

CLASS ACTIVITIES...

Throughout these exercises it is extremely important NOT TO PICK any flowers or leaves from the plants! Any plant parts that have already dropped to the ground are fine to pick up...again, as long as they were already there and you DO NOT have to enter any beds or planters to acquire them. Please be respectful of the amazing and difficult work that the horticultural staff goes through to make this such a magic place. Besides, there is plenty of security around and you wouldn't want to get ejected from the park!

Also, it is extraordinarily important not to work on your project while on any rides (except for maybe the Teacups!). Safety must be observed at all times!

Many of the exercises involve drawing your observations. It is necessary to complete three sheets for each plant described (I-III). The sheets are provided separately, so be sure to make enough printouts or photocopies for the number of plants you wish to draw.

Since many botany terms may be new to you, feel free to use the provided glossary.

NAME: _____

DATE: _____

EXERCISE I

In this exercise you will draw several plants from a land chosen by you or your teacher.

You will include detailed characteristics that will allow a grader to identify the plant. Alternately, your drawings and descriptions may be used for other classmates to identify the plant on the Plants of Disneyland website for credit.

What is the name of the land you have chosen?

Draw the largest or tallest tree in this land (in your estimation).

What kind of environment is this land trying to portray? (e.g. alpine, jungle, southwest desert, etc.)

Aside from the largest or tallest, draw three of the most dominant plants that create the ambiance for this land. Use the three separate drawing sheets.

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EXERCISE II

Find and draw a plant from the Bignonia (Bignoniaceae) family. Plants in the Bignoniaceae family have the following range of traits. Identify as many of these traits on your drawing as you can:

Leaves

- Pinnately or multiply compound, but occasionally palmately compound or simple.
- Petiolate and exstipulate (but pseudostipules are present in the genus *Markhamia*).
- Domatia occur in at least 14 genera.

Flowers

- Bisexual
- Zygomorphic
- 5-merous
- In cymes
- Calyx of 5 united sepals
- Calyx synsepalous
- Corolla and calyx are distinct from each other
- Corolla of 5 united petals, equally fused into a sympetalous campanulate corolla. These lobes are often clearly shorter than the tube. Sometimes, a 2-lipped (bilabiate) corolla is observed.
- Hypogynous
- Solitary or aggregated into racemes or cymes (dichasium or helicoids cyme)
- Axillary or terminal inflorescence
- Bracts and bractlets are present
- Sepals are fused
- The androecium is didynamous, i.e. there are 4 stamens occurring in 2 pairs of different lengths.
- The stamens are inserted epigynously and alternate with the corolla lobes.
- The anthers are often connivent but also separate from one another sometimes.
- One staminode may be present.
- The gynoecium is stylate and median. It consists of one compound pistil with 2 carpels, a single style, and a superior ovary with typically 2 locules (more rarely 1 or 4), each bearing numerous axile ovules.
- An annular or cupular nectary disk usually occurs around the ovary base.
- Ovules are anatropous, with micropyles directed downward.

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Fruit

- The fruit is typically an elongated dehiscent capsule that opens loculicidally or septicidally.
- The fruit can sometimes be an indehiscent berry.

Seeds

- The seeds, numerous, are usually winged and wind-dispersed but occasionally also comose and wingless.
- Arils are absent.
- Seeds do not have endosperms.

Other

Plants in the Bignoniaceae and its tribes are used extensively throughout the park(s). They are among the most noticeable trees and vines when in bloom. Some genera in the park in the Bignoniaceae include: *Spathodea*, *Jacaranda*, *Tabebuia*, *Distictis*, *Clytostoma*, *Macfadyena*, *Markhamia*, *Pandorea*, *Tecoma*.

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Find and draw a plant from the Fig (Moraceae) family. Plants in the Moraceae family have the following range of traits. Identify as many of these traits on your drawing as you can:

Leaves

- Leaves alternate, simple, often lobed
- 2 stipules

Flowers

- Flowers unisexual
- Variety of inflorescences, including catkins
- Wind-pollinated with the exception of *Ficus*, which is wasp-pollinated
- Flowers in invaginated receptacles (a syconium) in the Ficeae subfamily.

Fruit

- Fruit a multiple composed of many small drupes

Seeds

- Seed without endosperm

Other

- Milky white latex from laticifers throughout plant

Some genera in the park in the Moraceae include:

Ficus; *Morus*

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Find and draw a plant from the Palm (Arecaceae) family. Plants in the Arecaceae family have the following range of traits. Identify as many of these traits on your drawing as you can:

Leaves

- Leaves large
- Palmate (fan-shaped), pinnately compound, or simple
- Petiole sheathing at base
- Alternate
- Often in a terminal cluster

Flowers

- Flowers small
- Unisexual or bisexual
- Actinomorphic
- Inflorescence large and paniculate
- Plants with unisexual flowers monoecious or dioecious

Fruit

- A berry, or fleshy or dry drupe

Seeds

- Large endosperm
- Small embryo

Other

- Trees or shrubs, usually unbranched

Some genera in the park in the Arecaceae include:

Archontophoenix; Butia; Caryota; Chamaedorea; Chamaerops; Howeia; Phoenix; Syagrus; Trachycarpus; Veitchia; Washingtonia

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Find and draw a plant from the Myrtaceae family. Plants in the Myrtaceae family have the following range of traits. Identify as many of these traits on your drawing as you can:

Leaves

- Leaves are aromatic, containing oil glands

Flowers

- Flowers may be white, pink, red, purple, or yellow
- Usually have five sepals and petals and many stamens
- Stamens are long and conspicuous
- In the genus *Eucalyptus*, the petals and sepals are joined to form a cap over the bud.

Fruit

- Fruit is generally woody

Seeds

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Other

- Range from woody shrubs to tall trees

Some genera in the park in the Myrtaceae include:

Callistemon; *Eucalyptus*;

NAME: _____

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Extra Credit / Fun:

Find and draw or take a photograph of a "hidden Mickey" in the leaves or flowers of the plants...if you can find one!

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