

# FROM GREENHOUSE TO CAFETERIA:



A TOOLKIT FOR CREATING  
AND REVAMPING GREENHOUSE  
PROGRAMS IN NEBRASKA SCHOOLS



CENTER *for* RURAL AFFAIRS

# FROM GREENHOUSE TO CAFETERIA

East Butler Public Schools serves as a pilot for Center for Rural Affairs' Greenhouse to Cafeteria program. Students grow vegetables in a greenhouse and deliver the food to the cafeteria. Instructor Shane Hennessy also serves as a resource for other schools.

"I like that this activity is not ordinary. It's outside of the classroom."  
-Morgan Osmera, sophomore



Morgan Osmera waters blooming plants. Students are responsible for weeding, cleaning, and watering beds, and harvesting vegetables.

"It's cool to have a connection with our lunch. We're able to eat the food we've grown."  
-Brittany Timoney, senior



Students Illyana Hamicksburg, Alex Chritiansen, and Brittany Timoney cut lettuce for the day's lunch and learn tips from Kirstin Bailey, Center for Rural Affairs project associate. The greenhouse contains raised beds and a hydroponics growing system.

"The food comes straight to the cafeteria, there is no in-between. And, the kids like lettuce."  
-Kathy Pelan, head cook



Head Cook Kathy Pelan receives lettuce from Brittany Timoney and Alex Chritiansen. She then distributes the greens to grades kindergarten through 12th during lunch.

"We brag it up at lunch that we took care of their food. It's great seeing something you did."  
-Illyana Hamicksburg, junior



Instructor Shane Hennessy helps students weigh lettuce before taking it to the cafeteria. The two bags totaled 3.25 pounds, which was the largest harvest so far in the school year. | Photos and story by Rhea Landholm



# INTRODUCTION

---

Hello,

Growing food is part of Nebraska's rich history, an experience that is not limited to the farmer, but can also benefit teachers and students. Across the state, school districts are using the Center for Rural Affairs' Greenhouse to Cafeteria program to turn pulling weeds and snapping beans into math and science lessons. While schools often don't have the resources to provide elective courses, greenhouses can provide students skills such as cooking and growing fruits and vegetables. They can also give students the pride of producing their own meals. As one East Butler Public Schools student said, "We brag it up at lunch that we took care of their food. It's great seeing something you did."

Greenhouse to Cafeteria adds to the 30,000 acres of fruit and vegetable cultivation in our state and provides a healthy addition to school lunches. Food service staff have had the opportunity to plan new menus and prepare exciting meals offering improved nutrition to students. The Greenhouse to Cafeteria toolkit lays out how schools can revamp existing greenhouses or build operations from the ground up.

The toolkit introduces school districts to the resources needed to develop a greenhouse curriculum as well as the support tools to design, build, and maintain a school greenhouse. In addition, it provides instruction on how to develop buy in from the local community and faculty to support greenhouse programs. Independent resources are listed at the end of the toolkit to assist in each stage of a greenhouse program.

Our hope is that this toolkit will inspire additional schools to adopt a greenhouse program and build upon our state's proud agricultural heritage. Please feel free to reach out to the Center for Rural Affairs for further assistance and resources.

Good luck!

Kirstin Bailey  
Project Associate  
Center for Rural Affairs  
kirstinb@cfra.org

Justin Carter  
Project Associate  
Center for Rural Affairs  
justinc@cfra.org

Erin Schoenberg  
Project Associate  
Center for Rural Affairs  
erins@cfra.org



# TABLE OF CONTENTS

---

5	Launching a greenhouse project
6	Inviting collaboration
7	Purpose and goals
8	Creating curriculum
9	Designing a greenhouse system
10	Maintaining a greenhouse system
11	Planning worksheet template
12	Produce seasonality guide for Nebraska
13	Production plan
15	Greenhouse map example
16	Examples and resources
18	Sponsors and funders

About the Center for Rural Affairs: Established in 1973, the Center for Rural Affairs is a private, nonprofit organization with a mission to establish strong rural communities, social and economic justice, environmental stewardship, and genuine opportunity for all while engaging people in decisions that affect the quality of their lives and the future of their communities.

This material is based upon work that is supported by the Food and Nutrition Service, U.S. Department of Agriculture. The Center for Rural Affairs is an equal opportunity employer and provider.

Additional support from: FFA and University of Nebraska Lincoln-Extension.

Acknowledgment: This publication was inspired by the Central Louisiana Economic Development Alliance Greenhouse to Schoolhouse toolkit. We thank them for their collaboration on this project.

Created November 2019.



