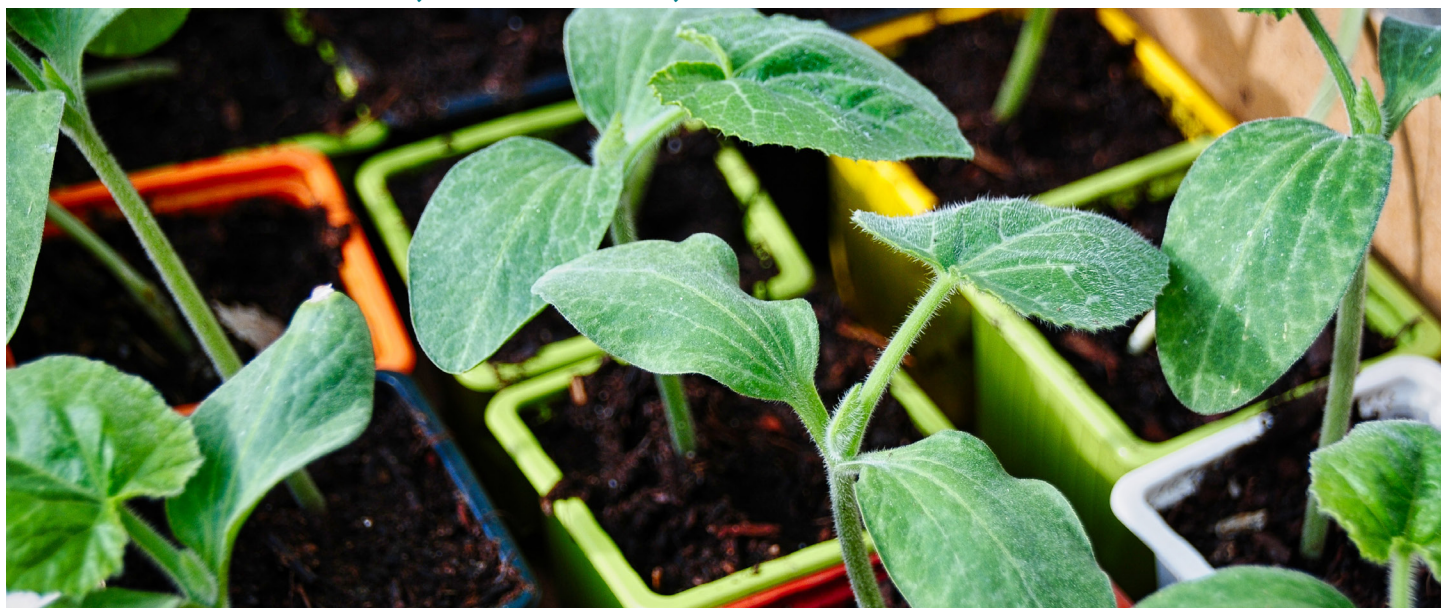


# School Garden Food Safety

## Assessment Tools, Resources, and Procedures



School gardens throughout Massachusetts have grown in number over the past ten years. As more school gardens are built, developed, and maintained, food safety within the school garden has become increasingly important. The **School Garden Food Safety: Assessment Tools, Resources, and Procedures** manual was developed by Mass. Farm to School and the Mass. Department of Agricultural Resources (MDAR) with support from a USDA Farm to School grant. The manual contains a standard framework and assessment for maintaining food safety in the school garden aligned with MDAR's Commonwealth Quality Program (CQP) (<https://www.mass.gov/service-details/commonwealth-quality-program-cqp>) for farms. Mass. Farm to School, in conjunction with MDAR, have developed a series of school garden safety webinars available to view at [www.massfarmtoschool.org](http://www.massfarmtoschool.org).

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- Cleaning & Sanitizing Log
- Training Log
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### Garden Advisory Committee

**Kate Bailey** *Massachusetts Department of Agricultural Resources*

**Kelly Cronin** *Witchcraft Heights Elementary School*

**Kendra Dawsey** *Healthy Chelsea*

**Isis Feliciano** *Community Educator and Advocate*

**Hope Guardenier** *School Sprouts Educational Gardens*

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# Background

Massachusetts Farm to School and the MDAR, along with an advisory group of school garden practitioners, have worked together to develop materials outlining school garden food safety best practices in order to minimize risks associated with serving food from school gardens.

