



Case Study: Integration of Farm to School in Career and Technical Education

A Growing Minds Partnership in Haywood County, North Carolina

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ASAP Local Food Research Center
October 2025

Introduction

This case study details a project implemented by the Growing Minds Farm to School (F2S) program of Appalachian Sustainable Agriculture Project (ASAP), a nonprofit based in Asheville, North Carolina (NC), serving the Southern Appalachian region. It was made possible by a two-year Patrick Leahy Farm to School grant from the United States Department of Agriculture Food and Nutrition Service. Efforts focused on integrating F2S into existing curricula used in Career and Technical Education (CTE) programs and making connections across the classroom, cafeteria, and community to deepen educators' and students' connection to local food and farms.

According to the NC Department of Public Instruction (DPI), “the mission of CTE is to empower all students to be successful citizens, workers, and leaders in a global economy. CTE gives purpose to learning by emphasizing real-world skills and practical knowledge.” At its core, CTE enhances the education students receive from courses in the standard curriculum. One of the educators who participated in this project said, “A goal for all of us, and I think this is true for most CTE teachers in general, we really want core teachers to see how much what we do overlaps with them as well, because our job is to teach the practical side of what the math class is doing, what the science class is doing. We are the application of what they are teaching in class every single day.” Programs in CTE are also designed to contribute to students' ability to work independently and as part of a team, think creatively, solve problems, and utilize technology.

The project took place in Haywood County, a primarily rural county in Western NC that has a rich agricultural heritage, a thriving local food system, and many organizations and individuals leading incredible, albeit disconnected, F2S efforts. Haywood County Schools (HCS) serves approximately 6,500 students across 15 schools, and offers its middle and high school students the opportunity to take courses in eight CTE program areas: Agriculture, Business, Marketing, Family and Consumer Sciences, Health Sciences, Technology, Trade and Industrial Education, and Career Development. The project targeted the Agriculture and Family and Consumer Sciences programs as they provide the most opportunities for F2S integration.

Activities

Broad strategies included establishing partnerships and making connections, encouraging participative decision-making, distributing funding and resources for implementation, and providing training and technical support. The project took place across two school years, from July 2023 to June 2025. The first year focused on assembling a planning team, establishing a framework for the integration of F2S activities into existing CTE curricula, and piloting those activities in courses. The second year focused on updating activities based on pilot feedback, recruiting additional educators, and expanding implementation.

Year 1

At the start of the project, Growing Minds assembled a planning team that consisted of the HCS CTE Director, Horticulture educator, Animal Science educator, School Nutrition Director, and School Nutrition Supervisor. Partners from the community also joined, including the Haywood County Extension Director and a prominent local farmer. Growing Minds staff facilitated quarterly in-person meetings and provided stipends to the educators and farmer for attending, while the remaining members' committed their time as in-kind.

The first planning team meeting was held in October 2023 and focused on building rapport between members and identifying needs, assets, and opportunities. We then developed a vision, goals, objectives, and outcomes for the project, which are listed below:

- *Vision:* CTE students in Haywood County have successful careers in local food and agriculture.
- *Goals:* The project supports career awareness, career exploration, career development, technical skill development, and career readiness around local food and agriculture.
- *Objectives:* CTE educators will integrate farm to school experiences, such as taste tests, cooking, gardening, farm field trips, farmer visits, and community engagement events, into their courses.
- *Outcomes:* Students will be more knowledgeable about and interested in the local food and farms in their region. Students will be able to make connections with local food and farms across the classroom, cafeteria, and community.

Growing Minds staff reviewed NC DPI's CTE Course Management System to become familiar with state standards for the Agriculture and Family and Consumer Sciences programs. This allowed us to brainstorm F2S activities that would be most appropriate for integration into courses within those programs. During the second planning team meeting in January 2024, we discussed the feasibility of these activities and planned to pilot them that spring semester.

The Horticulture and Animal Science educators from the planning team, who both taught at one of the district's high schools, participated in the pilot. One notable activity was the Spring Agriculture Day, which was planned by their classes and took place at their school's teaching farm. The CTE students hosted kindergarten students from nearby elementary schools, who visited a variety of interactive stations highlighting local food and agriculture. Growing Minds also trained these CTE students to conduct local food taste tests, which they did with younger students in nearby elementary school cafeterias. In addition, the educators were provided stipends to implement gardening and agriculture activities that they wove into their curricula.

The planning team met again in June 2024 to reflect on these activities and plan for expansion in the 2024-25 school year. A significant challenge was staff turnover; three members of the planning team (CTE Director, School Nutrition Supervisor, and Horticulture educator) either retired or left their positions by the end of the 2023-24 school year. This resulted in delays and pivots in Year 2

planning and implementation, as time needed to be spent building new relationships when these positions were filled.