# LAUNCHING A GREENHOUSE PROJECT

---

A Greenhouse to Cafeteria program can require a significant amount of effort from both a school administration and a community to begin and maintain. A program should begin with a brainstorming session from those interested—together these folks can create a basic plan for what the project can be. Think of this as the seed of an idea, that will grow and change as more people become involved. Think of key people in your community who could assist, such as local growers, 4-H and FFA chapters, and agriculture extension agents. As people have a chance to help shape the project, they will become more invested in ensuring it becomes a reality.

## Managing the program

School districts can be complex, with management levels ranging from a single teacher to the president of the school board. A greenhouse project can be administered from any one of these levels, depending on the program goals. Clarify this early in the process. Often, strong administrative support translates into a larger impact, but on the other hand, may be more complex to manage. Consider the following management levels and keep in mind that a greenhouse doesn't need to be limited to a single program.

Organized by one or several **teachers**: Common for a small teaching greenhouse that supplements a few classes, curriculum driven and limited to just one or a few classes. May also be appropriate for extracurricular groups, such as FFA, that can utilize the greenhouse during classes or in after school programs.

Embraced by the whole **school** and championed by the **principal**: Large scale, involves multiple classes and grades, can be curriculum driven and/or provide healthy food for students.

Driven by **Child Nutrition Programs** or the **school board**: May support projects at multiple schools and focus on vegetable production, with goals to provide fresh produce in school meals or cultivate healthy eating habits for students. Curriculum and educational goals can be supported by sharing greenhouse management and access with interested teachers. If focusing specifically on nutrition, **school nurses** can also serve as greenhouse allies. Nurses often have specific goals centering on student health and nutrition, and greenhouses can be a tremendous tool in achieving these goals.

## Forming a greenhouse committee

While a greenhouse program can be administered at any of the levels mentioned above, a more comprehensive approach is to form a greenhouse committee. A committee will ensure buy in from different staff and encourage collaboration on the project. A well-rounded team will include staff from diverse programs. Each staff member can assume different responsibilities related to the greenhouse, for instance an FFA instructor may lead production education while food service staff or a school nurse may be in charge of nutritional programs. The committee may be mostly adults, but student leaders should be included as well, as they'll benefit the most from the greenhouse. Creating interest and forming a committee ahead of time will help your greenhouse become a reality. By having strong participation from a variety of areas of the school, your greenhouse can be a more comprehensive program, and more likely to have continued support.



# INVITING COLLABORATION

---

Regardless of who administers your greenhouse program, supporters, participants, allies, and champions are all vital to your success and can be drawn from within the greater school community. Certain members of the school community are essential to a successful program. Invite anyone who is interested to help plan and decide the purpose and goals of your greenhouse program. Particularly include anyone who will be directly a part of the project, including students, staff, and teachers.

## Administrators

Permission from the school principal is of course necessary, but active support from within the administration of a school may be equally important. Starting and running a Greenhouse to Cafeteria program is a complex endeavor requiring significant investment of money, resources, and time. Without the security of a supportive school administration, a program will be difficult to launch and sustain.

## Teachers

Whether academic achievement is your primary goal, or maybe your goal is increased access to nutritious food for your students, teachers are key to your success. At least one teacher should be engaged and committed to get the program running.

## Students

Students receive the majority of benefits from any school greenhouse project. Even before your program begins, let the students know it is coming, how they will be involved, and communicate the excitement of the project. Students can help plan or implement, and their excitement can encourage other teachers, parents, and administrators to get involved.

## Parents

Parents are a source of potential knowledge, labor, supplies, and funds, in addition to encouraging their kids to be excited participants. Parents can also petition the school on your behalf, by showing that they and their children find the Greenhouse to Cafeteria project beneficial.

## Food service staff

If providing students with a healthy diet is one of your greenhouse goals, you'll need the support of your food service staff. They will be the team incorporating the harvest into meals and planning new menu items. They should be involved with the project and offered resources on fresh food safety and meal preparation.

## School nurses

As health educators, school nurses can play a key part in forming a greenhouse. They can provide examples of health curriculum to be used in greenhouse programming or advise on which vegetables to grow as nutritious supplements to school meals.

## Staff

School staff can provide essential skills in construction, set up, and operation of a greenhouse facility, particularly custodial and maintenance staff.



# PURPOSE AND GOALS

Greenhouse to Cafeteria projects come in many forms with various objectives. Early in the process of starting a school greenhouse program, you and your team of supporters should map out the specific purpose and goals of your project. Common reasons for starting a school greenhouse program include food production, academic achievement, and improved health or nutrition. These reasons are described in more detail below, although your particular program may be a combination of these or other reasons. A well formulated plan helps to clearly communicate your purpose with school staff, administrators, parents, and the community.