Due to concerns around food safety and handling procedures, some schools may face impediments to serving food grown in school gardens. These impediments can be mitigated by following proper food safety and handling procedures. Allowing students to enjoy food they have grown in the school garden is not only healthy, but empowering as well, as they will be able to experience the end results of their effort and dedication.

## Why Have School Gardens?

School gardens have become very popular over the last decade, increasing the need for food safety education. Despite the recent increase in popularity, school and community gardening has been a part of our nation's history since the end of the Civil War. One of the earliest school garden programs in the United States was started in 1891 at the George Putnam School in Roxbury, MA. The 2019 USDA-Farm-to-School Census (<https://farmtoschoolcensus.fns.usda.gov/>) reports more than 12,334 edible school gardens across the nation, and 48.5% of census survey respondents in Massachusetts schools reported having a school garden.

School gardens enrich the lives of the students, staff, and community members who explore and experience them. Dedicated spaces to grow food on school property (whether in raised beds, directly in the ground, or indoors) create an accessible environment to explore many academic areas, and even possibly inspire a career in agriculture. Gardens also serve as a place to reflect on nutrition, food justice, food disparities, and social justice. They can also provide social-emotional learning opportunities.

Food safety at every step of the gardening process is vital. School gardens present an incomparable opportunity to educate students, staff, and community members about food safety. Once proper precautions are taken, everyone can safely enjoy food grown within the garden.

Massachusetts has one of the highest concentrations of school gardens in the Northeast region, and has the opportunity to pave the way for school garden food safety and continue to support garden and farm to school education for generations to come. This document provides tools to conduct a comprehensive produce safety assessment and recommends best practices for keeping school gardens safe and productive. Within every school garden is the opportunity for a nutritious meal prepared from fresh produce that was grown, raised, and handled safely in the school garden space.

## School Garden Food Safety Checklist

The School Garden Food Safety Checklist and Appendix have been developed to support school garden programs by providing resources needed to ensure best practices are being followed. The checklist and related appendix are meant to be used as a self-audit. The checklist is divided into categories. Please be aware that not all aspects of the checklist will be applicable for every school garden. The School Garden Food Safety checklist, best practice documents, signage, and record keeping logs are print-ready.



# School Garden Food Safety Checklist

Checklist Completed By (Name & Title):

Name & Address of Institution:

Date Completed:

*Please see the appendix for detailed explanations of each question.*

## Section I: School Garden Food Safety Plan & Training

	Yes	No	N/A	Comments
<b>1.1</b> Is there a written School Garden Food Safety Plan for the garden that includes all of the garden's protocols and best practices for staff and students?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>1.2</b> Is there a written Food Safety Training Policy in place for staff, volunteers, and students who use the garden, including training schedules, multi-lingual support, and training curriculums?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>1.3</b> Is there a designated person who will act as the garden's Food Safety Manager?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>1.4</b> Has the garden's Food Safety Manager attended a course addressing food safety in the school garden?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>1.5</b> Has the garden's Food Safety Manager conducted training for garden staff before their first visit to the garden, annually thereafter, and as needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>1.6</b> Has the garden's Food Safety Manager conducted training for students before their first visit to the garden, annually thereafter, and as needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

# School Garden Food Safety Checklist (Pg. 2)

## Section II: Restrooms and Hygiene

	Yes	No	N/A	Comments
<b>2.1</b> Does the garden have hygiene requirements & instructions that are visibly displayed and, if applicable, posted in other languages spoken in the garden?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>2.2</b> Do all staff, students, and visitors have access to restrooms with potable water, soap, paper towels, and trash cans?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>2.3</b> Are toilet facilities used by garden staff, visitors, and students clean and regularly maintained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>2.4</b> Do garden staff, visitors, and students wash their hands thoroughly before harvesting food?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>2.5</b> If gloves are worn when handling produce, are they clean, intact, and not contaminated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>2.6</b> Are people with exposed cuts, sores, or lesions restricted from handling produce and from touching food contact surfaces?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>2.7</b> Are people who show signs of illness restricted from handling produce and from touching food contact surfaces?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