Year 2

The first activity of the 2024-25 school year was planned for the Haywood County Fair at the end of September, where CTE students from the Agriculture program would engage fourth grade students in hands-on F2S experiences. The fair was cancelled as Hurricane Helene hit the Western NC region that day, causing widespread damage and loss. Many were without power, water, or cell service for days, and in some cases, weeks. HCS was closed for more than two weeks as the community focused on recovery.

Later that fall, Growing Minds invited all CTE educators in Agriculture and Family and Consumer Sciences programs to participate in a more formalized cohort called Farm to School Ambassadors. Three educators from one high school signed up: the Animal Science educator from the planning team, the newly hired Horticulture educator, and a Food Science educator. A Horticulture educator from another high school also joined. Growing Minds staff led onboarding calls with each Farm to School Ambassador to identify their specific needs, assets, and goals for incorporating F2S into their curricula. As research shows that engaging educators as decision-makers leads to more successful interventions, we allowed them to shape project implementation and offered a variety of resources and opportunities for support. In addition to the stipends Ambassadors received for attending our quarterly planning meetings, they received mini-grants to support their F2S activities, as well as participation stipends at the end of the project.

The Ambassadors met with the planning team in December 2024 and February 2025 to discuss their activities for the spring 2025 semester. Each Ambassador's activities are described below:

- The Animal Science educator, who participated in the pilot, sought support to grow the Spring Agriculture Day, from hosting kindergarten students at four schools to all schools in the district. It was relocated from the school's teaching farm to a larger event center in the county to accommodate the expansion. The CTE students and community partners once again engaged kindergarten students in various activities focused on local food and agriculture, including crafting, taste testing, animal husbandry, lasso practice, beekeeping workshops, and seed starting. Nearly 500 kindergarten students attended in 2025, a significant increase from 250 students in 2024.
- The Food Science educator and students hosted local food taste tests in nearby elementary school cafeterias. This activity was a partnership with the School Nutrition Director and other nutrition staff, as well as a local farm where the food was purchased for the taste tests. Growing Minds provided training to the Food Science students on how to lead taste tests and engage younger students in the cafeteria setting. This educator also purchased a composting system as a tool for food waste education, and to make "food waste usable

compost for our classroom garden with the Horticulture program and to make chicken feed the Animal Science teacher can use for the chickens they raise in class.”

- The Horticulture educator collaborated with the Food Science educator, who teaches at the same high school, on a raised garden bed project. The Horticulture students developed and presented design plans for the garden to the principal, then built and planted the beds, which will grow food for the Food Science classes to cook with. Students participated in every phase of the project, from design and planning to crop selection and cultivation, gaining hands-on experience throughout the process.
- The second Horticulture educator teaches at a different high school than the other Ambassadors, which has a test farm that already includes a greenhouse, raised garden beds, and land for crops and animals, as well as a barn that will serve as a classroom. Historically, the Horticulture program at this high school focused on conventional farming methods. The educator spent the spring semester planning and designing a no-till garden plot that will introduce students to sustainable farming methods. The plot is scheduled to be built out in the fall 2025 semester.
- All Ambassadors and their students, as well as students in the HCS Marketing CTE program, were invited to attend a business planning and marketing workshop presented by Growing Minds and a local farmer that covered the basics of starting a food- or agriculture-focused business.

The planning team and Ambassadors met for a final time in May 2025 to reflect on activities and the project as a whole. The four Ambassadors intend to continue integrating F2S into their curricula in the 2025-26 school year through the activities described above, and are also planning new or expanded activities. One is the Food Science students preparing a community dinner using produce grown in the raised garden beds by the Horticulture students. The Food Science educator plans to take students on a field trip to a local farm to help them gain a better understanding of what goes into food production, and the Animal Science educator wants students to visit a local food processing plant. Growing Minds will continue to provide support as program funding allows, and plans to engage additional CTE educators and community partners across Haywood County.

Impact

At the end of the 2024-25 school year, Growing Minds collected feedback from Ambassadors through a focus group, as well as from CTE students through surveys and interviews.

When asked about the impact of the F2S experiences in their classes, 86 percent of students reported positive knowledge gain. This included gaining knowledge about potential agricultural careers (47 percent), growing their own local fruits and vegetables (41 percent), finding and buying local fruits and vegetables (29 percent), and eating more local fruits and vegetables (28 percent). Ninety-two percent of students anticipate that they will or might use the knowledge and skills they

gained in their future careers. One Food Science student shared: “I think learning this information was very beneficial [to] my overall knowledge about what goes on outside of my local grocery store. It opens minds and understanding about what we eat and what the whole process looks like.”

