



Module 0: How to use the *Food Up!* curriculum - tips, tricks, and background

Welcome to *Food Up!* —a hands-on urban agricultural curriculum specifically designed to be flexible for use with at-risk and special needs youth, by nonprofit organizations and community gardens, or any urban project in need of activity-based, modular programming.

Vulnerable, unhoused, and special needs youth are unlikely candidates for conventional urban agriculture training programs. However, enhanced understanding of food production and food systems can empower youth to explore otherwise unknown careers in agriculture, grow food for their own consumption, eat healthier and more sustainable diets, and even participate more actively in their own communities. By connecting with local organizations serving at-risk youth and special needs youth, there are opportunities to provide targeted, exciting, and *flexible* education linked to urban agriculture to this new audience. Many existing curricula rely heavily on classroom activities, reading/literacy skills, and long-term time investments. Reaching this diverse audience may occur via less formal or structured interactions—with churches, non-profit organizations, community groups, neighborhood gardens, or after school programs. Adult leaders in these settings may not be trained in agriculture or have backgrounds in education. Thus, *Food Up!* was designed as a flexible, easy to use, activity-based curriculum that can support better engagement and greater impact.

Food Up! includes nine modules that cover a wide range of topics, from food security and food justice to marketing and soil health, along with gardening basics, climate change, mental health, and even nutrition. Intended for use by a wide-range of garden projects, nonprofits, and community organizations in Wisconsin and beyond, *Food Up!* utilizes games, hands-on activities, visuals, personal reflection, and group discussion to reach a wide array of students with variable educational backgrounds. Importantly, the modular design allows for drop-in participation, as students need not complete all modules (or complete them in any specific order) to benefit. Each lesson includes teacher instructions, a teacher print kit and materials list, student handouts, and bonus cards that can be used to supplement activities. Additionally, specific tips for working with special needs and at-risk youth are provided to support educators. *Food Up!* builds on and adapts existing food system and urban agriculture curricula, providing clear references to relevant sources where teachers can obtain more information.



HOW TO USE:

This curriculum is intended to be user friendly for teachers of all backgrounds and levels of experience. Although the lesson modules are numbered (1 to 9) instructors do NOT need to use this curriculum in any specific order. Module 2 builds some background for other lessons, so it is a great place to start. However, all the modules are designed to be completely stand-alone. Hence, it is a pick and choose as you go design. Some lessons are a bit longer and good for rainy days when you want to be inside (see “May we suggest...” Table below). Others are best for active outdoor days. All lessons are intended to be amenable for students with variable educational backgrounds and skill sets. For example, whenever reading is required, the teacher or volunteer is encouraged in the lesson plan to read aloud. Most handouts contain images with text, and hands-on activities rarely require writing more than a few words.

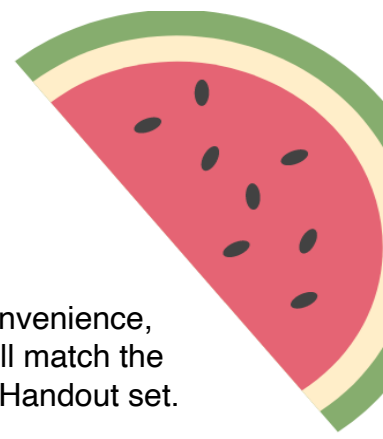
Each module contains the following three documents, which you will want to review in advance:

1. **Lesson Plan** - Lesson plans include time expected, learning objectives, background information for the teacher, materials list, suggested discussion questions, and activity plans. The activities often build on one another, so it is important to use the activities within the module in the order that they are written and numbered.
2. **Teacher Print Kit** - The teacher print kit includes materials like answer keys, teaching aids, and displays that only require one copy for the class. We recommend printing one copy for each module you plan to teach.
3. **Student Handouts** - Student handouts include student worksheets, card games, and displays that require closer inspection by students. Student handout documents have a header page with specific instructions on how many copies to print based on the number of students you plan to teach.