## Health and nutrition

Growing and harvesting vegetables is a great entry point to increase student consumption of produce. Greater interest in, knowledge of, and willingness to try fresh vegetables can be generated through greenhouse and garden activities. Studies have shown that students who participate in school gardens are interested in eating the fruits of their labor, tend to choose more fresh and healthy meal options, and have healthier lifestyles.

As one teacher said, “We went into a kindergarten classroom, cut their lettuce, and allowed them to take it home to share with their family for supper. The next day, one student came back saying he was so mad at his mom. She ate the lettuce when she got home (before supper) while he was playing outside and he didn’t get any of it.”



## Academics

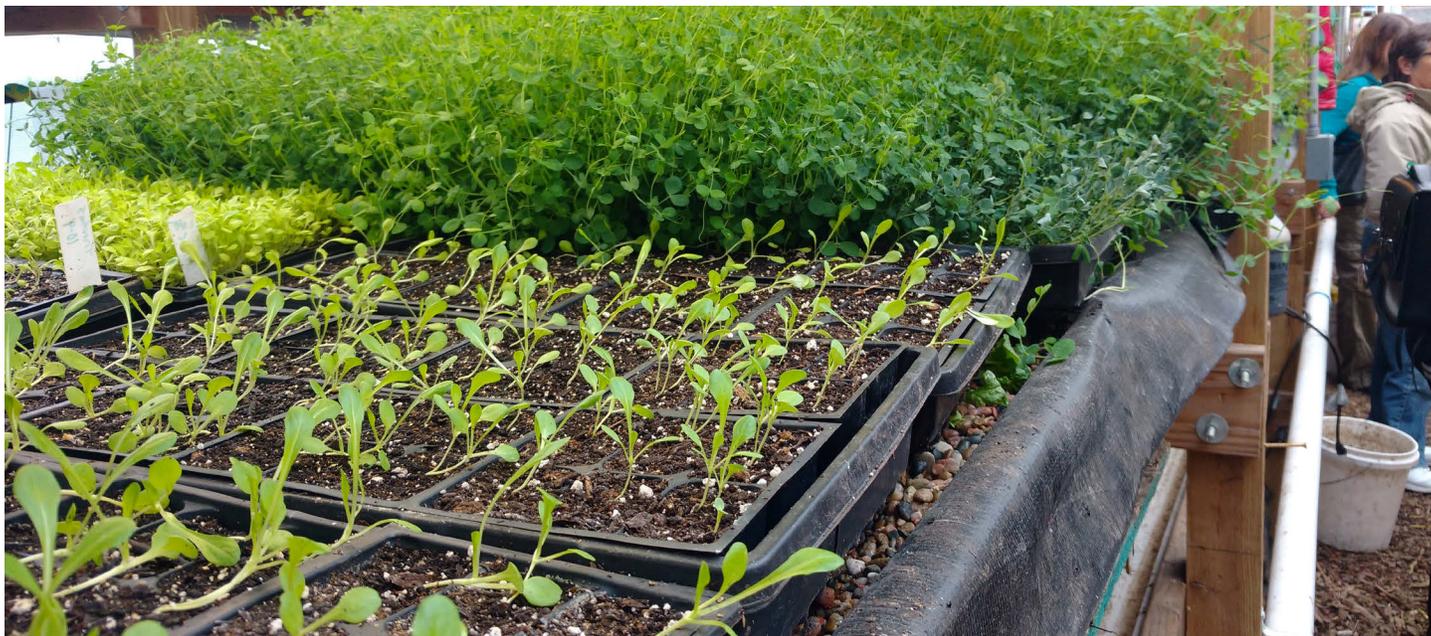
When guided by teachers, students can meet specific learning objectives by participating in the activities of the greenhouse. There are many curriculum guides that link growing, planting, and harvesting activities with standards-based educational outcomes. Subjects available to integrate with your greenhouse include biology, chemistry, mathematics, entrepreneurship, and many more academic topics. Implementing a curriculum can be as simple as purchasing a guide and following the lesson plans. However, evidence shows the most successful curriculums are paired with frequent training sessions for teachers on how to use and apply curriculum.

## Production

With a little knowledge, infrastructure, and effort, large quantities of high-quality vegetables can be grown in a school setting. A successful food production system can provide one, two, or several crops, and can be designed to provide daily or weekly harvest. For example, maybe you can supply all the salad for your school, or tomatoes for several schools. Food safety is extremely important when food is destined for the school cafeteria or student consumption, so plan to include training and development of a food safety plan for harvest and food storage. Expect to spend time daily on the management of a production focused greenhouse system.