Educators expressed that they found significant value in participating in the Farm to School Ambassadors cohort. A benefit named by nearly all members of the planning team was the opportunity for collaboration. The project not only increased collaboration between educators, it also facilitated relationships between educators, other HCS staff, and community partners (including Growing Minds) and helped them better connect with local farms and businesses. “Being able to pull connections in to say ‘agriculture is bigger than it looks’ is beneficial,” said one educator. “Agriculture is a huge part of our world and industry, and kids come into class thinking ‘Oh, it’s farming.’ It’s not just farming, it’s a lot of other things. A student who wants to be a chef may not realize that’s an agricultural job.” Another educator shared that participating in the program allowed them to think outside of the box when planning their curriculum: “I would never have considered anything like this were it not for Growing Minds and all the conversations we have had this school year about farm-to-table and helping our environment.”

Recommendations

Two primary challenges shaped the experience of this project: the impacts of Hurricane Helene, a natural disaster beyond our control, and ongoing staff turnover. While the latter is not unique to HCS, it does reflect a broader trend within the current education system. As a result, more time was devoted to building relationships and making connections than originally anticipated. However, there were also a number of successes that, along with the challenges, informed key takeaways and lessons learned that can help guide the design of similar initiatives.

Engage Educators as Decision-Makers

Growing Minds led this project with an asset-based approach to partnership, positioning the CTE educators as decision-makers in integrating F2S into their curricula. The educators were encouraged to guide implementation in ways most relevant to their curricula and course goals. One educator said that participating in the Ambassadors cohort “made me think about what can I add to my program—what new things can I implement, what else can I do to enhance my program?” The planning meetings offered opportunities for educators to brainstorm the intersection of F2S with their particular course of study. Another educator shared, “I went into this cohort planning on starting from scratch. The meetings made me realize I already do XYZ, made me appreciate what I was already doing that I hadn’t acknowledged before.”

Foster a Culture of Collaboration

The strong foundational culture of collaboration that already existed within the CTE programs at one of the participating high schools contributed to the success of the project there. The Horticulture educator said that his long-term goal is for Horticulture students to grow food for the

Food Science courses, ultimately reaching a point where “only the bare necessities will need to be purchased.” The Food Science students plan to use their new composting system to turn food waste from their lessons into either compost for the Horticulture students to use in their garden, or feed for chickens that the Animal Science students raise. The Animal Science students processed their chickens and gave them to the Food Science students, who then cooked chicken casseroles. As shared by one educator, “Our school has a strong sense of collaboration within CTE, it’s how it’s always been. And even into the regular ed. classes—I could go into any department with an idea and it would be well-received.” Another said, “We as teachers know how much our classes overlap but to show the kids that is really big.”

The planning meetings also encouraged opportunities for collaboration, especially between educators at different schools, and became a space where meaningful cross-curricular connections were discussed. One educator said that the meetings “increased connection with other educators in different areas of the county—generally we only have the opportunity to connect with other CTE teachers once a year at the annual CTE meeting.” Additionally, having other HCS staff and community partners participate in the planning team was supportive for educators: “There’s only so much teachers can do time-wise, so if someone is out there saying ‘We have this business connection or outside connection’, that helps.”

Compensate for Time and Resources

Compensation for time and F2S activities proved to be a key indicator of both educator recruitment and engagement. Participating educators were asked to attend meetings outside of their regular school hours as well as weave F2S into their courses in new ways. Therefore, Growing Minds provided them stipends for each planning meeting attended and a participation stipend at the completion of the project. They also received funding for their F2S activities, which allowed essential infrastructure like raised beds to be constructed. “One negative of CTE programs is they are expensive to run,” said one teacher, “so when extra funding is an option, CTE teachers tend to jump on the opportunity.” It is also worth considering that educator compensation incentivizes a commitment to the profession that could have an impact on retention and turnover.

Offer Students Hands-On Experiences

A natural integration point for F2S within the CTE standard course of study is through Work-Based Learning opportunities, which combine classroom instruction with hands-on activities to prepare students for a wide range of careers, and Supervised Agricultural Experiences (SAE), which allow students to explore agricultural fields that are tailored to their personal interests and career goals. While this project did not incorporate these, educators emphasized an interest in incorporating them into future programming.

A significant motivator for the Ambassadors to continue their efforts beyond this project is the positive impact they observed when students were able to participate in hands-on experiences and lead aspects of F2S activities. The Animal Science educator shared, “With our Kindergarten Day [Spring Agriculture Day], you see a whole new side to these kids. When they get to take on the role

of teacher and they get to talk to someone younger than them about something—I don't think they realize how passionate they are about it until they get there and they get started, and then they kind of find their little niche and they do really well with that." Another educator said, "Every time we plant a garden or raised bed of fruits and vegetables and we get a harvest, it's amazing to see how the kids really enjoy that. You get participation and you can tell you are pulling on their heartstrings and you can see the youthful enjoyment come out of them, even for high schoolers. It's a very tangible thing and a feeling of accomplishment when you have produced something that is beautiful, good, and sustainable."