**Requirements:**

* 1. Visit a park, forest, or other natural area near your home. While you are there: (2 hours)
     1. Determine which species of plants are the largest and which are the most abundant. Note whether they cast shade on other plants.
     2. Record environmental factors that may influence the presence of plants on your site, including latitude, climate, air and soil temperature, soil type and pH, geology, hydrology, and topography.
     3. Record any differences in the types of plants you see at the edge of a forest, near water, in burned areas, or near a road or railroad.
  2. Select a study site that is at least 100 by 100 feet. Make a list of the plants in the study site by groups of plants: canopy trees, small trees, shrubs, herbaceous wildflowers and grasses, vines, ferns, mosses, algae, fungi, lichens. Find out which of these are native plants and which are exotic (or nonnative). (1.5 hours)
  3. Tell how an identification key works and use a simple key to identify 10 kinds of plants. Tell the difference between common and scientific names and tell why scientific names are important. (0.5 hours)
  4. Collect, identify, press, mount, and label 10 different plants that are common in your area. Tell why voucher specimens are important for documentation of a field botanist's discoveries. (1 hour)
  5. Obtain a list of rare plants of your state. Tell what is being done to protect rare plants and natural areas in your state. Write a paragraph about one of the rare plants in your state. (1 hour)
  6. Choose ONE of the following alternatives and complete EACH of its requirements:
     1. Tree Inventory (2 hours)
        1. Identify the trees found on the NC FFA Forestry Identification list.
        2. Collect, press, and label leaves, flowers, or fruits to document your inventory.
        3. List the types of trees by scientific name and give common names. Note the number and size (diameter at 4 feet above ground) of trees observed and determine the largest of each species in your study area.
        4. Create a guide (booklet, pamphlet, ppt, etc.) that could be used by classmates to help in identifying the trees on the NC FFA Forestry ID list.
     2. Transect Study (2 hours)
        1. Visit two sites, at least one of which is different from the one you visited for Field Botany requirement 1.
        2. Mark off nested plots and inventory two different kinds of plant communities.
        3. At each site, record observations about the soil and other influencing factors AND do the following. Then make a graph or chart to show the results of your studies.
           1. Identify each tree within 10 feet of the transect line.
           2. Measure the diameter of each tree at 4 feet above the ground, and map and list each tree.
     3. Nested Plot (3 hours)
        1. Visit two sites, at least one of which is different from the one you visited for Field Botany requirement 1.
        2. Mark off nested plots and inventory two different kinds of plant communities.
        3. At each site, record observations about the soil and other influencing factors AND do the following. Then make a graph or chart to show the results of your studies.
           1. Identify, measure, and map each tree in a 100-by-100-foot plot. (Measure the diameter of each tree at 4 feet above the ground.)
           2. Identify and map all trees and shrubs in a 10-by-10-foot plot within each of the larger areas.
           3. Identify and map all plants (wildflowers, ferns, grasses, mosses, etc.) of a 4-by-4-foot plot within the 10-by-10-foot plot.
     4. Herbarium Visit (1.5 hours)
        1. Write ahead and arrange to visit an herbarium at a university, park, or botanical garden; OR, visit an herbarium website.
        2. Tell how the specimens are arranged and how they are used by researchers. If possible, observe voucher specimens of a plant that is rare in  
           your state.
        3. Tell how a voucher specimen is mounted and prepared for permanent storage. Tell how specimens should be handled so that they will not  
           be damaged.
        4. Tell about the tools and references used by botanists in a herbarium.
     5. Plant Conservation Organization Visit (1.5 hours)
        1. Write ahead and arrange to visit a private conservation organization or government agency that is concerned with protecting rare plants and natural areas.
        2. Tell about the activities of the organization in studying and protecting rare plants and natural areas.
        3. If possible, visit a nature preserve managed by the organization. Tell about land management activities such as controlled burning, or measures to eradicate invasive (nonnative) plants or other threats to the plants that are native to the area.