# CREATING CURRICULUM



## A whole school approach

In some cases, an entire school may be engaged around the greenhouse, with classes or subject areas from many different grade levels developing some activity, exercise, or assignment that is linked to the project. A greenhouse may be used daily for teaching or lessons, which can incorporate greenhouse operations such as managing the nutrient balance of the water, planting new seeds, harvesting the crop, keeping records, and tracking costs/income. Harvested produce can go to the school cafeteria and be consumed by students, contributing to nutrition and healthy eating habits. Excess produce can be sold for income, which may present a compelling opportunity for student business and entrepreneurship training.

## A classroom approach

In a more modest approach, individual teachers can make use of the greenhouse program to supplement or complement their specific curriculum. Teaching guides have been developed to link all the major and many minor subject areas to school gardens, including entrepreneurship, science, language arts, and health, to name just a few. Teachers may include greenhouse-linked lessons on a monthly, weekly, or daily basis.

## Student clubs or after school programs

Students may be involved outside of class in a club or after school program that incorporates the greenhouse growing operation into its activities. FFA, 4-H, Junior Master Gardeners, or a school “Garden Club” are common student organizations of this type. Students also can be engaged in the cafeteria, through eating the produce itself, nutrition education, or farm to school activities such as Nebraska Thursdays, voting on a vegetable of the month, or competing to develop a healthy food recipe using local ingredients.



# DESIGNING A GREENHOUSE SYSTEM



## The greenhouse

The goals of your project will help tell you how large and how many greenhouses are needed. Maybe your school already has a greenhouse that can be repurposed or refurbished, if not you will need to build new. In addition to providing water, cooling, and heating, the key resource your greenhouse should provide is light. Choosing a high quality, warranted covering is the best way to ensure good light over many years, which can be supplemented with greenhouse grow lights. Ultraviolet protected polyethylene film or rigid polycarbonate panels are the two most common options. In your greenhouse, you will also need a growing system, such as hydroponics, aquaponics, or soil-based system.

A **hydroponic system** uses water to grow vegetables without soil. Two recommended types are the “floating raft” and “nutrient film.” Nutrient film places plants in a trough, like a PVC pipe with holes, and runs the water/nutrient solution through the pipe and over the roots. A floating raft system employs a large, shallow pool of water/nutrient solution with floating styrofoam sheets suspending plants so their roots extend into the water. Hydroponics will require pumps, filters, and reservoirs, and nutrients in the form of water soluble elements and chemicals formulated for hydroponic systems.

**Aquaponics** is a variation of hydroponics that includes fish production in separate tanks, and uses the fish wastewater to fertilize the vegetable plants. This system provides both protein and produce. It can also be configured as a fish only system, which typically consists of tilapia, carp, or catfish.

**Soil-based systems** use growing trays or pots filled with potting soil and raised up on tables or “benches.” As plants grow and are harvested, the soil becomes depleted of nutrients or harbors plant disease and must be discarded and replaced. Either irrigation (mist or drip) or hand watering will be required. If you prefer in the ground growing, consider a “high-tunnel” or a garden outdoors.



# MAINTAINING A GREENHOUSE SYSTEM



## Food production

Common crops include lettuce, tomatoes, cucumbers, strawberries, other leafy greens, and herbs, although there are many more options. You will need space and a system for germinating seeds and starting whatever crop you choose before transferring seedlings to the growing system. Make a planting and harvest schedule for each crop. Also, plan daily monitoring of your growing conditions and expect to adjust the water, light, temperature, or fertility in your greenhouse on a daily basis. Factor in significant time to harvest and package your produce.

## Harvest

Particularly in a managed greenhouse system, your produce will need to be harvested several times a week, or even daily, depending on the crop and planting schedule. Timely harvest keeps the plants healthy and stimulates continuous production, and also helps reduce some plant diseases. Be sure to employ good harvest practices to ensure food safety and quality, and have a plan in place for packaging, storage, or distribution, as appropriate.

## Plant, pest, and disease control

Careful monitoring for plant disease or pest insects is crucial to maintaining a good growing environment. Because a greenhouse is a closed environment, when an outbreak occurs it can often spread rapidly and become very difficult to eradicate. Insects can often be controlled using an “Integrated Pest Management” approach, which may call for releasing beneficial insects to counter the pest, such as ladybugs or praying mantises. Try to avoid chemicals, such as pesticides, to reduce the risk of exposure to students and harvested food.