# School Garden Food Safety Checklist (Pg. 3)

## Section III: Soil & Compost

	Yes	No	N/A	Comments
<b>3.1</b> Is the soil free of lead, arsenic, other heavy metals, and contaminants?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>3.2</b> If soil amendments are used that have NOT been treated to eliminate pathogens, are they applied prior to 120 days of harvest for produce that has direct soil contact and 90 days of harvest for produce with no direct soil contact?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>3.3</b> If soil has been amended, are there records in place that indicate the type and time of application of soil amendments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>3.4</b> If soil amendments are used, are they stored properly, away from produce harvesting, packing and storage locations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>3.5</b> If compost is produced and used in the garden, does it consist of ONLY vegetative material (no manure or animal products), and is it protected from vermin and other animals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>3.6</b> If the compost is produced off-site, is there documentation that the compost has met Process to Further Reduce Pathogens standards?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## Section IV: Water & Irrigation

<b>4.1</b> Is municipal water used?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>4.2</b> If municipal water is not used, is the water that is used tested for generic E.coli?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

# School Garden Food Safety Checklist (Pg. 4)

## Section V: Animals

	Yes	No	N/A	Comments
<b>5.1</b> If you have farm animals, is signage posted instructing staff, visitors, and students to wash their hands after touching the animals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>5.2</b> Are farm animals located in a way to minimize the risk of microbial contamination of the school garden? (Ex. run-off or dust from the animal areas isn't contaminating the produce.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>5.3</b> Is manure stored and handled in a way that minimizes the risk of microbial contamination to produce? (Ex. run-off or dust from the manure pile isn't contaminating the produce.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>5.4</b> Are pets restricted from entering the garden?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>5.5</b> Are signs posted communicating that no pets are allowed in the garden area (including harvesting & packing areas)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>5.6</b> Is produce that has been contaminated by animal feces properly disposed of?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>5.7</b> Are fences and traps set up to prevent wildlife from entering the garden?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

# School Garden Food Safety Checklist (Pg. 5)

## Section VI: Garden Location

	Yes	No	N/A	Comments
<b>6.1</b> Are the growing areas of the garden positioned so that they are not in the path of runoff from parking lots, roads, or other sources of potential contamination? <hr/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>6.2</b> Are raised beds, containers, stakes, or trellises made from non-toxic/non-leaching/non-pressure treated materials? <hr/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>6.3</b> Is the garden located away from any lead painted surfaces? <hr/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>6.4</b> Are chemicals, including fertilizers, paints, lubricants, cleaning supplies, etc. stored securely to prevent contamination to the garden or to the harvested food? <hr/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>6.5</b> Is the garden infrastructure designed and constructed in a way that prevents produce contamination?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

# School Garden Food Safety Checklist (Pg. 6)

## Section VII: Harvest & Post-Harvest

	Yes	No	N/A	Comments
<b>7.1</b> Is there a policy that indicates visibly contaminated, adulterated, damaged, or decayed produce is not harvested or is culled?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>7.2</b> Are harvest bins and containers specifically identified and used only for harvesting?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>7.3</b> Are harvest bins and containers properly used, stored, and inspected to minimize the risk of contamination?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>7.4</b> Are there written procedures that dictate when and how harvest bins & containers are cleaned and sanitized?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>7.5</b> Are there written procedures that dictate when and how food contact surfaces, equipment, and tools are inspected, cleaned, and sanitized?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

## Section VIII: Food Packaging

<b>8.1</b> Are the food packaging materials approved for food contact use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>8.2</b> Is packaging maintained and stored in a way that minimizes the risk of contamination?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>8.3</b> If produce is being sold or donated, is the name and address of the school garden prominently displayed on all food package labeling or at the point(s) of sale?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



# Appendix: School Garden Food Safety Checklist

## Section I: School Garden Food Safety Plan & Training

### **1.1 Is there a written School Garden Food Safety Plan for the garden that includes all of the garden's protocols and best practices for staff and students?**

Anyone who is operating a school garden should be well versed in garden food safety. A written Garden Food Safety Plan will serve as a guide concerning how to implement food safety practices that are specific to your school garden. Use the checklists and record keeping logs in this document to support your School Garden Food Safety Plan. The School Garden Food Safety checklist, best practice documents, signage, and record keeping logs are print-ready. School Garden Food Safety webinars using this material to provide training and support will be available at <https://www.massfarmtoschool.org/>

### **1.2 Is there a written Food Safety Training Policy in place for staff, volunteers, and students who use the garden, including training schedules, multi-lingual support, and training curriculum?**

It is important that everyone who is going to prepare and serve food from the school garden is well versed in food safety. All people who use the garden must understand the food safety guidelines and protocols outlined in the Garden Food Safety Plan. Staff and students using the garden should receive garden food safety training before their first visit to the garden and at least once per academic year. It is a good idea to offer training in the fall and again in the spring for anyone using the school garden to ensure that everyone understands the safety protocols.

