Plant Life Study *Teacher's Guide*

Compare the plant species around two lakes using the Watershed Atlas, guide books and a lake.

GRADE LEVEL: 6th – 8th

SUBJECT AREA/COURSE: Earth Science, Life Science, Environmental Science

SUNSHINE STATE STANDARDS:

- The student uses the scientific processes and habits of mind to solve problems. (SC.H.1.4)
- The student understands that most natural events occur in comprehensible consistent patterns. (SC.H.2.4)
- The student understands that humans are part of an ecosystem and their activities may deliberately or inadvertently alter the equilibrium in ecosystems. (SCG.2.3.4)
- The student knows that scientific knowledge is subject to modification as new information challenges prevailing theories and as new theory leads to looking at old observations in a new way. (SC.H. 1.3.1)
- The student knows that a change in one or more variables may alter the outcome of an investigation. (SC.H.1.3.5)
- The student knows that all biotic and abiotic factors are interrelated and that if one factor is changed or removed, it impacts the availability of other resources in the system. (SC.G.2.3.3)

ACADEMIC OUTCOMES/LESSON OBJECTIVES: Students will learn about the plant life in and around a lake on campus (or any lake on the Watershed 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 verses nonpoisonous plants. This is a good exercise for students 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 Hillsborough Watershed Atlas 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:

- Lake access on-site or at a nearby park. If no lake is available, follow the Real Time Data and select one of these lakes as your study lake.
- Internet access
- Field guides to North American trees, wildflowers, and shrubs
- Clip boards
- Sketch paper
- Plant press (optional)
- Camera (digital or film camera and scanner)

Name: Date:

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SAFETY:

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

VOCABULARY: Introduce the terms: Native, exotic, invasive and photosynthesis. You may want to review plant structures, leaf terminology, inflorescences, palm terms, and tree shapes.

KEY: Answers will vary.

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.Hillsborough.WaterAtlas.org > The Atlas > your chosen lake > Ecology > List of Plant Species. 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 plants you might find around a lake ecosystem. Talk about the life cycles of plants, and 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.
   d. Return to the Hillsborough Water Atlas and compare your discoveries with other lake systems.

AUTHOR: Lindsey Spalding, Rock Lake Middle School – Modified from the original lesson plans created for the Seminole County Watershed Atlas.