

## PARENTS AS CLUB PARTNERS

GEN encourages children to extend their learning at home by sharing what they have learned with their families. This project component supports research that children's academic success is enhanced when their parents are actively involved. Home based activities include monthly take-home packets and Club calendars that include suggestions for family activities.

### Science Nights

GEN also encourages active participation by parents and children by sponsoring science nights. With direction from Dr. Deborah Riddleburger, PRISM liaison and science curricula director, Jackson County, 20 hands-on science activities have been developed that address the topics in the Club modules. Science nights provide a great opportunity for Club leaders to discuss their service learning projects with parents.

### For more information how you can get involved with Garden Earth Naturalist contact:

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- ✿ Dr. Carol Hoffman, Curator of Education and Outreach, Georgia Museum of Natural History, UGA, [hoffman@uga.edu](mailto:hoffman@uga.edu)
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ADDITIONAL FUNDING:  
Jackson EMC Operation Roundup  
Walton Electric Trust, Inc.

## THE TRAINING COMPONENT

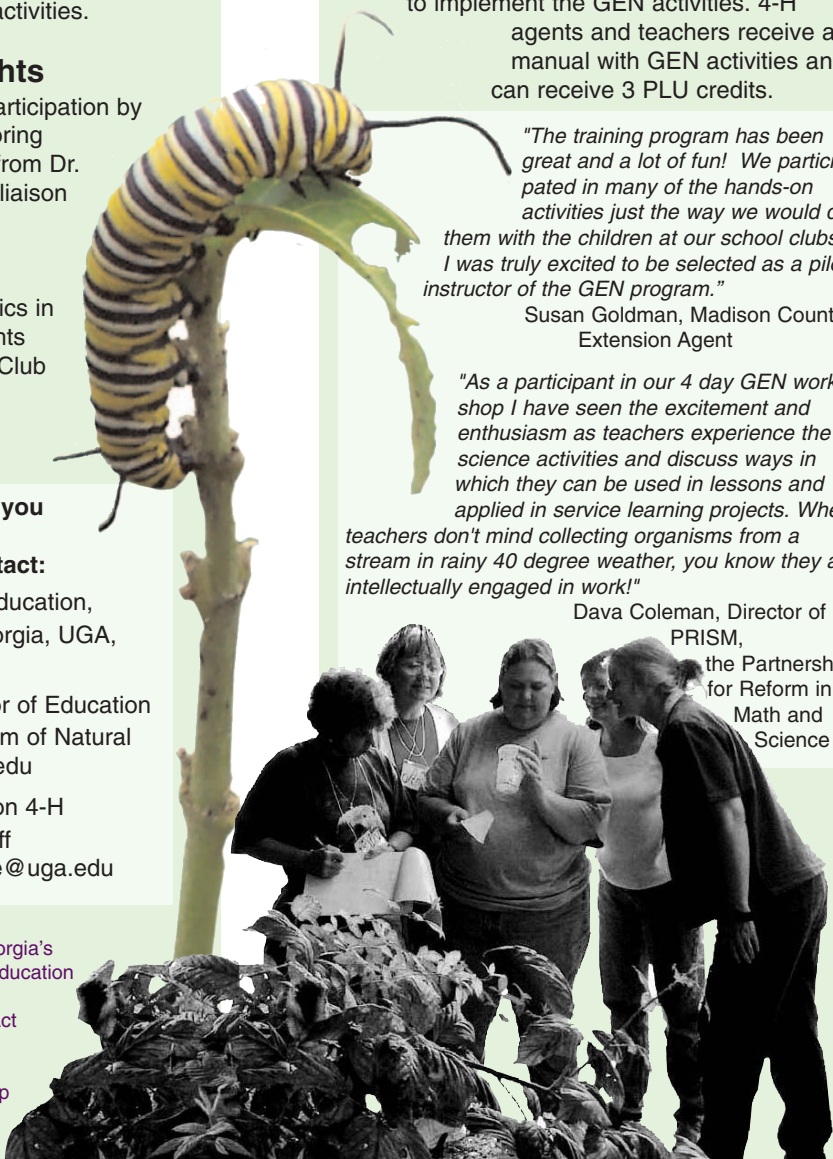
A three day workshop with sustained contact will train and support teachers, 4-H agents and paraprofessionals to implement GEN science clubs at their sites. The workshops are offered at the State Botanical Garden of Georgia, Athens, with follow-up at the participating schools. Each Club receives a kit with supplies to implement the GEN activities. 4-H agents and teachers receive a manual with GEN activities and can receive 3 PLU credits.

*"The training program has been great and a lot of fun! We participated in many of the hands-on activities just the way we would do them with the children at our school clubs. I was truly excited to be selected as a pilot instructor of the GEN program."*

Susan Goldman, Madison County Extension Agent

*"As a participant in our 4 day GEN workshop I have seen the excitement and enthusiasm as teachers experience the science activities and discuss ways in which they can be used in lessons and applied in service learning projects. When teachers don't mind collecting organisms from a stream in rainy 40 degree weather, you know they are intellectually engaged in work!"*

Dava Coleman, Director of PRISM, the Partnership for Reform in Math and Science



## GEN IN 4-H PROGRAMS ACROSS OUR STATE

Georgia 4-H delivers programs in 5th and 6th grade classes throughout our state as part of ongoing partnerships with local Boards of Education and our State Board of Education. GEN is a new environmental program strand for Georgia 4-H. 4-H agents can elect to implement GEN at their monthly school programs and club meetings.

4-H GEN modules include both an in-school program component and an after school program component. Through these two delivery modes, learning activities are provided to encourage youth to consider pursuing an agricultural or environmental issue to showcase through the 4-H project achievement experience.