Garden food safety training should be specific to your garden and include:

- Basic principles of food hygiene and food safety
- The importance of personal health and hygiene (for example, proper hand-washing)
- How and when to clean and sanitize equipment, surfaces, and harvest bins
- The identification of produce that may not be fit for consumption
- Any other food safety protocols specific to your garden

Use the resources provided in this manual. Remember to translate the materials into the languages that will best support your entire school population.

### **1.3 Is there a designated person who will act as the garden's Food Safety Manager?**

If produce from the school garden will be eaten, designate a person who will oversee food safety. This could be a member of the school staff, a volunteer, or a garden specialist. This person is responsible for making sure everyone using the garden has access to the food safety protocols, and that the protocols are being followed. The Food Safety Manager should offer training for everyone (staff, students, and volunteers), who will be using the school garden. They should be familiar with the materials and resources in the Garden Food Safety Plan and make them readily available.

## Appendix: School Garden Food Safety Checklist (Pg. 2)

### 1.4 Has the garden's Food Safety Manager attended a course addressing food safety in the school garden?

The Produce Safety Alliance (PSA) Grower Training (<https://www.mass.gov/info-details/produce-safety-education-technical-assistance>) is a required course for school gardens who wish to become certified by the Commonwealth Quality Program (CQP) (<https://www.mass.gov/service-details/commonwealth-quality-program-cqp>). CQP is a voluntary food safety audit program provided by the Massachusetts Department of Agricultural Resources (MDAR)'s Produce Safety Program. (See the opening statement of this document for more information.) While most school gardens will not need a third-party food safety audit, some school gardens might be required by their cafeteria or other buyers to provide a food safety certificate in order for the cafeteria or buyer to use or purchase produce from the garden. Even if you do not need a CQP Audit, it is highly recommended that the garden's Food Safety Manager attend a course addressing food safety in the garden. This could be the PSA Grower Training, or another training that covers produce safety.

#### *Food Safety in the School Garden Resources:*

- UMass Amherst // Food Safety Resources (<https://ag.umass.edu/resources/food-safety>)
- UMass Amherst // Food Safety Resources for Agriculture & Commercial Horticulture (<https://ag.umass.edu/resources/agriculture-resources/business-resources-for-farmers/food-safety>)
- UMass Extension // Food Safety: From Farm to Garden to Preschool (<https://ag.umass.edu/nutrition/outreach-project/food-safety-from-farm-garden-to-preschool-program>)

### 1.5 Has the garden's Food Safety Manager conducted training for garden staff before their first visit to the garden, annually thereafter, and as needed?

The designated Food Safety Manager should make sure that all staff using the school garden have been trained in the food safety guidelines and protocols specific to the garden, as outlined in the Garden Food Safety Training Policy (*see question 1.2*). A training log will support the manager in making sure that training is happening at regular intervals.

In addition to the Food Safety Training Policy, other training resources in this document include:  
Best Practices: Staff Checklist // Student Garden Guidelines // Training Log

### 1.6 Has the garden's Food Safety Manager conducted training for students before their first visit to the garden, annually thereafter, and as needed?

The designated Food Safety Manager should make sure that all students using the school garden have been trained in the food safety guidelines and protocols specific to the garden, as outlined in the Garden Food Safety Training Policy (*see question 1.2*). A training log will support the manager in making sure that training is happening at regular intervals.

In addition to the Food Safety Training Policy, other training resources in this document include:  
Best Practices: Student Checklist // Student Garden Guidelines // Training Log

## *Appendix: School Garden Food Safety Checklist (Pg. 3)*

### Section II: Restrooms and Hygiene

**2.1 Does the garden have hygiene requirements & instructions that are visibly displayed and, if applicable, posted in other languages spoken in the garden?**

Post the best practices around hygiene in the school garden and translate into any languages that will best represent your community. Use the signage included in this manual or create your own.

**2.2 Do all staff, students, and visitors have access to restrooms with potable water, soap, paper towels, and trash cans?**

All staff, students, and visitors to the garden should have access to restrooms with potable water, soap, paper towels and trash cans.