BONUS CARDS:

In addition to the seven core Modules, *Food Up!* contains a Bonus Card Deck with strategies for gardening, nutrition lessons, and recipes for garden produce. These cards will be suggested as extra or optional material throughout the modules. They also serve as quick guides for gardening activities and discussions when your time in the garden calls for more informal learning. The Bonus Card deck includes:

1. *Kitchen Essentials* - lists of kitchen and recipe essentials to accompany the lesson plans.
2. *Recipes* - simple, easy to make recipes that you can make together, use as examples, or send home with students if they take produce home from the garden.
3. *Nutrition Basics* - key information on specific nutrients, crops, and foods that will help students think about the health impacts of their diet.
4. *Garden Strategies* - these cards will be a handy reference for instructors, with tips on compost, mulch, planting, and garden maintenance.



LESSON PLAN BREAKDOWN:

- **Module # and Title:** Remember, Modules are only numbered for convenience, they are not designed to be taught in order! The Module and Title will match the module # and Title for corresponding Teacher Print Kit and Student Handout set.
- **Goals and Objectives:** A quick overview of what will be taught in the lesson and learning objectives for students.
- **Time:** Each activity within the module has an estimated time to teach the lesson. The time on the first page of the Module is the approximate time required to teach the entire module, as well as the optional and extra activities.
- **Materials:** All materials required to teach the entire module are listed on the first page in a master materials list. Individual materials lists are included for each activity throughout the module under that activities' title. Materials for the optional activity are listed separately.
 - If "Supplies from Kitchen Essentials Card," is listed, the materials listed on the Kitchen Essentials card in the Bonus Card Deck will be needed. We suggest gathering the materials listed on the card and keeping them in a tote in your classroom or garden shed for easy access.
- **Teacher Background:** This section is a quick primer on the subject matter for the teacher. This will allow the teacher to engage students in richer discussions during the lesson.
- **Opening Discussion:** This often includes a brainstorm to get students thinking creatively and building curiosity around the module's topic.
- **Activities:** Each module includes 4-5 activities which build on one another. It is important to teach these activities in the order listed. Each includes a time estimate, materials list, and step by step instructions. You can break up a module across several sessions by teaching a couple activities per session, but they do build on each other.
- **Connecting to the Garden:** Each module contains a section that will help teachers connect the content directly to the garden. Typically, these include an activity in the garden or an exercise that pushes students to make observations in their own garden.
- **Closing Discussion:** Short discussion prompts to summarize the lesson and inspire action and further learning.



ADAPTING FOR VULNERABLE STUDENTS AND THOSE WITH SPECIAL NEEDS

This curriculum aims to make it easier to reach underserved populations, including at-risk and special needs youth. To effectively target these audiences, teachers need to take intentional action to adjust their teaching style. Below is a list of strategies and tips to use in this and other agriculture and gardening educational settings.

Relate

Personalizing lesson plans and relating them to students' lived experience supports better engagement and knowledge retention.¹

- Make a connection to personal experience.
 - Be sure students know the emphasis is on sharing perspective rather than performing knowledge.² Critical thinking and conversation, rather than being correct, are the goals.
- Lessons should be relevant to real life. Throughout the curriculum, discussion questions are provided to help students make connections between food systems knowledge and their everyday life.
- Encourage dialogue among students and with instructors.²
 - Ask questions and seek clarification.
 - Redirect questions to peers.
 - Limit teacher moderation when possible.
- If sensitive topics, such as food insecurity, could trigger crises in teens' lives, consider having resource cards prepared including hotlines and local organizations that can help.
- Block out time to work in the garden with space for free-flowing conversation. Talking about life in the garden is a great way to build relationships with students. Sol Fire Farm's "Walk as If" ice breaker activity, listed below, has many great questions to spark conversation with teens.
- Use icebreakers at the beginning of a session. Icebreakers encourage participation by:
 - Creating a more relaxed environment for students.³
 - Giving students more ownership over their learning environment.³
 - Building bonds among students.³
- Sol Fire Farm's "[Walk as If](#)" ice breaker⁷ is full of great questions to ask one another. We recommend printing the questions and keeping them handy to spark conversations in the garden, or to use as introductions. Here's a sampling:
 - Who do you admire most and why?
 - How do you want to be remembered?
 - What was your dream job growing up?
- When students answer questions in a group, if the answer is not correct, find the correct parts of their answer or acknowledge why the answer makes sense before calling on another student to add or clarify the answer. Work collectively to reach the right answer.



