

Educator Tipsheet: Conducting Agricultural Education in Montana Schools

There are many benefits to teaching students about the environmental and health benefits of eating local foods, and that students have an understanding and connection to where their food comes from and how it is produced. Students can be more connected to food and its production through in-school agricultural education activities, farm field trips and farmer visits, and school gardens. However, many schools don't have the time, funding, or staff to find producers, plan agricultural education activities, or maintain a school garden. The EPA Environmental Education project *Growing for Environmental Stewardship*, conducted by the National Center for Appropriate Technology (NCAT), helped eight school communities overcome these constraints through subgrants and technical assistance. This brief tipsheet, based on the evaluation received from the eight subgrantees, includes key tips for connecting with Montana producers and conducting agricultural education activities.



Lobby of Cherry Valley Elementary where eggs were incubated, hatched, and chicks were kept.

Photo: Molly Kirkham, NCAT

Involve Montana Producers

Montana farmers, ranchers, and food businesses are valuable resources for educating students on agricultural and food production practices. There are a few different options to consider when requesting time from producers: tours, workshops, tutorials, talks or presentations, and involvement in school projects or gardens. Producers also may be willing to donate tools, garden cloth, their products, seeds, and other materials to schools. Schools can also promote farms and ranches that offer internship programs or camps for youth.

A useful resource to find farms, ranches, and food businesses in a particular area is the [Abundant Montana Find Food and Farms Tool](#). This extensive and searchable database identifies a wide variety of ag-related producers, businesses, and organizations, and in many cases, provides contact information. When connecting with producers, keep in mind that certain times of year can be significantly busier than others. To navigate this, reach out in advance and find out what works best for their schedule and how they prefer to participate. As many of these agricultural education activities require time in a producer's already busy schedule, it is important to offer an honorarium or to purchase their product when possible.

Include Parents, Community Members, and Organizations

There are often people in the community, such as college students, retirees, and parents, who are interested in getting involved with school agricultural education activities. They can chaperone a farm field trip, volunteer in the school garden, or assist with a cooking class, among many other potential activities. Some may even be able to contribute to the education component and share their expertise on a subject. For example, many parents raise laying hens or livestock or are master gardeners, and a few might even be full-time producers themselves!



Philipsburg students visiting NCAT's Sift Farm
Photo: Molly Kirkham, NCAT

Organizations are also a great resource for outside contribution to agricultural education. They may have ideas for projects; donate laying hens, livestock, supplies, and equipment; connect you with farmers and ranchers; and host presentations, tutorials, and workshops. Some possible organizations to partner with include Montana State University (MSU) Extension, 4-H, Future Farmers of America (FFA), Montana Farmers Union, local colleges and university agriculture and nutrition programs, community and economic development centers, food banks, sustainability and compost organizations, and local agriculture nonprofits. As with producers, you can use the [Abundant Montana Find Food and Farms Tool](#) to find organizations in your area.

Take Advantage of Existing Resources

The good news is that you don't have to create your own lesson plans unless you want to! There are extensive agricultural education resources for educators.

- The [Montana Harvest of the Month](#) (HOM) program showcases a Montana grown or raised food each month in schools and communities across the state. When you register for this free program you gain access to videos, recipes, posters, handouts, book suggestions, and various guides. This program provides handouts for each of the fifteen HOM foods and each handout has a lesson plan.
- [Food Corps](#) has a bank of evidence-based lessons available to download for free for K-5 students. They are organized by season and grade.
- [National Agriculture in the Classroom](#) provides free lessons and materials for grades K-12.
- Community agriculture organizations often create and adapt their own lesson plans. Garden City Harvest, a Missoula-based organization, has a [Teacher Resources](#) page with lesson plans, recipes, and other resources for educators. Check organization websites for resources. If you cannot access them online, reach out to see if they have any lessons that they are willing to share.

