Using School Gardens to Develop Life Skills and Satisfy Curricular

Six years ago the University of Wyoming Lab School students, City of Laramie Parks and Recreation Department, and Laramie Rivers Conservation District partnered to develop an Outdoor Learning Center at LaBonte Park in Laramie, Wyoming. The center was designed by students to provide educational and recreational opportunities for students within Albany County School District and its residents.

Gardens were included in the plan to bring science, math, social studies, nutrition, agriculture, life skills, language and visual arts to life through hands-on learning. These spaces could be shared with parents, students, instructors and the community. Three separate gardens now reside at LaBonte Park, a Kid's Garden, community garden and xeriscape garden.

Success from these gardens began the ball rolling and sparked interests among several schools in developing gardens on school property. Teachers, students, parents, community volunteers, local businesses and Laramie Rivers Conservation District (LRCD) joined forces and began designing and developing raised bed gardens at five schools (St. Laurence, Slade, Linford, Rock River and Spring Creek Elementary Schools) within Albany County. Three of the schools also have small ADA accessible greenhouses and six schools have the beginnings of small fruit tree groves. We are currently in the planning process of designing additional gardens for the remaining interested schools within the district.

Funding to get the gardens off the ground was obtained by writing outside grants, LRCD cost share grants, schools funds and local business donations and discounts. A majority of the labor for prepping the ground, building the raised beds, pea and bean huts was supplied by volunteers assisted and overseen by LRCD and school maintenance staff. The gardens are primarily maintained by school staff and students. The LRCD Education Coordinator helps to monitor the condition and assists as requested. Two of the schools have garden clubs that operate both during the school year and summer months. Parents, teachers and principals share a watering schedule during the summer months and in turn harvest any vegetables that are ready to be picked.

Gardens complement the traditional curriculum by providing an opportunity for students to apply what they learn in the classroom. This is crucial because everyone, but especially children, remembers and understands better when they do things rather than just reading or hearing about them. The schools have access to the Junior Master Gardening curriculum and soil testing supplies through LRCD. We also incorporate opportunities for free exploration into garden activities. Children naturally stray from a focused activity but will remain more focused if they know there will be time set aside for free exploration of their own interests. Some subjects that can be incorporated utilizing a garden setting are:

Mathematics is used to calculate the amount of growing space, variety of plants and the amount of space each plant requires to determine how many plants can go in each bed and how many pounds of produce they should expect.

There is unlimited opportunity for **Reading, Writing and Speaking** in those gardens. There are oral presentations, informal debates on what to plant and garden maintenance, research papers, numerous books and research materials to read. Students can keep garden journals and connect with other agencies such as extension agents, nurseries, conservation districts, landscapers, botanists, chefs, local garden clubs, community and university colleges, etc. I saw one school utilizing an IPAD to research information about an insect.

Social Studies can make textbooks come alive. Students can make a meaningful connection by learning about other cultures and planting crops that are common to those cultures. Even in Wyoming's altitude and short growing season many of the Asian greens and pok choi will grow here. If you are learning about the Hispanic culture try raising peppers, tomatillos and cilantro, or if your class is learning about the American south grow some collard greens. If there is access to a greenhouse grow some peanuts and okra. Students can experience democracy firsthand by collectively deciding on what, where, when to plant, how to delegate duties and distribute the harvest.

Science is incorporated by using the gardens as a laboratory where they can observe, ask questions and seek answers through research and experiments. Gardens provide an extended period of time to experience the interaction of plants, insects, wildlife, weather, soil, water and energy.

Students develop **Life Skills** and an improvement in behavior by learning to work together and being responsible gardeners. They learn interpersonal skills, organization, management, making commitments, respecting opinions, resolving conflicts and reaching consensus when making decisions. Gardening is an inclusive activity, it does not matter what your ethnicity, background, economic status, or academic achievement is, any child can nurture healthy plants and reap a bountiful harvest. A garden can raise the self-esteem of children who may be struggling in the classroom. Students can also learn a sense of belonging to the community by donating a portion of the harvest to a local food bank or shelter or planting a row for the hungry.

In order for **Agriculture to be Sustainable,** three areas must be addressed - economics, environment and community. A sustainable agriculture must provide a fair and reasonably secure living for farm families, minimize harm to the natural environment, maintain basic natural resources such as healthy soil, clean water and clean air and provide fair treatment of all people involved in the food system, from farm workers to consumers. Students can explore and experiment with crop rotations, raised beds, minimal till digging, natural fertilizers, water conservation practices, natural pest controls, and researching local plant varieties or using varieties designed for our growing season and elevation. Students investigate careers in agriculture and schooling needed to fulfill future jobs.

