Plant Structures and Function

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

Main Core Tie
Science - Biology
Standard 3 Objective 1

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 slide

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