

**Fruit** — the part of the plant that holds a seed

**Germinate** — begin to grow. A seed that has enough water and air may germinate.

**Leaf** — the part of a plant that makes food for the plant

**Nutrient** — something that living things need to grow and stay healthy

**Plant** — a living, growing thing that is different from animals. Plants are usually green and make their own food from sunlight, water and air

**Pollen** — a special dust made by a flower which helps it make seeds

**Root** — the part of a plant that holds it in the ground and sucks up water and minerals

**Seed** — a part of a plant formed in the flower and found inside fruit. Seeds grow into new plants.

**Stem** — the part of a plant that holds up the leaves and flowers and carries water and food

**Sunlight** — what plants need to make food

**Tree** — a large plant with a hard stem

**Variation** — a difference
For Spanish-language vocabulary see:
Pre-Visit Activity 3

Life Cycles

Plants and animals go through different stages. This is called a life cycle. Some animal young are similar to and some are very different from their parents. Let’s look at the life cycle of an animal, a California Newt, and that of an insect, a Common Buckeye Butterfly.

1. How are they different?
2. How are they the same?
3. Do the young look like their parents?

Life Cycle of the California Newt

aquatic adult (male)
has smooth skin, tail is flattened to allow for easier movement through water

terrestrial adult
has bumpy skin, tail is more round

egg sac
attached to stems or leaves of aquatic plants

larvae
has gills, lives in water before becoming terrestrial
Life Cycle of the Butterfly

**Common Buckeye**

from egg to butterfly and back again
Vocabulary

**Adult**—a fully grown organism. The last stage of a life cycle.

**Amphibians**—an animal that lives part of its life in water and part on land. A newt is an amphibian.

**Antenna**—long, thin “feelers” on an insect’s head

**Caterpillar**—the larva stage of a butterfly

**Characteristic**—feature of a plant or animal that you can observe

**Egg**—the first stage of a life cycle

**Environment**—the surroundings of a plant or animal

**Grassland**—a place with a lot of grass and few trees

**Habitat**—a place where an animal or a plant lives

**Inherit**—get characteristics from parents

**Insect**—an animal that has six legs and three body parts—the head, the thorax and the abdomen. Most insects have antennae and wings

**Insect life cycle**—the stages of life of an insect. There are two kinds of insect life cycles. Some insects go through four stages (egg, larva, pupa, adult). Others go from eggs to nymphs to adults.

**Larva**—the form of an insect that hatches from eggs. The second stage in a life cycle. Insect larvae look different from their parents, often worm-like

**Life cycle**—the stages in the life of a plant or animal

**Marsh**—soft, wet land that is often covered by water

**Nest**—a safe place where animals live and raise their young. Some animals use plants or other animals for nests
Nymph—a stage in a life cycle of an insect where there is not larva or pupa. Nymphs look like their parents but smaller

Offspring—new plant or animal produced by a parent

Organism—a living thing. Plants and animals are organisms

Pupa—the form of an insect between larva and adult stage. The third stage of a life cycle.

Pupate—to change into a pupa

Reproduction—the process of producing offspring. Offspring are new plants or animals

Shelter—a safe place where animals live. A shelter protects the animal from weather and other animals

Survive—to stay alive

Variation—a difference
Activity 4 Life Cycle

Plants and Animals You Might See on Your Visit
Artwork by Megan Gnekow

Banana Slug

Poison Oak

Coast Redwood

Lace Lichen

Black-tailed Deer & Tracks

California Newt

Common Buckeye Butterfly

Scrub Jay
**Post-Visit Activities**

**Habitats**

**Activity 1**

**Draw a habitat**

On your visit to Filoli, you walked through several different habitats: a grassland, an oak woodland, a riparian habitat and a redwood forest. Which was your favorite?

Use the next page to draw a picture of your favorite habitat showing plants, animals, rocks, soil and maybe water. Use the bottom of the page for your drawing.

1. Is there sun or shade?
2. Remember to look in the air, in the trees, on the ground, in the water and under the ground. All of these are part of a habitat.
3. Is the ground level or did you go up and down a hill? How will being at the top of a hill or at the bottom affect the plants and animals living there?
4. Imagine you are hiking through your favorite habitat. Remember that you play an important role in protecting this habitat and teaching others about it.
Draw your favorite habitat below:
Activity 2  Research

Of all the things you learned on your trip to Filoli, what would you like more information about? Write what new information you have gathered on this subject after your visit below.

My subject is_______________________________________
Vocabulary

Grassland—a place with a lot of grass and few trees. Some plants and animals you might see are tall grasses, a scrub jay, a deer or a gopher.

Habitat—a place where an animal or plant lives. Different plants and animals live in different types of habitat.

Oak woodland—a place with many trees, more sunlight than a redwood forest and lots of undergrowth. Different plants and animals you might see here are Coast Live Oaks, Valley Oaks, a Madrone (refrigerator tree), deer, squirrels, hawks, lizards, woodpeckers and sparrows.

Redwood forest—a place with lots of tall redwood trees and less sunlight and undergrowth than an oak woodland. Plants and animals that you might see here are redwoods, ferns, poison oak, banana slugs, California newts and Steller’s jay.

Riparian communities—a place near banks of small lakes, rivers, and streams. Plants and animals that you might see here are cottonwoods, maple trees, poison oak, frogs, raccoons, salamanders and sparrows.
Resource Materials

Books

Pre-visit

*Wildlife Habitats for Small Spaces* by Emily Stetson

*Newts* by Lola M. Schaefer

*Oaks of California* by Bruce M. Pavlik, Pamela C. Muick, Sharon G. Johnson and Marjorie Popper

Available in English and Spanish

*Banana Slugs: A close look at a giant forest slug of North America* by Alice Bryant Harper

*From Seed to Sunflower* by Gerald Legg

*Oak Tree* by George Morrison

Websites

California Oak Foundation  [www.californioaks.org](http://www.californioaks.org)


Artwork

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