**2.3 Are toilet facilities used by garden staff, visitors, and students clean and regularly maintained?**

All restroom facilities should be clean, stocked and maintained on a regular basis.

**2.4 Do garden staff, visitors, and students wash their hands thoroughly before harvesting food?**

Handwashing is essential to preventing foodborne illness, as hands are the most commonly used utensils in food preparation. Washing hands with soap and water is the best way to reduce the number of microorganisms on them. Wash hands after using the toilet, after touching the garbage or compost, before and after treating a cut or wound, before putting on gloves and whenever hands might be dirty. Before harvesting from the garden, visitors and students should wash their hands thoroughly with soap and water. While harvesting, visitors and students should rewash their hands after taking breaks, eating or drinking, using the restroom, sneezing, coughing, touching compost or trash, or anytime hands become dirty or potentially contaminated.

If running water is not available, bring a jug of potable water, a roll of paper towels, and soap. Alcohol-based hand sanitizers can reduce the number of microorganisms on hands, but sanitizers do not eliminate all types of microorganisms or reduce norovirus, one of the most common foodborne illness causing viruses.

**2.5 If gloves are worn when handling produce, are they clean, intact and not contaminated?**

If gloves are being worn, make sure they are clean so they do not contaminate the food. If you cannot bring water, soap, and paper towels to the garden, gardeners should wear disposable, single-use gloves while harvesting vegetables for consumption. Traditional garden gloves are acceptable for working in the garden, but they do not prevent the spread of pathogens when harvesting.

## Appendix: School Garden Food Safety Checklist (Pg. 4)

### 2.6 Are people with exposed cuts, sores, or lesions restricted from handling produce and from touching food contact surfaces?

Persons with open sores or wounds should be restricted from handling produce and touching food contact surfaces. If staff, students, or visitors to the garden wish to assist in the garden, the garden supervisor should find the person an alternative job that does not require handling produce or touching food contact surfaces. Alternatively, if the exposed cuts, sores, or lesions can be addressed by administering first aid, these individuals may work with produce safely. The wound(s) must be covered, the person must wash their hands, and then wear disposable gloves before working with produce.

First aid kits should be available in the garden and restocked as necessary. If any blood or bodily fluids have contaminated produce, the contaminated produce should be disposed of immediately in a safe manner. If any blood or bodily fluids have contaminated food contact surfaces, tools, equipment, or any other potential sources of cross-contamination those areas and items will need to be cleaned and sanitized. A policy addressing what to do in this type of event should be created, and a Standard Operating Procedure (SOP) for cleaning and sanitizing should be written.

### 2.7 Are people who show signs of illness restricted from handling produce and from touching food contact surfaces?

Any staff, students, or visitors who show signs of illness should be restricted from handling produce and touching food contact surfaces. The garden supervisor should be notified if anyone in the garden is feeling unwell. The supervisor can find an alternative job in the garden that doesn't require handling produce or touching food contact surfaces, or recommend the person go home. If any produce is suspected to be contaminated by the person's illness, the produce should be disposed of in a safe manner. A record should be kept for any injury or illness that may have been a source of produce contamination, in the rare case that an outbreak occurs.

## Section III: Soil & Compost

### 3.1 Is the soil free of lead, arsenic, other heavy metals and contaminants?

Testing your soil, ideally in the spring before planting, will help support healthy plants and crops. Soil testing will tell you the soil's acidity levels and the nutrients your soil needs to grow plants. Soil tests are also necessary to make sure lead, arsenic, and other heavy metal contaminants are not present in the garden as they can transfer to the garden crops. You can send soil samples out to be tested or test the soil yourself. For older students, soil testing could be part of an engaging curriculum unit.

#### *Soil Testing Resources:*

- UMass Center for Agriculture, Food, and the Environment // Soil Testing Information  
<https://ag.umass.edu/greenhouse-floriculture/greenhouse-best-management-practices-bmp-manual/soil-testing>
- UMass // Get a Soil Test  
<https://ag.umass.edu/services/soil-plant-nutrient-testing-laboratory/ordering-information-forms>

## Appendix: School Garden Food Safety Checklist (Pg. 5)

### Soil Testing Resources, cont. :

- Mass.gov // Determining your Soil's Nutrient Needs  
<https://www.mass.gov/service-details/determining-your-soils-nutrient-needs>
- Soil Testing Kits  
[http://www.lusterleaf.com/nav/soil\\_test.html](http://www.lusterleaf.com/nav/soil_test.html)  
<https://lamotte.com/products/soil/multi-parameter-test-kits/model-el-garden-kit-5679-02>

If you have not yet established a school garden, it is a good idea to test the soil before committing to a site to make sure the garden will be located in an area with healthy soil.