Emphasis on Project and Sensory-Based Learning

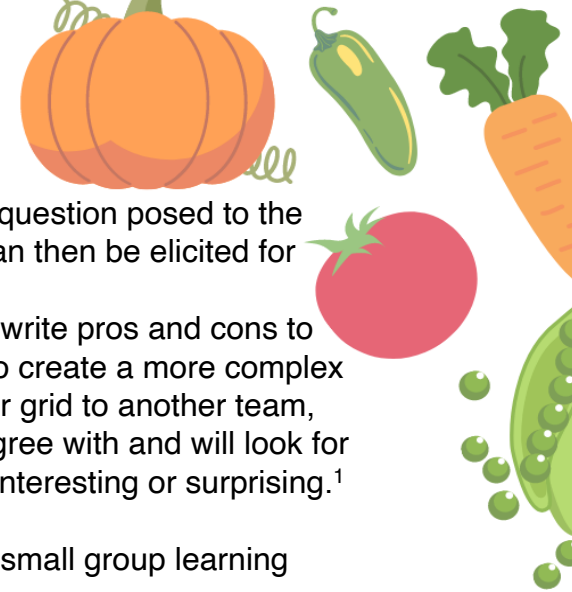
- Project based learning increases content retention, encourages complex thinking skills such as evaluation and creative thinking, and builds skills in collaboration.⁶ Project based activities are included throughout this curriculum. Look to the Connecting to the Garden section, included in each Module, for rich project-based activities.
- Ask students to create something new. When learning about food pyramids, recipes, advertisements, or neighborhood maps, ask them to create their ideal version of what they are learning about. This is a great way to encourage students to think critically about the components of the lesson and use their creativity to engage in new knowledge more deeply.
- Engage the body and brainstorm ways to use all five senses. This is a great way to accommodate many different types of learning in one classroom.⁶

Engage Community

- Engage youth mentors.
 - Youth mentors can be from the wider community or from within the group.
 - Throughout the Modules, ask students to share what they already know about a topic with the class.
 - Engage youth mentors in the community that are working or volunteering in your students' area of interest. Seeing others doing inspiring work can help foster independence among students.⁵
 - You can gauge interest for peer teaching in your group. Assign an activity for a student to teach and meet one on one with the student to coach them on how to teach the activity to the wider group. Have them practice teaching you the lesson before teaching their peers.
- Engage community members and seek opportunities for community based and service learning. Working with community members allows students to widen their professional networks, explore career paths, and increase their understanding of various cultures present in their community.⁴
- Invite experts from your community to speak about topics you are learning about in class.
- Schedule a field trip.
- Increase student engagement by doing work in the community that is creating change in the real world. Students are more motivated to learn when they see real world consequences to their actions.⁴

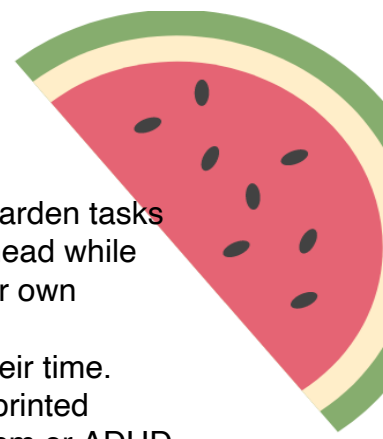
Focus on Small Group Learning

- Encourage students to work in small groups of 2-6
- Answer questions in small groups using the following methods:

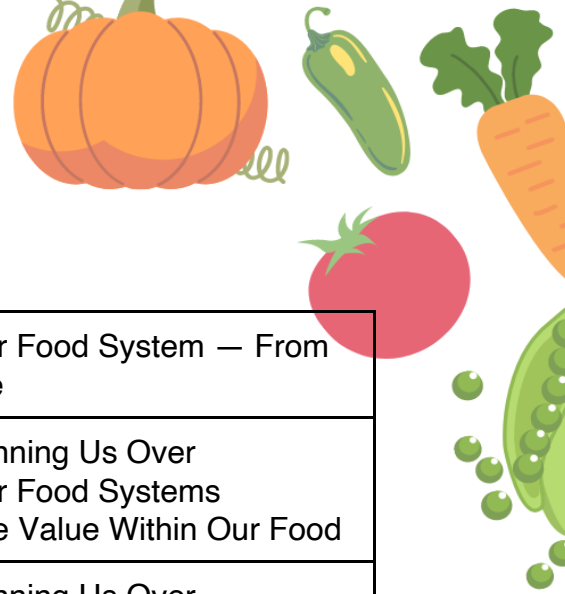
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- Turn and talk: Encourage students to answer a question posed to the class by sharing with their neighbor. Answers can then be elicited for sharing with the entire class.¹
 - Pro-Con Caveat Grids: Students independently write pros and cons to a solution for a problem. They then partner up to create a more complex pros and cons grid. Afterwards, teams pass their grid to another team, where they will share what they agree and disagree with and will look for anything on the other teams' grid that they find interesting or surprising.¹
 - Why Small Group Learning?
 - Compared to individual or competitive learning, small group learning has been proven to:
 - Increase academic performance.¹
 - In small groups, students are better at solving problems, form a deeper understanding of material, and retain information learned for longer.
 - Develop social skills.¹
 - Small group work helps those who are resistant to sharing in a larger group feel more confident to speak into a conversation.
 - In small groups, students learn to handle peers who tend to dominate conversation.
 - Groups learn to create balance of participation.
 - Students who work together are more likely to integrate among gender, ethnic, ability, class, and other groups.
 - Increase Self Esteem.¹
 - Group work increases self-esteem among participants.

Increase Accessibility for students with low literacy and learning disabilities.

- Focus on project-based learning. Projects allow learners of all abilities to approach a topic in a way that they learn best. For example, a student who processes information visually may choose to create a diagram of information, while an auditory processor may choose to create a spoken word piece.⁶
- Include natural movement in lessons where possible.⁶ Providing physical games, opportunities to approach the board, and fidget toys are all ways that students who absorb information better through movement can better process the content being taught.
- To accommodate students with lower literacy levels:
 - Use voice recorded background information for lessons or ensure that all information includes audio instead of or in addition to written text.
 - Use videos for background information.
 - Use symbols and pictures posted on the board in addition to simple written language.
- To create clear schedules that are accessible to those with ADHD or autism:

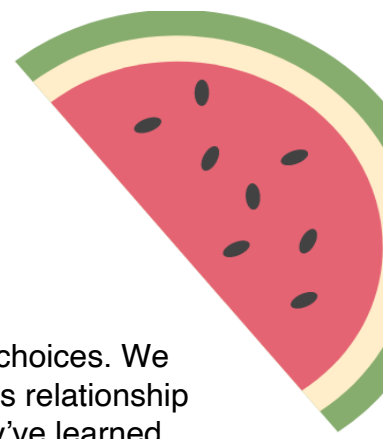


- Add video to explanations of gardening tasks. Video record garden tasks from a “first person” view by holding a camera close to your head while doing a garden task. This helps students see a task from their own perspective.
- Break down tasks into checklists to help students organize their time. Even breaking down simple tasks like planting carrots into a printed checklist can greatly increase accessibility for those with autism or ADHD. Students can use *Food Up!* Garden Strategies (in the Bonus Card Deck) to break down garden tasks into bite-sized pieces.
- Create visual schedules of a task. Having a picture representing each bite sized step of a larger task can help students comprehend expectations. The Garden Strategies cards can help.
- For non-verbal students, having choice boards available with pictures or video of garden task options can help students communicate preferences and have autonomy over their own task schedule in the garden. Students can point to what they’d like to do next or build a schedule at the beginning of the session using the choice board.
- Clarity of expectations can increase accessibility for those with autism. Having schedules that include quantity to be planted or picked (example: We will pick 20 tomatoes), or a time that an activity will be engaged for (We will pick tomatoes for 3 minutes) can help students feel secure and reduce anxiety.
- To visually represent quantities, you can build a schedule board out of Velcro. For example, if you plan to pick 10 tomatoes with a student, you can Velcro ten pictures of tomatoes to laminated cardstock. As each tomato is picked, a picture can be taken from the board. Alternatively, you can use cardboard to make ten small boxes in your harvesting crate to give the student a natural visual that when each box has a tomato in it, tomato harvesting is done.
- For students who have trouble understanding time, visual clocks can help clarify. Visual clocks use contrasting colors to signify the passage of time. Sand timers also work well. Using a picture of a visual clock next to a picture or description of a task on a schedule or checklist can further help students create a mental map around their time in the garden.



