



# Organic vs. Inorganic Components of Soil

High School Physical Science | Fall Module 1 | Lake Lotus Park

## NGSSS Big Idea: Standard 17—Interdependence

- A. The distribution and abundance of organisms is determined by the interactions between organisms, and between organisms and the non-living environment.
- B. Energy and nutrients move within and between organic and inorganic components of ecosystems via physical, chemical and biological processes.
- C. Human activities and natural events can have profound effects on populations, biodiversity and ecosystem processes.

## Benchmark Code & Description:

**SC.912.L.17.7**—Characterize the organic and inorganic components that define freshwater systems, marine systems and terrestrial systems.



## LEARNING GOAL/OBJECTIVE

Characterize the organic and inorganic components of a fresh water system and a terrestrial system.



## PREREQUISITES

### *Review:*

- Vocabulary Words
- Applicable Textbook Sections



## VOCABULARY

- |                     |                       |               |
|---------------------|-----------------------|---------------|
| • Environment       | • Ecology             | • Consumers   |
| • Organic Factors   | • Freshwater Systems  | • Decomposers |
| • Inorganic Factors | • Marine Systems      | • Producers   |
| • Community         | • Terrestrial Systems | • Habitat     |
| • Biosphere         | • Population          | • pH          |



# HANDS-ON ACTIVITIES

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## **Task(s):**

- Collect samples with soil probe rod
- Observe samples under a microscope
- Measure the pH of each soil sample

## **Provided Materials:**

- Soil Probes
- Plastic Tray
- pH Probe
- Ecosystem Observation Sheet
- Clipboard/log sheets/pencils
- Ziplock Bags
- Labquest Meter

**Career Options:** Park Ranger, Ecologist, Biologist, Research Scientist, Field Tech

## **Lesson Steps:**

1. Present a short history of the park and the St. John's River while walking toward sampling areas. Relate the importance of soil in our environment to familiar concepts of the students. Take samples at:
  - a. Location #1—East of pavilion 4
  - b. Location #2—Behind the flagpole
  - c. Location #3—Sandhill area
2. Use soil probes to take soil samples and place into plastic baggies.
3. Go to Environmental Center to observe the samples under a microscope.
4. Discuss the microscopic findings as well as the sampling area from where the samples were taken
5. Make a water/soil solution out of each sample. Use meter to measure pH of each sample. Discuss how this affects the plants found in each sample area.