## Additional responsibilities

Maintenance of the system, care over weekends and holidays, and over the summer break all present a major demand of time and knowledge. These responsibilities must be made clear and someone specific should be assigned to keep the system running.



# PLANNING WORKSHEET TEMPLATE

Copy this worksheet as a guide to help you get organized and plan your greenhouse project. This worksheet follows the “From Greenhouse to Cafeteria toolkit.” Expect your plans to change, maybe several times along the way, and consider filling in this worksheet multiple times to reflect changing goals, participation, or resources. For some topics, you will need a much more detailed plan, such as for crop planting, tending, and harvesting, so do not limit yourself to just this worksheet.

<b>Core team members / position</b>	<b>Purpose of greenhouse program</b>
1. 2. 3. 4. 5.	
<b>Specific goals</b>	<b>Intended level of management</b>
Health and nutrition  Food production  Academics	
<b>Crop / growing months / purpose</b>	<b>Participants in greenhouse Grade / subject area / clubs</b>
1. 2. 3. 4. 5. 6.	
<b>Sources of funding</b>	<b>Primary growing system</b>
	<b>Who is responsible?</b>
	Scheduling Growing Harvesting Maintenance Money



# PRODUCE SEASONALITY GUIDE FOR NEBRASKA

Product	Months in season												Greenhouse grown	Can be stored	Can be frozen fresh			
	J	F	M	A	M	J	J	A	S	O	N	D						
Apples																	X	X
Asparagus																		X
Beets															Year round		X	
Blackberries																		X
Broccoli																		X
Cabbage																	X	X
Cantaloupe																		X
Carrots															Fall/spring		X	X
Cherries																		X
Cucumbers															Spring/early summer			
Eggplant																		X
Garlic																	X	
Grapes																		X
Green beans																		X
Herbs																		X
Kale															Year round			X
Kohlrabi																	X	X
Leeks																		X
Lettuce															Year round			
Onions															Green onions year round		X	
Peaches																		
Pears																		
Peas															Spring/fall			X
Peppers															Spring/summer			X
Plums																		
Potatoes																	X	X
Pumpkins																		
Radishes															Year round			
Raspberries																		X
Rhubarb																		X
Spinach															Year round			X
Squash																	X	X
Strawberries																		X
Sweet corn																		X
Sweet potatoes																	X	
Tomatoes																		X
Turnips															Year round		X	X
Watermelon																		X
Zucchini																		

\*Most garden vegetables can be started indoors in March or April.

## Local year round



Cheese

Meats and poultry

Milk

Beans (dry edible)

Grains and flours





# PRODUCTION PLAN

Production plans are helpful when preparing for the growing season. A well thought out plan will document each step in your production process (sowing, maintenance, harvest, etc.) and put your school on a path to success. A production plan can also be a learning document where you can add useful information and lessons learned; such as harvesting rates and diseases and pests experienced. It can be a document you return to in following seasons to increase your rate of success. It's important to know that no production plan is the same. Many will be tailored to individual greenhouses or gardens and each variety of vegetable or fruit planted should be well researched. Below is an example of a production plan with common Nebraska produce to get you started. Noted in the first column are planting and harvest dates, these are calculated by beginning with the desired harvest date and then using days to maturity (DTM) to count back to the planting date. **These are only examples under ideal conditions**, a school should calculate their own dates specific to their programs.

## Tips and tricks

Seeds germinate faster and successfully when the soil temp is anywhere from 75 to 80 degrees. You can achieve this with either a seed starting mat, or by placing them on a radiator or on a table with a small heater underneath. Be careful temps don't get too hot or they will not germinate. Everything can be direct seeded if it is more appropriate for your space and timing. Plan out harvests so that they are finished before breaks.

