



Pacifica's Mobile Nature & Horticulture Center

"Amazing Adaptations" Second and Third Grade Program Outline

Introduction: Students will learn about plant and animal groups and how the major groups have special adaptations to live and reproduce. We will also discuss what a behavioral adaptation is for different plants and animals. After the overview, students will visit four stations. Wrap-up will include a discussion of plant and animal adaptations to forest fires.

NATURE CENTER STATION OBJECTIVES:

1. To learn to identify groups of animals.
2. To explore ways that animals are adapted to their environment.

ACTIVITIES:

YELLOW STATION

VERTEBRATE CLUES—

1. Students will learn about the five main backbone animals: fish, reptiles, amphibians, birds and mammals and their adaptations.

BLUE STATION

ADAPATED BODY PARTS—

2. Students will learn about adaptations by looking at animals' parts such as feet, skin/coverings, and beaks of animals. Students will complete matching activities in their journals and explore how cold-blooded animals adapt to temperature change.

HORTICULTURE CENTER STATION OBJECTIVES:

1. To learn the parts of plants.
2. To discuss how plants and seeds have adapted, including seed dispersal and transpiration.
3. To learn about data collection and the steps of scientific inquiry.

ACTIVITIES:
RED STATION
LEAVES—

1. Students will explore the different types of leaves and their characteristics.
 - a. Students will make journal entries about the different characteristics of leaves and how they have adapted.
 - b. Students will learn about insectivorous plants and how they have adapted.

GREEN STATION
SEEDS—

2. Students will explore how seeds are adapted to disperse and grow.
 - a. Bean seeds will be examined and then placed in a sandwich bag for careful observation and data entry on the journal activity sheet.
 - i This activity will be completed in the classroom.
 - b. Seeds will be planted for re-vegetation of the Quartz Fire location.

Connections to the Certificate of Initial Mastery (CIM) Standards:
Nature Center Objectives –

Unifying Concepts and Processes: Understand and apply major concepts and processes common to all sciences.

Common Curriculum Goal: Apply foundation concepts of change, cycle, cause, and effect, energy and matter, evolution, perception, and fundamental entities.

Content Standards: Use concepts and processes of – Evolution and equilibrium.
Leads to or meets the Benchmark at Grade 3:

1. Student will be able to identify examples of change over time.
2. Student will be able to describe how some things change and some things remain the same.

Common Curriculum Goal: Apply foundation concepts of change, cycle, cause and effect, energy and matter, evolution, perception, and fundamental entities.

Content Standards: Use concepts and processes of – Structure and Function.
1. Identify structures that serve different functions.

Physical Science: Understand structures and properties of matter and changes that occur in the physical world.

Common Curriculum Goal: MATTER – Understand structure and properties of matter.

Content Standards: Identify structures and properties of matter.

Leads to or meets the Benchmark at Grade 3:

1. Student will be able to describe objects according to their physical properties.

Life Science: Understand structures, functions, and interactions of living organisms and the environment.

Common Curriculum Goal: ORGANISMS – Understand the characteristics, structure, and functions of organisms.

Content Standards: Describe the characteristics, structure, and functions of organisms.

Leads to or meets the Benchmark at Grade 3:

1. Student will be able to classify organisms based on a variety of characteristics.

Horticulture Center Objectives –

Unifying Concepts and Processes: Understand and apply major concepts and processes common to all sciences.

Common Curriculum Goal: Apply foundation concepts of change, cycle, cause, and effect, energy and matter, evolution, perception, and fundamental entities.

Content Standards: Use concepts and processes of – Evolution and equilibrium.
Leads to or meets the Benchmark at Grade 3:

1. Student will be able to identify examples of change over time.

Common Curriculum Goal: Apply foundation concepts of change, cycle, cause and effect, energy and matter, evolution, perception, and fundamental entities.

Content Standards: Use concepts and processes of – Structure and Function.
1. Identify structures that serve different functions.

Physical Science: Understand structures and properties of matter and changes that occur in the physical world.

Common Curriculum Goal: MATTER – Understand structure and properties of matter.

Content Standards: Identify structures and properties of matter.
Leads to or meets the Benchmark at Grade 3:

1. Student will be able to describe objects according to their physical properties.

Nature Center and Horticulture Center Objectives

Scientific Inquiry: Use interrelated processes to pose questions and investigate the physical and living world.

Common Curriculum Goal: Formulate and express scientific questions and hypotheses to be investigated.

Content Standard: Formulate and express scientific questions and hypotheses to be investigated.

Leads to or meets the Benchmark at Grade 3:

1. Ask questions and make predications that are based on observations and can be explored through simple investigations.
2. Ask questions about objects, and events in the world.
3. Identify questions that can be explored through scientific investigation.

Common Curriculum Goal: Design scientific investigations to address and explain questions and hypotheses.

Content Standard: Design scientific investigations to address or explain questions and hypotheses.

Leads to or meets the Benchmark at Grade 3:

1. Plan a simple investigation.

Common Curriculum Goal: Conduct procedures to collect, organize, and display scientific data.

Content Standard: Conduct procedures to collect, organize, and display scientific data.

Leads to or meets the Benchmark at Grade 3:

1. Collect data from an investigation.

Common Curriculum Goal: Analyze scientific information to develop and present conclusions.

Content Standard: Analyze scientific information to develop and present conclusions.

Leads to or meets the Benchmark at Grade 3:

1. Use the data collected from an investigation to explain the results.

Pre-Visit Activities:

1. Review background material on plant and animal adaptations. This can be found in this packet along with possible warm-up activities before the visit. Please introduce your students to the theme word for this visit: "Adaptation"—Part of an animal or plant or a behavior that makes it especially suited to live in its habitat.

Post-Visit Activities:

1. Complete the activities begun in the "Caterpillar":
 - a. Yellow Station: Animal groupings (warm-blooded or cold-blooded).
 - i. Classifications of groups and adaptations for their habitats.
 - b. Blue Station: CopyCat Page for The Vertebrate Grab Game.
 - c. Red Station: Parts of Plants and Their Adaptations worksheet.
 - d. Green Station: Watch my Seed Grow.
 - i. Collect data and make predications and record observations as the seed grows into a plant.

Optional Post-Visit Extensions:

2. Vertebrate Characteristic Game.
3. "Camouflaged Creatures", from Science Is.
4. Make-a-seed art project. This will extend the concept of how seeds travel and adapt.
5. Directions for a more in-depth experiment in plant leaf transpiration are available.

Pacifica's Mobile Nature and Horticultural Center Curriculum

6. There is information about several possible post-visit activities are in the back pocket of each grade level's folder.