

## Lab 5 Worksheet: Plant Diversity

In this lab you will explore the diversity of Plant taxa. There are specimens of algae and the four major groupings for you to examine. You should include a **labeled drawing of one specimen from each group** with your worksheet.

### 1) ALGAE

Algae are a polyphyletic group containing a diverse array of photosynthetic eukaryotic organisms. This term is largely informal, containing the brown algae (protist), the red algae (protist), and the green algae (plants).

A. Examine the *Fucus* and *Spirogyra* specimens.

- a. How are the structures of these algae different? 3 pts
- b. What habitats are these two algae generally found in? 4 pts

### 2) BRYOPHYTES

The Bryophytes contain the liverworts, hornworts, and mosses. These are non-vascular land plants that produce gametangia and sporangia as reproductive structures.

A. Examine the *Marchantia* specimens.

- a. Indicate the Linnean classification from Kingdom to Genus. 5 pts
- b. Draw and label the male, female, and asexual reproductive structures. 12 pts
- c. What is the common name of this specimen? 1 pt

B. Examine the *Mnium* specimen.

- a. Indicate the Linnean classification from Kingdom to Genus. 5 pts
- b. Draw and label the sexual and asexual life stages. 8 pts
- c. What is the common name of this specimen? 1 pt

### 3) PTERIDOPHYTES

The Pteridophytes are a paraphyletic group of vascular plants that reproduce via spores. This group contains the clubmosses, horsetails, and ferns.

A. Examine the *Lycopodium* specimen.

- a. Indicate the Linnean classification from Kingdom to Genus. 5 pts
- b. Draw and label the following: stem, leaf, strobilus, spores. 7 pts

B. Examine the *Equisetum* specimens.

- a. Indicate the Linnean classification from Kingdom to Genus. 5 pts
- b. Draw the vegetative form and label the following: node, internode, leaves, whorls, branches. 8 pts
- c. Draw the sexual form and label the following: node, internode, leaves, strobilus, spores. 8 pts
- d. *Equisetum* are sometimes called "living fossils". Explain why. 5 pts

C. Examine the *Polypodium* specimen.

- Indicate the Linnean classification from Kingdom to Genus. 5 pts
- Draw and label the following: frond, sori, spores. 6 pts

#### 4) SPERMATOPHYTES: GYMNOSPERMS

The Spermatophytes are the vascular seed plants. There are two major taxa within this group. The first is the Gymnosperms, which are distinguished by having seeds that are not enclosed within an ovary, but rather develop on scales or leaves that are often modified into a cone structure.

A. Examine the *Pinus* specimens.

- Draw and label the male and female strobilus. 8 pts
- Indicate the Linnean classification of the Bahamian Pine from Kingdom to Species (including the variety). 7 pts
- On what islands is the Bahamian Pine found? 5 pts
- The Bahamian Pine is **endemic** to the Lucayan Archipelago. What does this mean? 5 pts

#### 5) SPERMATOPHYTES: ANGIOSPERMS

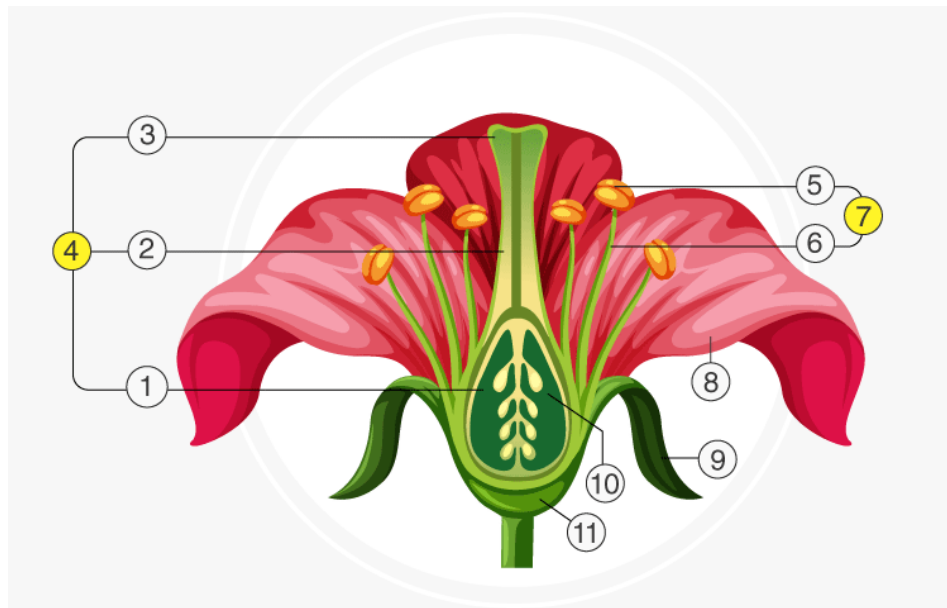
The other major taxa within the Spermatophytes is the Angiosperms, which are the flowering plants. They are characterized by having seeds enclosed in an ovary (fruits) and flowers (reproductive structures).

A. Examine the *Lilium* and *Prunus* specimens.

- Indicate the Linnean classification of each from Kingdom to Genus. 10 pts
- Compare the leaves, fruits, and flowers. What are some similarities and differences for each? 9 pts
- What are the common names of these specimens? 2 pts

B. Examine the diagram below.

- Label the anther, filament, ovary, ovule, petal, pistil, receptacle, sepal, stamen, stigma, style. 11 pts



B. Explore the plant life on campus to find an example of an angiosperm.

- a. Include a photo and location for your specimen. 3 pts
- b. Indicate the Linnean classification for your plant from Kingdom to Species. 6 pts
- c. What do its flowers, fruits and seeds look like? Include a photo or drawing. 6 pts

## 6) Native Bahamian Plant Species Report

Pick any **native** Bahamian plant species and write a short report including its: (60 pts)

- Description
- Classification
- Geographic Range
- Habitat
- Growth form
- Reproductive strategy
- Conservation status
- An interesting aspect of its biology (medicinal, cultural, economic importance, etc.)
- A minimum of three primary or secondary literature sources

Your report should be a maximum of three pages double-spaced in a standard font, excluding references. Make sure to italicize Genus and species names. You may abbreviate the genus to its first letter after you use it for the first time, but do not use the abbreviation at the beginning of a sentence. Cite your sources in APA format. You must refer to your sources within the text of your report as well as at the end.

The Leon Levy Native Plant Preserve website is a good starting point for information:

<https://levypreserve.org/>

### Grading Rubric:

Content – 45 pts

5 pts for each section

Style – 15 pts

5 pts – spelling and grammar

5 pts – clarity and organization

5 pts – follows the guidelines