

Dear Principal,

As a new school year approaches, it's time again to think about engaging student experiences that will nurture a love of learning and discovery while addressing curricular standards. I am pleased to share with you the Daniel Stowe Botanical Gardens' 2008-09 school program options for students and teachers, featuring several new programs for students as well as teachers:

- The Garden is proud to debut the **Green Teacher Network**—a new professional development opportunity for teachers. The Green Teacher Network provides fun, hands-on experiences that will build teachers' science content repertoire and boost confidence in teaching science successfully!
- Expanding on our popular **K-5 Guided Programs**, we have added **guided programs for secondary students**. All guided programs incorporate hands-on, guided discovery experiences designed to meet curricular standards at each grade level.
- The Garden is dedicated to providing engaging, student-centered experiences whether you are planning a Guided Program or exploring with your students on a Self-Guided visit.
 - Continuing this year, the **Willow Maze** offers an interactive exploration through the parts of a plant and has proven to be a very popular site for young students.
 - The **Orchid Conservatory** provides a wonderful immersion opportunity in the unique setting of a tropical ecosystem for students of all ages.

Plants, gardens, and the outdoor environment of the Daniel Stowe Botanical Garden provide a living laboratory that excites, inspires and engages students. As you will see from the program descriptions that follow, our focus is hands-on as well as minds-on through active engagement with plants, gardens, and the environment. I hope to see many students from Gaston County schools visiting the Garden this year. Please contact me if I can be of assistance in your planning, or contact our Registration Coordinator at 704-829-1252 to register your class. (Please register early—our programs are popular and peak dates book quickly.)

Thanks so much—I look forward to working with you!

Sincerely,



Cynthia D. Klemmer, Ph.D.
Director of Education

P.S., We will be conducting two sessions at the upcoming Teaching and Learning Conference and would love to meet you—please stop by to say hello!

Secondary Ed Guided Programs, 2008-09

The Garden is proud to offer guided field experiences for secondary students this year. Hands-on engagement is important for older students, too. The programs described below are designed to 'hook' students with fun activities that also support required curricular elements. Programs are 1 ½ hours in length—divided into two 45 minute segments to combine field experiences with hands-on activities and discussion. Bring your curriculum to life by immersing your students in a plant-filled experience!

Cost: \$125 per class
Teachers/chaperones free up to a ratio of 1 teacher for every 5 students.
Beyond a 1:5 ratio, a fee of \$6.00 per teacher/chaperone will be charged at admission/entry.
Minimum group size: 15 children; at least 1 adult chaperone required for every 10 students.

Botany Basics

The Garden provides a great opportunity for hands-on botany. From the macro to the micro, students will experience the thrill of discovery and the exploration of diversity. Students will compare the flowers of monocots and dicots, dissect flowers, examine flowers under magnification to find the fruit (ovaries) and seeds (ovules), and record notes and sketch their findings in Garden journals. A Garden walk will extend the botanical experience as students look for specific examples of monocots, dicots, and floral diversity to illustrate key aspects of the plant community.

Key Concepts: botany, dissection, floral morphology, pollination, germination, sexual and asexual propagation

Ecosystems and Adaptations

Plants have adapted to survive in a wide range of conditions and factors, both biotic and abiotic. Using the Garden's Orchid Conservatory and abundant natural areas, students will discover what some of these factors are, the difference between a population and a community of plants, and how plants have adapted to survive in four different ecosystems: tropical, desert, woodland, and meadow. A fun scavenger hunt format will allow them to explore on their own to search out key adaptations and hypothesize about some additional ones based on their own observations. Group discussion will help connect these to survival strategies that respond to environmental conditions.

Key Concepts: ecosystems, tropics, deserts, woodlands, meadow, plant adaptations, biotic vs. abiotic, populations vs. communities

Kinesthetic Keys

Students will explore the basic concepts of plant classification through an engaging, interactive experience called Kinesthetic Keys that allows them to literally walk through a plant classification chart to key out a leaf. Physically moving through the chart helps bring to life the binomial system of classification which is used for all living organisms, and plants offer a perfect opportunity for practice. Students will further investigate how living organisms are named using the binomial system of nomenclature by playing detective to decode the meanings behind some common plant names, and then creating their own name to describe a new plant.

Key Concepts: Taxonomy, nomenclature, vocabulary building

Butterfly and Orchid Specialty Programs:

***Something's A-Flutter* in the Garden: Butterfly Programs for School Groups**

Available September 29-November 7

Adaptable for all grades—please specify when registering

Butterflies are some of nature's most beautiful insects, and the Gardens' *Something's A-Flutter* exhibit provides a perfect place to see them. Students will review the characteristics of an insect and the fascinating process of metamorphosis that they go through to complete their life cycles. Students will experience butterflies all around them in the Orchid Conservatory, learn to identify several native species, and then learn more during a special Butterfly Walk through the Garden.

Key Concepts: Insect characteristics, metamorphosis, life cycles, butterflies, butterfly behaviors, native Carolina butterflies

Orchid Conservatory Programs

Available November 10, 2008 – June 2009

Adaptable for all grades—please specify when registering

The Garden's new Orchid Conservatory presents an ideal environment for the study of tropical ecosystems and the plants that are specially adapted to live in them. Celebrate this wonderful new resource for learning with a special visit with your students. The two programs described below are designed for flexible use across a range of grade levels—just let us know during registration.