MAY WE SUGGEST...

A place to start (especially beginner teachers)	Module 2: Our Food System — From Farm to Table
For when you have many crops to harvest	Module 1: Winning Us Over Module 2: Our Food Systems Module 9: The Value Within Our Food
For a rainy day	Module 1: Winning Us Over Module 6: Animals in Agriculture
For a small group	Module 3: How to Feed a Plant
For a large group	Module 7: Heating Up
For a group of all first-time students	Module 1: Winning Us Over Module 2: Our Food Systems Module 3: How to Feed a Plant
For a new teacher or a substitute teacher	Module 1: Winning Us Over
For limited prep time	Module 5: Make It Last Module 8: Mental Health and Urban Agriculture
When you need a longer, more in-depth lesson with nuance	Module 7: Heating Up Module 9: The Value Within Our Food Module 8: Mental Health and Urban Agriculture
For participants interested in social justice	Module 4: Food Desert to Food Oasis



FOOD UP! INDEX

Module 1 - Winning Us Over - Food Marketing and Food Choice

Students will investigate strategies that advertisers use to impact our food choices. We will explore the relationship between profit and advertising, and whether this relationship can affect consumer nutritional choices. Finally, students will use what they've learned to create their own advertisement for a specific food sourced from the garden.

- Activity #1: Brand Recognition
- Activity #2: Investigating the Ad Dollar
- Activity #3: Strategy Sleuths
- Activity #4: Create Your Own Ad

Module 2 - Our Food System - From Farm to Table

Students will learn about the steps involved in taking a food product from farm to plate. We will explore how our food systems distribute wealth. Lastly, we will play a food web activity that illustrates how all steps along the food chain are connected.

- Activity #1: Fair Share Card Sort
- Activity #2: The Food Chain
- Activity #3: The Journey
- Optional Activity #4: The Food Chain of Justice & George Washington Carver
- Activity #5: The Food Web

Module 3 - How to Feed a Plant - What Our Crops Need to Grow

Students will explore the major climates of the world, and what crops grow best in each climate. Students will learn the basic needs of a plant by building a hydroponic growing column and building their own soil. Lastly, the interactions of plants in a garden will be explored through a three sisters garden tour and companion planting card game.

- Activity #1: Crops Around the World
- Activity #2: Hydroponic Growing Column
- Activity #3: Healthy Soil = Healthy Food
- Optional Activity #4: Three Sisters Garden Tour
- Optional Activity #5: Companion Planting Game

Module 4 - Food Desert to Food Oasis - Food Security and Urban Farming

Students explore what influences food choice, including geography, marketing, policy, and culture. Students will plan a menu based on the constraints of two scenarios and will explore food access in three neighborhoods in Madison, WI. To end the lesson, urban agriculture will be explored as a solution to food access barriers.

- Activity #1: Food Choice
- Activity #2: Building a Healthy Meal

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- Activity #3: Mapping Food Security
 - Activity #4: Community Thriving through Urban Agriculture

Module 5 - Make it Last - Sustainable Agriculture and Agroecology

Students learn how sustainable agriculture is related to human thriving by exploring Maslow's Hierarchy of Needs and relating these human needs to community, economy, and environment. A card game is used to explore the sustainability of different foods and their production processes. Students create a menu for a sustainable meal to summarize the lesson.

- Activity #1: Thriving Together
- Activity #2: Sustainable? You Decide!
- Activity #3: Garden Connection: Nature + Farming = Agroecology
- Activity #4: Sustainable Meals

Module 6 - Animals in Agriculture

Students explore the effect of culture, policy, and economy on meat consumption in the United States. We then explore the effect of the industrial meat industry on the economy, community, and environment. Ecological animal husbandry is addressed at the end of the lesson.