	Head lettuce	Cherry tomatoes	Bell peppers
Planting and harvest dates	Planting: Oct. 26 Harvest: Dec. 10  Planting: March 16 Harvest: April 30	Planting: Sept. 6 Transplant: Oct. 11 Harvest: Dec. 10  Planting: Jan. 26 Transplant: March 1 Harvest: April 30	Green Planting: Oct. 18 Harvest: Dec. 10 Planting: March 1 Harvest: April 30  Red Planting: Sept. 28 Harvest: Dec. 10 Planting: Feb. 10 Harvest: April 30
Sowing	Sow in flats, 1 seed/in., or in 3/4 in. plug trays, at 1/8 in. deep. If sowing in flats, transplant 1-2 in. apart into pots 2 weeks later.	Sow in flats at 1/4 in. deep. Keep temperature at 75-90 degrees for faster germination. When true leaves develop transplant into plug trays or 3/4 in. pots.	Sow in shallow flats, 4 seeds/in., 1/4 in. deep. Maintain a high soil temp (80-90 degrees) as seeds will germinate slowly and inconsistently in cool temps. When the first leaves appear, transplant into 2 in. cell type containers or 4 in. pots.
Transplanting	3-4 weeks after sowing. Reduce water and temperature 2-3 days before planting to harden plants. Transplant 10-12 in. apart in rows 18 in. apart.	7-8 weeks after sowing. Plant 3/8 in. deep, covering the root ball well and up to the first leaves. Depending on variety plant 2-3 ft. apart.	8 weeks after sowing. Transplant when soil is warm and settled. Plant 12-18 in. apart in rows 24-26 in. apart.
Maintenance	Grows best in temps 60-65 degrees. Sow every 3 weeks for continuous supply. Performs best with consistent, moderate soil moisture throughout germination. Keep cool or lettuce will bolt.	Should be staked, trellised, or caged for best results. High nitrogen fertilizer can cause rampant growth and fruits susceptible to rot. Avoid overhead irrigation to reduce disease. There are many soil-borne diseases that impact tomatoes.	Drip irrigate only to prevent disease. Control insect infiltration using paper cylinder collars. Plant only in well-drained soil and minimize compaction.
Harvest	Should be planted in early spring as it does better in low temps, seeds germinate as low as 40 degrees. Days to maturity is around 45 days. Can be replanted when school starts for a fall harvest.	Days to maturity is about 60 days. Fruit will ripen on the vine with plants producing throughout the season. Harvested fruit can be stored at 45-60 degrees for 4-7 days.	Days to maturity is about 60 days for green varieties, 80 for red. Pick the first peppers when they reach full size to foster additional fruits.
Notes	Can be direct seeded at 2 in. apart in rows 12-18 in. apart.	Don't start too early. Tomatoes need consistently high temps and plenty of sunlight to be successful.	The model seedling will have buds, but no open flowers when transplanted.