Nutrition is an essential building block for student success. Healthy, active and well nourished children are more likely to attend school and are more prepared and motivated to learn. Developing positive eating habits during childhood contributes to optimal health, boosts self esteem, and can decrease the risk of immediate and long-term health problems. While the primary responsibility of schools is to foster academic achievement, schools have an exceptional opportunity to guide children toward healthier lifestyles and smart decision-making skills through school gardens. School gardens as a component of nutrition education can increase fruit and vegetable knowledge and cause behavior change among children. The curriculum for nutrition is easily incorporated into the school's core lessons. Harvest some of the vegetables and invite a chef in for a quick cooking class.

There are patterns in gardens similar to larger scale farms where more staff (students) needed for prepping the ground, planting, and harvesting. Students will be able to design a **Business Management** or a **Market Gardening Plan** for their garden. The plan may include crop types based on their goals for the garden, soil amendments, water usage, weed and pest control, production budget, amount of staff needed to maintain the garden, and expected amount of mature fruits and vegetables. What will they do with their harvest? Will their produce be utilized within the school's snack program, donated to a soup kitchen, given to families within their schools? Or, do they want to generate next year's operating funds by hosting a mini farmer's market. If they wish to donate or sell their produce, students would

have to define their customers ahead of time, grow desired vegetables, come up with competitive pricing, advertising, customer service and entrepreneurship.

Gardens are just a small part of the **Environment** but the opportunities for showing students good environmental stewardship are endless**.** Our food production and consumption practices over the past decades have contributed to a negative impact on caring for our environment. We often purchase vegetables or fruit that have been grown in other parts of the world or country and then trucked to our local grocery store, when some of those could have been grown locally or in our own backyards minimizing carbon emissions, pesticides and herbicides. There is the added benefit to boosting local economy by buying locally. Gardens are a portal for understanding concepts and issues in environmental education both at home and at school. Students develop a knowledge base to become environmentally connected.

Landscaping with harvested water, native plants, and habitat friendly gardens is a portal for understanding concepts and issues in environmental education both at home and at school. Students develop a knowledge base to become environmentally connected which can be carried on into adulthood.

The key to **Sustainability** is having strong support from parents, teachers, staff, community and students. Funding for the gardens can be obtained through the school district, parent teachers association, school gardening grants, and some local organizations such as conservation districts, city garden clubs, plant nurseries and school garden club fundraisers.

- Keeping detailed records of your progress, photos, donations of materials, time and monies, and feedback is critical. You will be able to share your work with administrators when seeking additional funds and recruiting new volunteers.
- Clear communication with your support team and donors will play an important role in sustaining your garden program. All of these people were integral in creating your garden and they will continue to be strong supporters as long as they feel their contributions are valuable and they know how they can continue to support you. These stakeholders will have a sense of ownership of the garden and in turn will feel responsible for keeping it alive.
- Promoting your school garden within the community helps with recruitment of new members. Do not rely on a small number of volunteers and donors to sustain your garden year after year because interest and availability can change. You also run the risk of burning your team out. Design a logo and mission statement for your garden. Include a gardening corner on the school's website that lists lesson plans, upcoming opportunities, and offer a way for gardening parents to communicate.
- Design your garden so that it can evolve and expand over time. This provides opportunities for new helpers to be on the ground floor for developing new elements within the garden. This can be as simple as adding a butterfly garden, compost set-up or offering a workshop to create stepping stone path for your garden.
- Establish an annual fundraising event to secure operating funds. Perhaps the students could sell collected and packaged seed, mini farmer's market, or offer a workshop day where students become the instructors and teach community members how to grow a garden. Fundraising can be incorporated into your business portion of your curriculum.
- The garden cannot be an add-on activity not related to the instructional day. All gardening activities must be used to provide learning experiences that help students meet state proficiency standards in all curricular areas.

- During staff development sessions provide teachers with garden based activities to support a strong standards-based curriculum.
- If possible secure a garden coordinator with a background in horticulture. This person could be shared among several schools within your school district. A paid coordinator has more time to devote to planning and teaching in the garden, have higher expectations, continuity and greater commitment than a volunteer. Having a garden coordinator does not mean classroom teachers are not involved in the garden experience; instead it allows them to focus on the lessons.

School gardens can take a variety of forms, from the simplest containers outside a classroom to several beds and a greenhouse. The size of your garden should not limit its potential to contribute to the learning environment. There are several resources and people within your community willing to help get your garden growing.

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