Choosing Educational Activities

There are many activities that could fit well in an agricultural education program. In general, choose activities that:

- **Incorporate Curriculum Requirements**
Many educational activities can also help teachers meet their curriculum requirements. Some have listed the Common Core and Next Generation Science Standards that they meet, such as HOM activities.
- **Create Student Buy-in**
Students often feel ownership over projects that they have responsibility to maintain and can watch change over time. This also creates a social and emotional connection to the project. The following are long-term, low-maintenance projects that subgrantees found particularly impactful:
 - Implementing and maintaining a classroom aquaponics or hydroponics system
 - Incubating eggs and hatching chicks
 - Building, planting, and maintaining school gardens

- Creating a windowsill container garden
- Implementing cafeteria or classroom composting
- Creating videos highlighting local producers AKA “virtual field trips”
- **Take Place Outdoors**
Subgrantees emphasized that students loved going outdoors to learn. Montana doesn’t always have the best weather for outdoor lessons, but get students outside when you can. It helps to have a space designated for learning, not playing, such as an outdoor classroom or learning space.
- **Are Hands-On**
Give students the opportunity to participate actively. Allowing students to do things like water plants, feed animals, and mill corn will help them be more engaged and learn new skills.



*Philipsburg’s outdoor learning space
Photo: Lauren Dunn, FoodCorps*

Project Highlights

Chickens at Cherry Valley Elementary

Cherry Valley Elementary School in Polson, Montana has an enrollment of about 250 students. Polson is part of the Flathead Indian Reservation, home to the Confederated Salish and Kootenai Tribes. Brenda Richey, MSU Extension Agent for Flathead Reservation used a portion of the EPA funds to incubate and hatch chicks in Cherry Valley’s lobby. Richey hooked up a camera to live stream the chicks 24/7 so that other schools and families could tune in at home. They continued to live stream after the chicks hatched.

Richey partnered with the local FFA chapter for the project. FFA members donated eggs from a variety of chicken breeds that Richey and Cherry Valley educators used to teach a lesson on diversity and inclusion. Richey commented that attendance had been low at Cherry Valley for the 2021-2022 school year due to the stress of the pandemic on children and families, but once they started the incubation, attendance continued to increase. Parents told Richey that the hatching project made their children excited to go to school. After the chicks lived at the school for a bit, two FFA members came to Cherry Valley to give a school-wide presentation on chickens, bringing two adult laying hens to show the students. The FFA members took the chicks back to raise them and they intend to repeat this project for years to come.

Composting Kickoff at Sleeping Giant Middle School

Sleeping Giant Middle School, located in Livingston, Montana, has an enrollment of 300 students in grades 6-8. Farm to School of Park County (F2SPC) is a community agriculture nonprofit. Megan Randall, Garden Manager at F2SPC, used a portion of their subgrant to fund a composting project at Sleeping Giant Middle School that will continue after the duration of the grant.

Randall partnered with Happy Trash Can, a composting company operating in Park County, to establish composting at the school. In order to create buy-in with the students, Ryan Green, co-founder of Happy Trash Can, kicked off their new composting program by presenting to students to teach them about the negative environmental impacts of food waste going to landfills. “The students learned that the best thing we can do for the planet in terms of food waste is to create less food waste,” Green said, explaining to students that composting is a way to do just that. They also learned that composting is an integral part of the local food/agriculture system.

Farm to Table with Gallatin Valley Farm to School

First, second, and fifth graders from Irving Elementary in Bozeman and Three Forks Elementary in Three Forks, about 120 students total, went on a field trip to Amaltheia Organic Dairy Farm with Gallatin Valley Farm to School (GVF2S). GVF2S is a nonprofit organization with the mission to “connect kids and families with local food in the garden, classroom, cafeteria and community.” At Amaltheia, the students were given a tour of the goat milking operation, interacted with baby goats, shown the greenhouse with vegetable starts, and learned how the food gets from the farm to people all over the state.

After the tour, the students participated in a cooking activity led by GVF2S with many ingredients sourced from Amaltheia, including carrots and goat cheese. The students learned how to use a grater, measure ingredients, and how to follow a recipe. Mia Thomas, Youth Programs Coordinator at GVF2S, said that the students gained a deeper understanding of the local food system and why it is important to support local producers.

This tipsheet was completed by Molly Kirkham, Montana Local Foods Specialist at the National Center for Appropriate Technology as part of an EPA Environmental Education Grant. The eight subgrantees were Land to Hand Montana, Gallatin Valley Farm to School, Farm to School of Park County, Montana State University – Flathead Reservation Extension Office – 4-H Mentoring, Polson School District #23, Philipsburg Elementary, Hardin School District 17H&1, and Lincoln Elementary School in Anaconda. For more information contact Molly at mollyk@ncat.org.

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