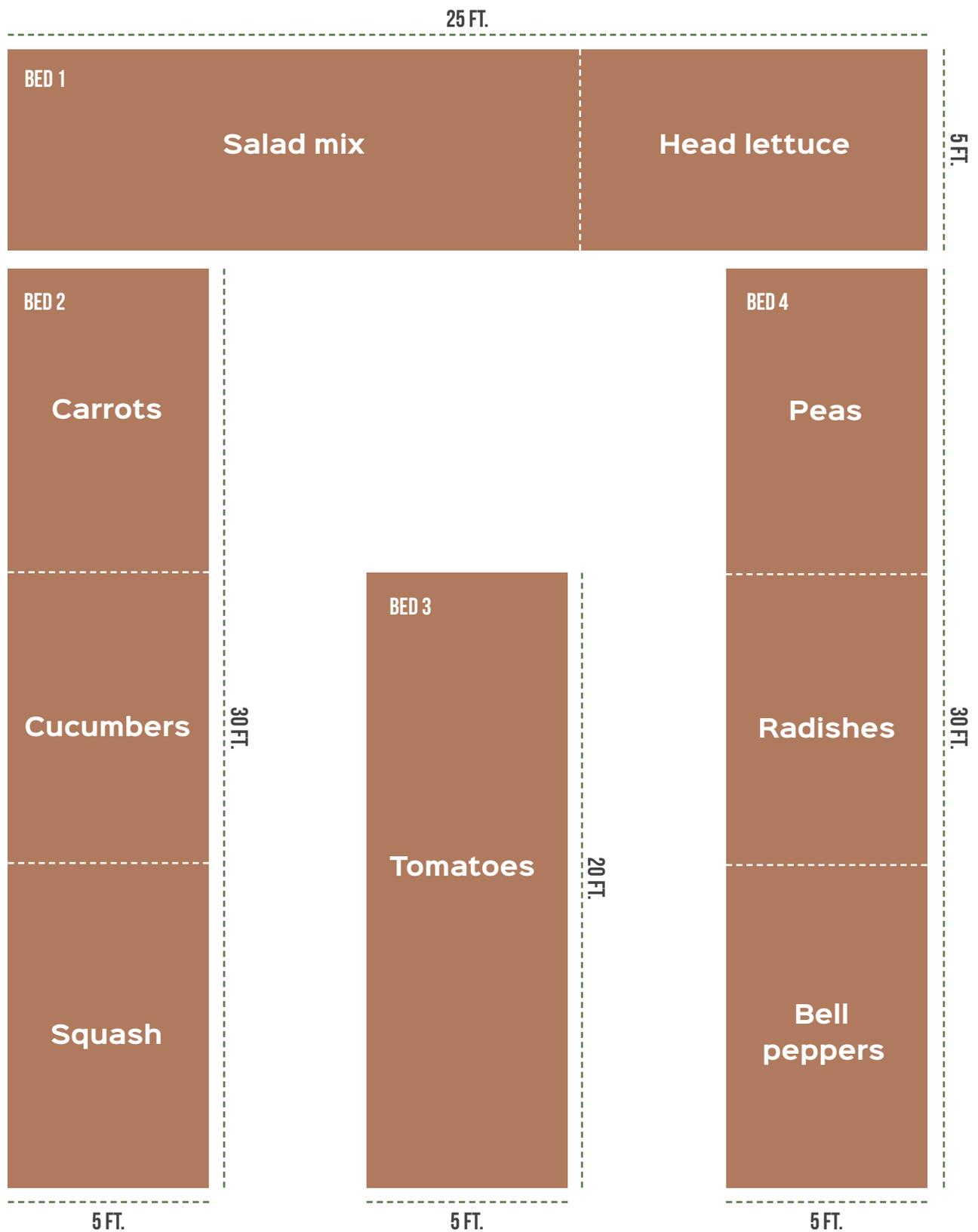


# PRODUCTION PLAN CONTINUED

	Radishes	Peas	Salad mix
Planting and harvest dates	Planting: Nov. 17 Harvest: Dec. 10  Planting: April 7 Harvest: April 30	Planting: Oct. 7 Harvest: Dec. 10  Planting: Feb. 26 Harvest: April 30	Planting: Nov. 12 Harvest: Dec. 10  Planting: April 2 Harvest: April 30
Sowing	Direct seed ¾-1 in. apart, using 2-3 in. wide bands, ½ in. deep in rows 1 ft. apart. Can be sown at any time during the season.	Direct seed in early spring as soon as soil can be worked. Sow 1-1½ in. apart in 3 in. band (25 seeds/ft.), ½-1 in. deep. Space rows 4-6 ft. if tressling, 12-18 in. if not tressling.	Sow in cool soil at 10 seeds/ft., ½ in. deep, in rows 12-18 in apart.
Transplanting	Seed directly.	Seed directly.	Seed directly.
Maintenance	Should be grown rapidly with plenty of moisture. Hot and dry weather hurt growth.	Varieties under 3 ft. tall do not require support. Taller varieties should use a trellis net or chicken wire.	Germinates best in cool weather. If in a warmer environment, water to help keep cool.
Harvest	Radishes are only in prime condition for a few days. Harvest at 3-4 weeks when roots are about the size of a marble. Days to maturity is about 23 days.	Cool weather crops, harvests come early and midsummer pickings are not common. Days to maturity is about 64 days.	Harvest at full size but before bolting. Cut just below the root attachment. Days to maturity is about 28 days.
Notes	Radishes will keep 3-4 weeks in crisp condition if kept at 32 degrees, 95 percent humidity, and in breathable packaging.	Install support when planting. Suspend the bottom of the support just above where the young plant will grow.	For a continuous supply, sow every seven days.



# GREENHOUSE MAP EXAMPLE



# EXAMPLES AND RESOURCES

---

## Launching a greenhouse project

- **[cfra.org/f2guide](http://cfra.org/f2guide)** - The Center for Rural Affairs farm to school guide.
- **[farmtoschool.org/resources](http://farmtoschool.org/resources)** - Resource database offering nationwide information on topics such as school gardens, food preparation, and farm-based education.
- **[docushare.lps.org/docushare/dsweb/Get/Document-2241934/School%20Garden%20Manual%202018.pdf](https://docushare.lps.org/docushare/dsweb/Get/Document-2241934/School%20Garden%20Manual%202018.pdf)** - Lincoln Public Schools' garden manual, which includes specific sections on designing a garden team.
- **[education.ne.gov/ns/farm-to-school](http://education.ne.gov/ns/farm-to-school)** - Nebraska Department of Education's farm to school website has information available regarding local food initiatives in the state of Nebraska, such as Harvest of the Month and the Nebraska Thursdays program.

## Inviting collaboration

- **[out-teach.org/](http://out-teach.org/)** - Out Teach is a nonprofit offering professional development to teachers working on outdoor experiential learning programs. School gardens are often used as an exploratory program to help students apply knowledge and skills in innovative ways while building on relevant and meaningful connections to the larger world.
- **[buylocalnebraska.org/community-gardening](http://buylocalnebraska.org/community-gardening)** - Buy Fresh Buy Local includes many resources and links to beginning community gardens, with specific resources on youth programming.