- Activity #1 - Animals, Nutrition, and Culture
- Activity #2 - The Meatrix
- Activity #3 - Meat Effect
- Garden Connection: Insects: The Gardener's Secret
- Activity #4 - Farmers and their Animals

Module 7 - Heating Up - Why A Changing Climate Matters to You

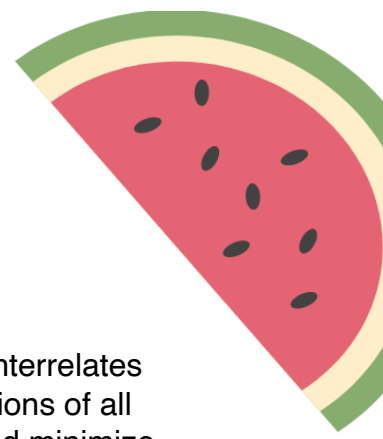
Students explore the difference between weather and climate, how greenhouse gasses drive climate change, and the relationship between agriculture, our food, and climate.

- Activity #1: What is Climate? Evaluating Your Closet
- Activity #2: What is Climate Change? Meeting the Greenhouse Gasses; A Game
- Activity #3: No Rain, No Gain – How a changing climate is stressing our farms.
- Activity #4: Is your food warming the planet?

Module 8 – Mental Health and Urban Agriculture

Students will learn about how emotions relate to nature. Students will also explore mindfulness techniques and how mental health is impacted by nature. Lastly, students will learn about healing gardens and plants.

- Activity #1: Nonviolent Communication
- Activity #2: Mindfulness in the Garden



- Activity #3: Healing Garden
- Activity #4: Healing Garden Matching Game

Module 9 – The Value Within Our Food

Students will explore the global burden of food loss and waste and how it interrelates with the food supply chain. Students will also brainstorm preventative solutions of all scales along each step of the food supply chain to maximize food yields and minimize food waste. Students will discover the hidden resources that are discarded as waste and will engage in critical thinking regarding the essential inputs required for food production as well as the extent of loss from food waste.

- Activity #1: Food Waste vs. Food Loss
- Activity #2: Discovering the True Costs
- Activity #3: Messaging the Value
- Optional Activity #4: Exploration of the Plate

MATERIALS

For ease of use, materials that are needed for **more than three lessons** have been included in the *master list* below, and hence eliminated from individual module material lists. We suggest you keep an accessible container on hand that includes, at a minimum, all the master list materials for use with each module. Complete material lists are included at the beginning of each lesson plan.

Master List:

- Scissors (multiple; at least 1 pair for every 3 students)
- Whiteboard and markers (or large sheet of paper and markers)
- Regular pens or pencils
- Blank notebook paper
- Colored markers
- Blank white paper
- Post-It notes
- Magnets

Additional Module 1 Materials:

- Module 1 Teacher Print Kit
- Module 1 Student Handouts
- Magazines (at least one per two students)

Optional:

- Array of packaged foods (Activity #1)
- Supplies listed on Kitchen Essentials, as well as access to the Nutrition Basics, and Recipe Cards (from Bonus Card Deck)

**Additional Module 2 Materials:**

- Module 2 Teacher Print Kit
- Module 2 Student Handouts

Optional:

- 4 clear jars (Activity #1)
- 200 pennies (Activity #1)
- One set of supplies from Kitchen Essentials (from Bonus Deck to each student group) (Optional Activity #4)
- Recipe Cards (from Bonus Card Deck) (Optional Activity #4)
- Packaging options (Optional Activity #4)
 - Quart or gallon size zip-lock bags
 - Pint or Quart size jars
- Sticky mailing labels (Optional Activity #4)
- Colored Sharpies (Optional Activity #4)
- Technology to show a YouTube video OR printed Teacher Print Kit (Activity #4)

Additional Module 3 Materials:

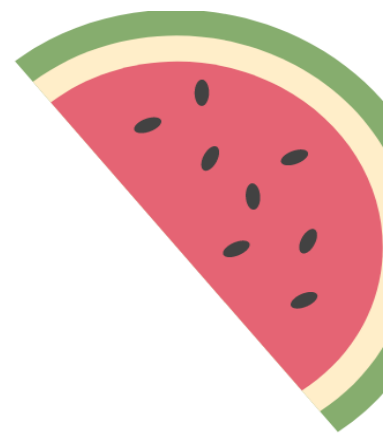
- Module 3 Teacher Print Kit
- Module 3 Student Handouts
- Tape
- String
- Empty 2-liter soda bottles with caps (1 per student Activity #1 + 4 for Activity #3)
- Cotton material (an old T-shirt works well)
- Potting soil
- Scoop for the soil
- Large mixing bowl
- Access to water
- Thick nail and hammer OR awl OR utility knife OR drill (something to poke a hole in a bottle cap with)
- A small plant or seedling for each student (herbs, like basil, work well here)
- 4 coffee filters
- Liquid measuring cup
- Dry measuring cup
- 1.5 C Sand
- 1.5 C Clay (in dry, powdery form, such as from a potter's shop or craft store)
- 1.5 C Silt
- Permanent Marker

Optional:

- Mature Three Sisters Garden for observation
- Four magnets for posting cards on the whiteboard.

Additional Module 4 Materials:

- Module 4 Teacher Print Kit



- Module 4 Student Handouts

Optional:

- Technology to show a YouTube Video

Additional Module 5 Materials:

- Module 5 Teacher Print Kit
- Module 5 Student Handouts
- Two colors of string
- Magnets (#) or tape
- Garden in any stage of growth

Additional Module 6 Materials:

- Module 6 Teacher Print Kit
- Module 6 Student Handouts
- Technology with internet access to watch a video
- Tape (or about 40 magnets)
- String

Additional Module 7 Materials:

- Module 7 Teacher Print Kit
- Module 7 Student Handouts
- Open area for a physical activity
- 2 pieces of string (~1 foot and ~7.5 feet)
 - Note: You can do this activity without string; it serves as an aid to draw a large circle for the game
- Chalk for paved spaces **or** stakes and string for grassy/field spaces
- Small bag with “What are Humans doing?” written on it (optional)
- 12 dodgeballs OR newspaper and masking tape
- Two thermometers (for taking air temperature outside)
- A clear bowl, jar, or vase and something to cover it (plastic wrap or a dark t-shirt)
- Four large pieces of paper
- Tape

Optional:


- Technology to play a YouTube video

Additional Module 8 Materials:

- Module 8 Teacher Print Kit
- Module 8 Student Handouts
- Outside environment or garden

Additional Module 9 Materials:

- Module 9 Teacher Print Kit
- Module 9 Student Handouts

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- Tape OR 24 magnets
 - 5 clear jars OR cups
 - Set of multicolor pompom balls

Optional:

- Projector and technology to play a video
- Poster boards

WHERE TO GET HELP / SUPPORT:

Likely you will want or need additional information and support for your program. We list useful references at the end of each module that were used to develop the *Food Up!* content. Additionally, we have created a reference database of related and relevant curricula, sorted by the main topic. This catalog is research-based and includes publicly available high school food curriculum searchable by topic and by organization. You can access the research database online here:

<https://thelandproject.org/additional-resources/>

ABOUT THE AUTHORS

The *Food Up!* curriculum was developed by a team of scholars and practitioners in Wisconsin, USA. They include Shelbi Jentz, Valerie Stull (PhD), Olive Dyrbye-Wright, Dejah Broaster, and Allison Errath, with support from Michael Bell (PhD) and the School for Urban Agriculture at the University of Wisconsin-Madison. The team brings extensive experience in agriculture, research, pedagogy, and nonprofit work to this project. We hope that *Food Up!* can be used to expand urban agriculture education to wider audiences who may not enroll in more formal programs. Moreover, we hope that the topics included here can introduce participants to the interconnectedness between farming, economics, wellbeing, and human health. We welcome feedback and hope that educators from all backgrounds can use (and modify) this curriculum as it suits their needs.



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