

Botany & Biodiversity

PLANTLAB PROGRAM OVERVIEW

NGSS Alignment

DCI strands supported:

LS4.D - Biodiversity and Humans
ESS3.A - Natural Resources
ETS1 - Engineering Design (all)

CC-ELA Standards

At appropriate levels:

ELP 5 - Conduct research and evaluate and communicate findings to answer questions or solve problems.

ELP 7 - Adapt language choices to purpose, task, and audience when speaking and writing.

Pre- and Post-visit resources include suggestions for to integrating **Science and Engineering practices** and **Crosscutting Concepts** into activities that align with this experience.



About the Program

With scientists on six continents in 35 countries around the globe, the Missouri Botanical Garden is a world leader in the area of plant systematics, the area of natural science that is concerned with identifying and organizing information about living things in a meaningful, easily referenced way. This fundamental (but often overlooked) field demonstrates the importance of communication arts in scientific study. During this program, students will become plant researchers as they:

- Learn about the role collecting plays in field work, and discover the Missouri Botanical Garden's taxonomy research efforts around the world.
- Practice preparing and mounting an herbarium specimen, with attention paid to documentation.
- Use similar herbarium specimens and dichotomous keys to compare and contrast methods of identification, noting how language is used to describe plant structures.

This program was designed to align with the PlantLab Student Scientists initiative. For more information, call 314-577-5185.

What is an Herbarium?

In addition to seed banking and living collections, herbariums are one of the ways in which Botanical gardens keep specimens for comparison and identification. Unlike the other collections, herbariums are composed of dried, preserved, and usually pressed specimens catalogued in an organized storage system. One could say herbariums are effectively libraries of preserved plant specimens.

Herbariums which are particularly long established or which collect from newly explored areas often contain the original holotype (or later selected lectotype) specimens designated as the model example of their species. When new species are discovered it is often determined not through field identification, but rather by finding that collected field samples do not match any known samples on record in herbariums.



The PlantLab

Constructed in 2016, the MBG PlantLab is a unique space designed for in-depth investigations in plant science. Here, students can participate in dissections, get up close and personal with plant structures using digital microscopy, and experience firsthand what real botanists do. Located off the Brookings Exploration Center in the Edward Jones Hall, the PlantLab is convenient to the Climatron, Temperate House, and Doris I. Schnuck Children's Garden, and the William T. Kemper Center for Home Gardening.



Other Places to Explore...

Make the most of your visit by taking your students to explore the following areas after your program:

1. **Observe obscure classifications of plants** found in the Linnaean House. Groups such as tropical conifers, island endemics and carnivorous plants exemplify little known branches on the tree of life.
2. **The Climatron® Conservatory** - Collections need not always be preserved, dead material. Visit the Climatron and Temperate house and learn about our living collections. These conservatories house plants that otherwise could not survive Missouri's variable climate.
3. **The Museum Building** - Recently renovated and open to the public, the Museum Building served as the original herbarium for the Missouri Botanical Garden. Today, your students can enjoy botanically relevant exhibits on a variety of topics. Admission is free.

Logistics for Teachers

- ☼ Each program lasts **1 hour** and serves a maximum of **30 students**.
- ☼ Up to **three programs** may be booked on the same day, pending instructor availability.
- ☼ Program fees include admission for up to six adults per 30 students. (Additional adults will be charged normal admission rates.) Please try to bring at least **one adult for every five students**.
- ☼ Currently there is no lunch space on Garden grounds and picnicking is prohibited. Please schedule your visit and mealtimes accordingly.
- ☼ Program availability is limited! Book early!

For more information or to book this program, please visit <https://www.missouribotanicalgarden.org/learn-discover/students-teachers/school-programs-and-field-trips> or call the School Programs office at 314-577-5185.



MISSOURI BOTANICAL GARDEN

4344 Shaw Blvd. St. Louis, MO 63110 • (314) 577-5100 • www.mobot.org