



The Morton Arboretum STEM Education Program: Inspire, Engage, Catalyze

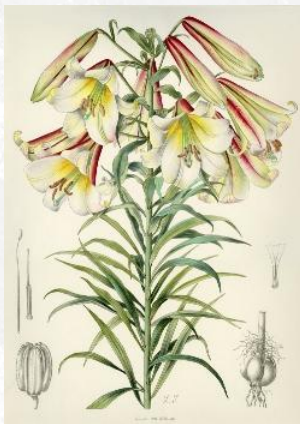
February 2017



The Morton Arboretum Mission and Overview



- Our mission is to collect and study trees, shrubs, and other plants from around the world.
- The Arboretum maintains living collections on display across naturally beautiful landscapes for people to study and enjoy, and to learn how to grow them in ways that respond to environmental changes and enhance the environment.



Numbers to Note:

- Over 220,000 plant specimens, representing 4,500 different kinds of plants
- Herbarium has a collection of 194,000 specimens for botanical research
- The Sterling Morton Library houses 27,000 volumes and 12,000 botanical artworks, ACORN

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The Challenge

The community and wild forests that people depend on for environmental health and for their physical and emotional well-being are under increasing threat from changing environmental conditions, habitat fragmentation, invasive pests, and environmental degradation.

The Arboretum counts on the community to be informed and catalyzed to take action on behalf of trees and the environment.

As the community's population grows older, new generations with expectations for how they access information move front and center. Along with generational shifts, regional demographics reflect increased diversity.

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How will we increase learner reach and impact the health of the community forest?

- Provide expert knowledge and authentic experiences through multiple program touchpoints across life stages and levels of engagement onsite and afield
- Digital integration that enhances the learning experiences and increases reach through new channels
- Partnership development with organizations that share our goals
- Rigorous staff training that harnesses and consistently disseminates Arboretum tree expertise

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The Solution:

- Positively impact learners attitudes about and ability to connect to trees and nature and assume stewardship
- Shift knowledge delivery channels in response to what younger generations value about trees and nature, and what motivates them to learn and to think differently about caring for trees.
- Engage learners in authentic science activities and inquiry to build a pipeline to address the critical need for plant and tree scientists.



The Morton Arboretum STEM program

The intended outcomes of the Arboretum's education program:



- Connecting more people to plants: sowing seeds for affinity toward and care of trees and the environment.
- Empowerment and the development of learners' leadership skills and science content applied through careers, volunteer, and civic activities relative to tree conservation;
- Increased awareness of the cultural relevance of tree science, and science–society interactions

School Field Trips: Youth Science Education

Over 31,500 students participated in our field trip programs in 2016.

- Both guided and self-guided half, full day lab and field trip options
- Pre-K to 12th grade Field trips are NGSS aligned
- Pre- and post- visit resources available at mortonarb.org



- **Tree Lab (Grades 4-8):** Students will uncover a tree's anatomy and unique adaptations to changing environments. Students will identify the environmental stresses these powerful producers overcome to survive. This lab utilizes iPad microscopes.

- **Aquatic Ecosystem (Grades 6-8):** In this full day field and lab program, students collect and interpret data to determine ecosystem health. Students examine macro-invertebrates (water bugs), and aquatic vegetation up-close using our iPad microscopes. Data in the lab is collected using Google Drive and shared with the school after the trip, for further analysis.

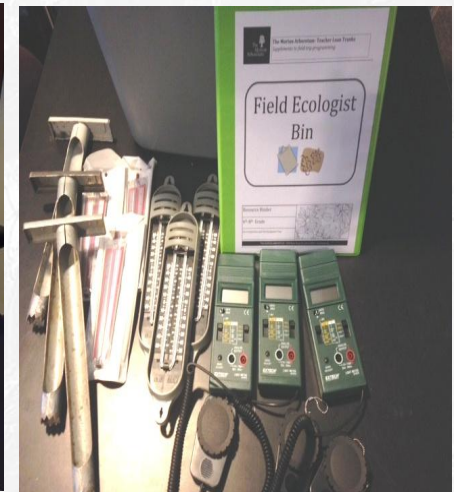


Youth Science Education Outreach Grant Program



- Provides field trip and classroom outreach programming at no cost to participating classrooms
- Can assist with transportation costs
- Application is required, tiered approval based on criteria including the school's low-income rate.

Loan Materials for Teachers



Aligned with NGSS and Arboretum field trips
Bins can be reserved ahead of time. Make a reservation online at:
mortonarb.org/learn-experience/educators/classroom-items-loan.

Tree-rific Tree Bin
(Grades PreK-2)
Animal Discovery
Bin(Grades 2-4)

Itty-Bitty Science
Bin(Grades 3-5)

Field Ecology
Bin(Grades 6-8)
Tree Census
Bin(Grades 6-12)

Additional Classroom Resources Include:

- Illinois Department of Natural Resource Loan Trunks
- Tree Tag Kits
- Arbor Day Lesson Plans and Activities



The Morton Arboretum

This tree will give us \$ _____ worth of benefits this year!

Tree Species _____ DBH _____ (measure at breast height - 4.5 feet)

Stormwater runoff reduction	_____ gal
Carbon reduction	_____ lbs
Electrical energy savings	_____ kwh
Property value increase	\$ _____

Help your trees live a long life.
Larger trees provide more benefits.

National Tree Benefits Calculator
www.treebenefits.com/calculator

DAWEY® YOUR LOCAL COMMUNITY

Celebrate trees. Learn more:
MortonArb.org/HugATree

QR code: Scan here to learn more about trees.

Teacher Professional Development

- **Adult Education classes** in tree identification, field ecology and botany. CPDH credits available.
- **Teacher Institute Day** in partnership with the DuPage Regional Office of Education
- **ENTICE workshops** in partnership with the Illinois Department of Natural Resources
- **Project Learning Tree Workshops**



Be a Summer Science Camp Instructor!

We are looking for enthusiastic educators to lead our summer science camps!

- Bachelor degree required
- 2 years experience with children preferred.
- Comfortable working in a outdoor setting.
- Available from June-mid-August
- Apply online at:

<http://www.mortonarb.org/visit-explore/about-arboretum/working-arboretum/open-positions>

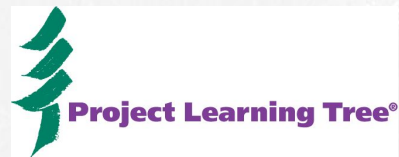


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Go to

mortonarb.org

to learn more!





THE
CHAMPION
of **TREES**

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To collect and study trees, shrubs, and other plants from around the world, to display them across naturally beautiful landscapes for people to study and enjoy, and to learn how to grow them in ways that enhance our environment.

Our goal is to encourage the planting and conservation of trees and other plants for a greener, healthier, and more beautiful world.

