

## **Plant Life Study Teacher's Guide**

*Compare the plant species around two lakes using the Water Atlas, guidebooks and a lake visit*

**Grade Level:** 6th – 8th

**Subject Area/Course:** Earth Science, Life Science, Environmental Science

### **Performance Objectives:**

*References are to the Next Generation Sunshine State Standards (2007).*

#### **Science**

- SC.6.N.1.1 Define a problem from the sixth grade curriculum, use appropriate reference materials to support scientific understanding, plan and carry out scientific investigation of various types, such as systematic observations or experiments, identify variables, collect and organize data, interpret data in charts, tables, and graphics, analyze information, make predictions, and defend conclusions.
- SC.6.N.1.4 Discuss, compare, and negotiate methods used, results obtained, and explanations among groups of students conducting the same investigation.

### **Academic Outcomes/Lesson Objectives:**

Students will learn about the plant life in and around a lake on campus (or any lake on the water atlas website) by:

- Sharing prior knowledge
- Making observations
- Reading field guides to identify plants
- Making predictions based on observations
- Collecting data
- Draw conclusions based on evidence gathered

### **Background Information:**

Florida has a wonderful diversity of plant life. It is good for students living in Florida to become familiar with the plants of various ecosystems in their state. It is important for students to understand the important role plants play in all ecosystems. Plants are the primary producers that support the food chain. It is also important for students to be able to identify poisonous plants versus nonpoisonous plants. This is a good exercise for student to learn how to properly take plant samples and how to properly categorize the plants and classify them. Once students have identified plants around their lake system they can compare them to plants found around other lakes on the Seminole WaterAtlas website. You can then discuss the different plants and habitats in the lake systems. What do the lake systems have in common? What are their differences?

### **Materials Needed:**

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- Lake access on-site or at a nearby park. If no lake is available, use the Advanced Mapping tool to find a nearby lake to use as your study lake.
- Internet access
- Field guides to North American trees, wildflowers, and shrubs
- Clipboards
- Sketch paper
- Plant press (optional)
- Camera (digital or film camera and scanner)

### **Safety:**

- Go over basic lab safety.
- Go over proper outdoor behavior.
- Go over how to properly take leaf and flower samples.

### **Vocabulary:**

Introduce these terms: Native, exotic, invasive and photosynthesis. You may want to go over plant structure, leaf terminology, inflorescences, palm terms, and tree shapes.

### **Procedures:**

1. Teacher Preparation:
  - a. Gather all of the field guides you will need. It is best to have multiple copies,
  - b. Familiarize yourself with the local plant life you are about to study with your students.
  - c. If you are interested in collecting samples and having your student dry the leaves and petals of the plants they are identifying you will need to make a plant press. A few sheets of acid free paper, two pieces of thick cardboard and strap that can be tightened will work. You will just need to keep it in a dry place for a couple of weeks.
  - d. If you want students to bring samples from home you will need to assign that ahead of time.
2. Class Procedure:
  - a. Guide your students to [www.Seminole.WaterAtlas.org](http://www.Seminole.WaterAtlas.org). Use the Water Resource Search to locate the study lake and look over the plants listed. Follow the links and view the descriptions and photos.
  - b. You will want to introduce the topic of plant diversity to your students. Talk about the different types of plant you might find around a lake ecosystem. Talk about the life cycles of plant, the importance of photosynthesis. Talk about the benefits and disadvantages of different species of plants. Introduce the concept of native plants versus exotics plants.
  - c. Introduce your students to their field work assignment.

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*Water Atlas Curriculum Lesson 31*

- d. Return to the Seminole Water Atlas and compare your discoveries with other lake systems.

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