

Plant Structures and Function

Summary

Students will examine plant parts macroscopically and microscopically and relate structure to function.

Time Frame

1 class periods of 90 minutes each

Group Size

Pairs

Materials

- [student sheet](#)
(attached)
- celery (with leaves)
- food coloring
- salt
- beakers
- geranium or other leafy plant
- microscope slides
- iodine
- razors or exacto knives
- methyl blue stains
- prepared leaf and root tip slides
- tree "cookies" (cross sections of tree trunk)
- flowers (ask for expired ones at a florist)
- microscopes
- Wandering Jew leaf
- leaves from a monocot (grass, lily) and dicot (geranium, tree)

Instructional Procedures

Set the lab up in stations so that students work in teams of two. If there are 30 students, you will need 15 stations. You can have two or three of the same station. The students may occasionally have to wait and if you make an extra station or two, that keeps them occupied.

Read over the directions with students and pair them up with a partner. Remind them that only one team will be at a station at a time.

Allow students time to work and move to each station. Stations should be numbered.

Summarize the students' results at the end of class.

Station preparation:

Station One-

Celery set in colored water several hours before hand for microscopic examination

Station Two-

Tree cookies can be purchased or made in a shop class from whole tree trunks with cross sections sawed cleanly. The diagram below can accompany the cookies.

Station Three-

Split celery in two vertically and place one half in salty water and one half in water with food coloring several hours before the lab.

Station three-

look at the red, backside of a leaf. The stomata are clearly visible and are green.

Station four-

Cut a small piece of the leaf and place it on a slide with cover slip.

Station five-

prepared slide

Station six-

Have examples of parallel vein and branching veins available.

Station Seven-

Prepared Slilde

Station Eight-

Flower dissection or observation of an already dissected flower (depending on flower availability)

Bibliography

Lesson Design by Jordan School District Teachers and Staff.

Authors

[Utah LessonPlans](#)