*"Garden Earth Naturalist materials empower 4-H to serve as the bridge between the formal and non-formal learning environment. Through these materials Georgia 4-H has an opportunity to bring research based information, with a relevant ecological message, to Georgia's youth. The potential for GEN with 4-H is tremendous!"*

Mandy Marable, Georgia 4-H Curricula Director

*"The GEN curriculum for 5th grade has been a direct complement to the school curricula. Mrs. Jones, 5th Grade teacher at Washington Wilkes Elementary School, was delighted that our Fall 4-H club meetings were a timely review of the materials she had addressed in her classroom. This is an excellent example of 4-H complementing the school curriculum."*

Marci Simpson, Wilkes County 4-H Agent

## GARDEN EARTH NATURALIST AFTER-SCHOOL CLUBS

Encouraging Scientific Study through Partnerships



*Garden Earth Naturalist (GEN) helps children understand earth's ecosystems, value the services provided by these ecosystems, and take positive actions through service learning projects to protect these ecosystems.*

A Partnership of:  
The State Botanical Garden of Georgia  
Georgia Museum of Natural History  
Georgia 4-H  
Georgia Partnership in Science and Math (PRISM)

## GARDEN EARTH NATURALIST CONCEPTUAL FRAMEWORK

Our home, our Garden Earth, is a treasure. Its ecosystems provide valuable ecological services such as pollination, air and water purification, climate control, soil production, recycling, pest and disease control, food production, and a genetic library.

These "free services" can be impacted by human activity and impaired by poor societal choices.

Garden Earth Naturalist (GEN) helps children, grades 3-6, understand the importance of these free services by studying, exploring and enhancing natural habitats on their school sites and in their surrounding communities.

Essential questions for investigation include:

- What life support services are provided by my school site?
- Why should I care about my school site ecosystem?
- What can I do to improve the health of my school site ecosystem?



The GEN conceptual framework helps children understand and value the life support services and complex interrelationships in an ecosystem.

## THE 8 GEN CURRICULA MODULES

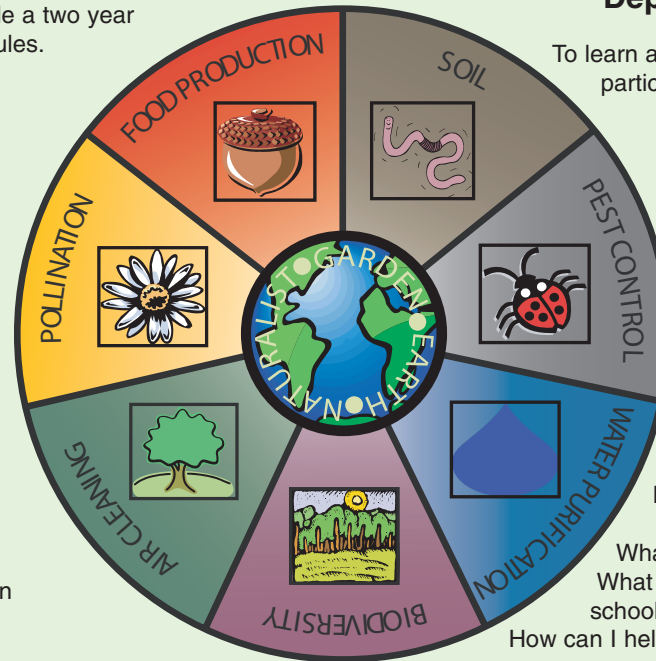
GEN Clubs support teachers in extending science instruction through after-school clubs. Project materials include a two year sequence of Club Modules. Topics follow:

### Year 1

- Pollination
- Food Production
- Air Cleaning & Climate Control
- Soil Production & Recycling

### Year 2

- What is an Ecosystem?
- Pest & Disease Control
- Biodiversity
  - Water Purification



Curricula materials for each after-school module are formatted to the *Understanding by Design* curricula model and address the Georgia Performance Standards.

*"The club is great equalizer; it allows children of various ages and abilities to learn in a relaxed, non-competitive atmosphere—to enjoy science for its own sake rather than simply tolerating it for the sake of a grade. Kids who might have initially used their club membership as a ticket out of the after school program are now fully engaged in learning."*  
Brandis Hartzell, Teacher  
Whitehead Road Elementary School, Clarke County

## POLLINATION: A SAMPLE GEN MODULE

### Welcome to the Pollination Department!

To learn about pollination students participate in these activities:

- Pollination Relay Race
- Flower Inquiry
- Pollinator Insect Count
- Pollinator Preference Experiment
- Suga's Helpful Pollinators!
- Puppet Show and Role Playing Game

### Essential Questions:

- What is pollination?
- What pollinators visit my school site?
- How can I help pollinators at my site?

Each after-school module is research based, tailored to varying delivery methods, engaging and fun for the learner, as well as relevant to today's youth.

### Module Resources:

- Curricula
- Kit supplies
- Student take-home packets
- Service learning opportunities

*How can I improve my school site ecosystem?*



## SERVICE LEARNING PROJECTS

### Service Learning Projects

Club members help to improve their school site (or local community) by participating in service learning projects.

Examples of service learning projects include planting a variety of native plants to increase school-site biodiversity, monitoring local bird populations, planting ground covers to protect the soil or implementing a school wide campaign on the importance of clean water.

ISSUE	⇒	SERVICE LEARNING
Lack of pollinators		Plant flowers to attract pollinators

Ideas from service learning activities arise from school site investigations. After monitoring pollinator populations by conducting a pollinator count, students may decide to plant flowers to attract more pollinators to their site and then monitor the pollinator population.

*"At Fowler Drive we have had as many as 33 students on the club roster at a time. I still have a waiting list and students ask me every day if they can get in 'science club!'"*

Halley Page, Fowler Drive Elementary School  
Clarke County