Plants and People (*grades K-2*)

Vanilla and chocolate are just two tropical plants that we commonly use. Explore the Garden and its new Orchid Conservatory to discover these and many other tropical plants that serve important uses as food, medicine or economic value. Each student will create their own tropical plant terrarium.

Tropical Ecosystems and Plant Adaptations (*grades 3-5*)

Tropical ecosystems are fascinating! Using the new Orchid Conservatory as a living laboratory, students will learn characteristics of a tropical environment and then conduct their own exploration to discover some of the unique ways that tropical plants have adapted to survive and compete successfully. In addition, each student will create their own mini-terrarium.

New! Professional Development Opportunities for Teachers

Green Teacher Network

The Garden is proud to debut the **Green Teacher Network**—a new professional development opportunity for teachers. The Green Teacher Network will expand your science content knowledge and increase your comfort level with science teaching through enjoyable programs that break down barriers and foster hands-on practice of science concepts using plants, gardens, and the environment as a context for learning. Each evening focuses on a different topical 'nugget'. Register for one session, more, or all—whatever suits your needs and schedule.

While the topics vary with each session, all are designed to include:

- **Demonstrations and guided experiences** using fun, plant-based science activities that bring curricular concepts to life.
- **Hands-on time** for practice, review, and mastery of the content and activities covered in a fun setting where mistakes are okay, no question is 'stupid,' laughter is encouraged, and everyone's in it together!
- **Dinner discussions.** Don't worry about dinner—let us provide it for you! Dinner Discussions allow teachers to network with other teacher, discuss activities covered earlier in the session, and form their own community of learners which helps strengthen confidence for teaching science.
- **Classroom Resources.** For each session, teachers will leave armed with resources such as lesson plans, catalogs, book lists and some basic tools to help implement engaging activities back in their classrooms.

Insects—The Strange and The Beautiful

Thursday, October 16, 4:30-7:30 pm

\$18 per teacher

Insects enliven the curriculum for students, and are a great tool for classroom use! Come explore the wonderful world of insects while the *Something's A-Flutter* exhibit is running, providing over a thousand butterflies to discover in the Orchid Conservatory. Review metamorphosis using insect models as well as living examples, refresh your microscope skills by examining insects up close and personal, learn about predator/prey relationships, during a guided walk through the Conservatory, and discuss methods for

incorporating insects throughout your curriculum using interdisciplinary strategies. Teachers will leave with a meal worm habitat for use in their classrooms.

A Fresh Take on Flowers

Thursday, November 13, 4:30-7:30 pm

\$18 per teacher

Delve into the botany of flowers, and get a fresh new perspective on the important role flowers play as the reproductive units of plants! Using a combination of lecture and hands-on dissection, we will review the characteristics of monocots and dicots, explore plant pollination and plant life cycles, and examine floral ovaries and ovules (fruits and seeds) under a microscope. A variety of pollinators and the role they play in pollination will be included as part of the evening, as well, and participants will take an exploratory walk through the Garden to examine plant parts and plant life cycles ‘in action.’

School Gardening Day—Planning the Garden

Saturday, January 31, 10:00 am – 3:00 pm

\$30 per teacher

School Gardens bring learning to life with an endless array of ‘real’ experiences that engage students and hook them into learning. Research has shown that school gardens increase students’ science achievement, and serve as invaluable curricular extenders. Learn how they work during this special Saturday workshop highlighting school gardens—how they benefit students, how to plan and manage them effectively, and how to utilize them as curricular tools. Teachers will also learn basic plant techniques to help ensure success in their school gardens, and leave with plenty of seeds and other garden resources to use in their classrooms.

Tropical Temptations

Thursday, February 26, 4:30-7:30 pm

\$18 per teacher

Winter is a great time to delve into the lush environment of the Orchid Conservatory! Teachers will explore tropical plants—including many common houseplants that are easy to grow in the classroom. Tropical plant adaptations will be included as a primary topic of discussion and exploration as teachers search out adaptations in the Conservatory and then create their own. Teachers will also learn about plant propagation, and leave armed with a variety of tropical cuttings to grow in their classrooms.

Trees are Terrific

Thursday, March 19, 4:30-7:30 pm

\$18 per teacher

Get a head start on your Arbor Day plans—attend this tree-focused workshop and get some great ideas for celebrating Arbor Day with your students in April using some fun and curriculum-based activities. Teachers will learn and practice different methods for estimating tree height for some fun math applications, and become plant explorers as they discover how to use trees to explore history. Every school has some trees nearby, and they can be used as terrific curricular extenders—come learn how!

School Gardening Day—Planting the Garden

Saturday, April 25, 10:00 am – 3:00 pm

\$30 per teacher

School gardening is a continuing focus in this second day of exploration. The Garden’s annual plant sale will provide a lively backdrop and plant primer for activities, demonstrations, and discussions of school gardening. The focus of this day will be on garden planting and maintenance—what to plant when, techniques for classroom management in the garden, planting activities that incorporate math in the garden, and which plants to use for a successful and low-maintenance garden. Flowers, veggies, herbs... different types of gardens and their strengths for different curricular applications will be discussed.