

SPROUTING LEADERSHIP: HOW GARDENING CULTIVATED 4-H AT COOSA

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COOPERATIVE EXTENSION
College of Agriculture, Forestry and Life Sciences



PROGRAM GOAL

In response to a request for support in creating a school garden, Clemson Extension leveraged online programming, local volunteers, and 4-H Youth Development resources to empower Coosa Elementary School. The outcome was more than a garden—it became a thriving educational space that fosters hands-on learning, community engagement, and environmental stewardship.

INITIAL LEARNING OBJECTIVES

Adult Education

Learning objectives for School Gardening for SC Educators:

- Develop a school garden plan through techniques like site analysis and seasonal planting.
- Identify necessary conditions to grow healthy, safe, and nutritious vegetables year-round.
- Discuss resources and techniques to integrate gardening in a school curriculum or youth program.

Youth Education

Learning objectives for students participating in the Garden STEM program at Coosa Elementary:

- Define where soil comes from.
- Name nutrients humans get from plants.
- Explain how plants reproduce.
- Explain how humans use plant energy every day.
- Describe the roles of beneficial insects.
- Demonstrate how energy flows through an environment.
- Explain how energy transfers from the sun to plants to humans.

PROGRAM EVALUATION

- A 20 question Pre & Post Test Evaluation was used to gauge participants knowledge. **90%** of 4th grade students were able to pass course exam after completing Garden STEM program.
- A post survey for the pilot of Garden STEM was created.

Table 1. Evaluation responses (n=76) by participants in the 2021-2022 class using a 5-point Likert scale (5 = strongly disagree)

Declarative Statement Used:	Percent Sum Agree/Strongly Agree	Mean
I enjoy learning about how plants grow.	82%	4.19
I feel confident in my knowledge of gardening.	86%	4.24
I learned from my Master Gardener mentors.	98%	4.62

ACTUAL PROGRAM ACTIVITIES & OUTCOMES

- **17** raised garden beds built in 2021
- Annually between 2021-2025, **550** Students engaged in 4-H School Enrichment activities utilizing the school garden and outdoor classroom
- Between 2021-2025, **275** 4th-grade students participated in 4-H School Enrichment Master Gardener-led “Garden STEM” activities
- **10** parent and community volunteers maintain the school garden and outdoor classroom
- All students participate in harvesting and donating sweet potatoes, cabbages, and other crops from the school garden to Help of Beaufort Food Bank
- **39** school staff and educators completed School Gardening for SC Educators in 2021, earning a total of **780** renewal credit hours.

Table 2. 4-H Youth Development Programming stemming from the Coosa Elementary Garden

4-H Youth Development Programming	Number of students annually participating since 2022
Chicken Embryology	150
Environmental Science- Wildlife Biology	150
Ecology Education	150
Stormwater Education	150
Motion & Forces Engineering Design Challenges	75



Kindergarten and 1st grade students harvesting carrots from their school garden. Students are on a rotation schedule so that every student experiences the garden throughout the year.



Master Gardener volunteer Brad Smith leads monthly lessons and teaches a new song to help students learn vocabulary.



Master Gardener Volunteer & Clemson Horticulture Agent helping teach 4th graders in Garden STEM activities.



Principal Pender on site before the 17 raised garden beds were built in 2021.



Students actively engaged in preparing the raised beds with newly delivered soil.



A freshly hatched chick from students that participated in 4-H Embryology.



Students participating in an egg drop challenge as part of an engineering design process lesson.



Transplants and seeds that are part of the SC School & Community Garden program and are delivered quarterly.



Cabbage harvest headed to the local food pantry courtesy of the school garden.



Students were able to integrate the garden into STEM lab by creating 3-D printed signs to label the plants in the garden.