## Purpose and goals

- **[4h.unl.edu/](http://4h.unl.edu/)** - Nebraska's 4-H programs offer a wide range of events and opportunities related to a variety of fields, including agriculture.
- **[circlecmarket.com/our-beginning.html](http://circlecmarket.com/our-beginning.html)** - Circle C Market is a student-run grocery store in Cody, Nebraska, and is a great example of how student entrepreneurs can utilize food production.
- **[thelunchbox.org/](http://thelunchbox.org/)** - The Lunch Box is a resource that assists school districts transition from processed foods to scratch cooking using fresh ingredients. Includes recipe databases of U.S. Department of Agriculture compliant recipes, menu planning, salad bar, procurement, management, marketing, education, and human resource tools.

## Creating curriculum

- **[shop4-h.org/products/2004-gardening-curriculum-level-4-growing-profits](http://shop4-h.org/products/2004-gardening-curriculum-level-4-growing-profits)** - Growing Profits is a 4-H activity booklet with six units ranging from garden planning to harvest/storage and careers.
- **[cde.state.co.us/nutrition/farmtoschoolbvmanual](http://cde.state.co.us/nutrition/farmtoschoolbvmanual)** - Boulder Valley School District Farm-To-School Manual.
- **[teachinginnaturesclassroom.org/](http://teachinginnaturesclassroom.org/)** - In "Teaching in Nature's Classroom," Nathan Larson shares his core principles of garden-based education. These best practices are laid out through engaging stories from the field.
- **[biggarden.org/skills-library](http://biggarden.org/skills-library)** - Big Garden is an Omaha-based organization creating youth programs around community gardening.



# EXAMPLES AND RESOURCES

---

## Designing a greenhouse system

- **[extensionpublications.unl.edu/assets/pdf/g2246.pdf](http://extensionpublications.unl.edu/assets/pdf/g2246.pdf)** - University of Nebraska-Lincoln Extension Institute of Agriculture and Natural Resources guide on choosing a greenhouse design that is best for you.
- **[outdoornebraska.gov/troutintheclassroom/](http://outdoornebraska.gov/troutintheclassroom/)** - Schools participating in Nebraska Game and Parks's Trout in the Classroom program may be able to pair activities with aquaponics.
- **[sare.org/Learning-Center/Topic-Rooms/High-Tunnels-and-Other-Season-Extension-Techniques](http://sare.org/Learning-Center/Topic-Rooms/High-Tunnels-and-Other-Season-Extension-Techniques)** - Sustainable Agriculture Resource and Education offers various resources of the use of greenhouses, high tunnels, and other season extension techniques.
- **[cea.cals.cornell.edu/attachments/Cornell%20CEA%20Lettuce%20Handbook%20.pdf](http://cea.cals.cornell.edu/attachments/Cornell%20CEA%20Lettuce%20Handbook%20.pdf)** - Cornell University's guide to hydroponic agriculture in greenhouse systems.

## Maintaining a greenhouse system

- **[attra.ncat.org/viewhtml/?id=45](http://attra.ncat.org/viewhtml/?id=45)** - Organic Greenhouse Vegetable Production guide covers the basics and options for a successful greenhouse operation. National Center for Appropriate Technology's ATTRA is a great organization that provides information on many sustainable agriculture topics.
- **[attra.ncat.org/viewhtml/?id=48#general](http://attra.ncat.org/viewhtml/?id=48#general)** - Integrated Pest Management for Greenhouse Crops guide produced by ATTRA.
- **[ag.umass.edu/greenhouse-floriculture/fact-sheets/hydroponic-greenhouse-production-resources](http://ag.umass.edu/greenhouse-floriculture/fact-sheets/hydroponic-greenhouse-production-resources)** - Hydroponic Greenhouse Production Resources from the University of Massachusetts Amherst.
- **[growing-gardens.org/wp-content/uploads/2013/03/Summer-in-the-School-Garden-A-Resource-for-Working-with-Volunteers-to-Maintain-your-School-Garden.pdf](http://growing-gardens.org/wp-content/uploads/2013/03/Summer-in-the-School-Garden-A-Resource-for-Working-with-Volunteers-to-Maintain-your-School-Garden.pdf)** - The Growing Gardens Summer in the School Garden resources can give you tips on how to maintain your greenhouse during summer breaks.



# SPONSORS AND FUNDERS

---



CENTER *for*  
RURAL AFFAIRS



Nebraska FFA  
Association



These institutions are equal opportunity providers and employers.

