

# OUR CHANGING PLANET

**Lesson Goal:** To understand the elements of cycles and patterns in the natural world.

## Learning Objectives:

- Students will recognize that within the plant and animal kingdoms there are cycles and patterns of change.
- Students will recognize that within the physical world there are cycles and patterns of change.
- Students will describe the water cycle.
- Students will identify the four seasons and the associated changes in nature.

## Grade Level: 2

### California Science Standards

- LS 2.a. Plant and animals have predictable life cycles.
- LS 2.b. Sequential stages of life cycles.
- LS 2.c. Characteristics of organisms.
- LS 2.d. Individual variation within a population.
- LS 2.e. Stress can effect germination, growth, and development of plants.
- LS 2.f. Reproduction in plants.
- ES 3.a. Compare physical properties of rocks.
- ES 3.b. Weathering and breakage of rocks.
- ES 3.c. Soil is made from rock and organic material.
- ES 3.d. Fossils provide evidence about plants and animals.
- I&E 4.a. Make predictions based on observed patterns.
- I&E 4.c. Compare and sort common objects.
- I&E 4.g. Follow oral instructions for scientific investigation.

See accompanying standards correlations.

## ACTIVITIES:

1. Walk along Pennington Creek to observe and discuss the seasonal changes in a creek ecosystem.
2. Visit the pond. Observe and discuss insect life cycles. Feed local fish.
3. Visit the garden and investigate the life cycles of plants. Plant seeds.
4. Visit the rock garden to observe and discuss the rock cycle.
5. Visit the science lab to discuss the water cycle and the life cycle of aquatic creatures.
6. Visit the arthropod classroom to discuss insect life cycles. Observe and touch live arthropods.

## VOCABULARY

|               |           |           |        |           |
|---------------|-----------|-----------|--------|-----------|
| amphibian     | aquatic   | arthropod | change | chrysalis |
| cocoon        | cycle     | erosion   | larva  | leaves    |
| metamorphosis | migration | nymph     | pupa   | root      |
| seasons       |           |           |        |           |

# RANCHO EL CHORRO OUTDOOR SCHOOL

## OUR CHANGING PLANET – 2<sup>nd</sup> Grade

### Standards Correlations

The following Science standards are addressed in this 2<sup>nd</sup> grade program.

#### Science Standards

**LS 2. Plants and animals have predictable life cycles. As a basis for understanding this concept:**

- 2.a. Students know that organisms reproduce offspring of their own kind and that the offspring resemble their parents and one another.
- 2.b. Students know the sequential stages of life cycles are different for different animals, such as butterflies, frogs, and mice.
- 2.c. Students know many characteristics of an organism are inherited from the parents. Some characteristics are caused or influenced by the environment.
- 2.d. Students know there is variation among individuals of one kind within a population.
- 2.e. Students know light, gravity, touch, or environmental stress can affect the germination, growth, and development of plants.
- 2.f. Students know flowers and fruits are associated with reproduction in plants.

**ES 3. Earth is made of materials that have distinct properties and provide resources for human activities. As the basis for understanding this concept:**

- 3.a. Students know how to compare the physical properties of different kinds of rocks and know that rock is composed of different combinations of materials.
- 3.b. Students know smaller rocks come from the breakage and weathering of larger rocks.
- 3.c. Students know that soil is made partly from weathered rock and partly from organic materials and that soils differ in their color, texture, capacity to retain water, and ability to support the growth of many kinds of plants.
- 3.d. Students know that fossils provide evidence about the plants and animals that lived long ago and that scientists learn about the past history of Earth by studying fossils.

**I&E 4. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:**

- 4.a. Make predictions based on observed patterns and not random guessing.
- 4.c. Compare and sort common objects according to two or more physical attributes.
- 4.f. Follow oral instructions for a scientific investigation.

Our Changing Planet also supports the instruction of the following standards:

### **English Language Arts Standards**

**1.0 Listening and Speaking Strategies: Students listen critically and respond appropriately to oral communication. They speak in a manner the guides the listener to understand important ideas by using proper phrasing, pitch, and modulation.**

- 1.1 Determine the purpose or purposes of listening (e.g., to obtain information, to solve problems, for enjoyment).
- 1.2 Ask for clarification and explanation of stories and ideas.
- 1.4 Give and follow three-and four-step oral directions.
- 1.7 Recount experiences in a logical sequence.

**1.0 Written and Oral English Language Conventions: Students write and speak with a command of the standard English conventions appropriate to this grade level.**