If you are using raised beds and are purchasing soil, make sure the soil has been tested. Remember to use non-toxic, non-leaching materials for raised bed containers such as unpainted and untreated wood, stone, bricks, logs, and unpainted concrete blocks. Avoid using pressure-treated wood, used tires, or plastics that can leach chemicals into your soil.

**3.2 If soil amendments are used that have NOT been treated to eliminate pathogens, are they applied prior to 120 days of harvest for produce that has direct soil contact and 90 days of harvest for produce with no direct soil contact?**

Soil amendments are added to soil to improve the soil quality and provide a better environment for plant roots. You can add amendments to improve the soil's structure and texture, build nutrients, improve water retention or drainage, and adjust the pH level. Most plants prefer to grow in soil with a neutral pH, between 6.5-7.5. Organic matter, such as compost, improves every aspect of soil. It helps with texture, drainage, water retention, nutrient levels, beneficial microbes, and bacteria.

It is possible that soil amendments such as vegetative waste, compost or raw manure that have not been adequately processed to eliminate pathogens could introduce a food safety risk into the garden. Examples of scientifically valid controlled biological processes include static composting that maintains aerobic conditions at a minimum of 131 for 3 consecutive days and is followed by adequate curing; and turned composting that maintains aerobic conditions at a minimum of 131 for 15 days (which do not have to be consecutive), with a minimum of 5 turnings, and is followed by adequate curing, allowing compost that has completed the hot phase of composting to finish the composting process.

If you are going to use any soil amendments that have not been treated adequately to eliminate pathogens, they will need to be applied 120 days before harvest for produce that has direct contact with the soil and 90 days before harvest for produce with no direct soil contact, in order to allow time for pathogens to die off before the produce can be safely harvested and eaten.

### Composting and Soil Amendments Resources:

- Composting in the School Garden (Massachusetts Agriculture in the Classroom)  
[https://www.massfarmtoschool.org/wp-content/uploads/2022/02/unit4\\_CompostingintheSchoolGarden.pdf](https://www.massfarmtoschool.org/wp-content/uploads/2022/02/unit4_CompostingintheSchoolGarden.pdf)
- U of Maryland Extension // Organic Matter and Soil Amendments  
<https://extension.umd.edu/resource/organic-matter-and-soil-amendments>

## Appendix: School Garden Food Safety Checklist (Pg. 5)

### Composting and Soil Amendments Resources, cont.:

- UMass Extension // Compost: Production, Analysis & Regulation  
<https://ag.umass.edu/vegetable/fact-sheets/compost-production-analysis-regulation>
- UMass Extension // Fall Soil Amendment  
<https://ag.umass.edu/home-lawn-garden/fact-sheets/fall-soil-amendment>
- Rodale Institute // 20 Ways to Boost Soil Fertility  
<https://rodaleinstitute.org/blog/20-ways-to-boost-soil-fertility/>

### **3.3** If soil has been amended, are there records in place that indicate the type and time of application of soil amendments?

Remember to follow all instructions posted on the packaging, and keep careful track of any amendments by recording when and where amendments were applied. Soil amendments, even if organic, should be used according to directions and applied sparingly.

### **3.4** If soil amendments are used, are they stored properly, away from produce harvesting, packing and storage locations?

All amendments should be stored safely away from children. They should also be kept away from any materials used for harvesting or packing of produce.

### **3.5** If compost is produced and used in the garden, does it consist of ONLY vegetative material (no manure or animal products), and is it protected from vermin and other animals?

Compost is decomposed, organic material that can be added to soil to help plants grow. Compost requires brown material for carbon (such as dead leaves, twigs, pine needles), green material for nitrogen (such as grass clippings and fruit and vegetable scraps) and water to break the material down. Compost piles can also attract pests and potentially introduce harmful bacteria to a garden if the compost system is not done properly and monitored carefully.

Use leaves, grass, old vegetables and vegetation from the garden. Do not use any animal waste, including pet waste, meat scraps, or dairy product waste in your compost bin. Air is a necessary part of the decomposition in a compost pile. If there is no oxygen, the microbes die and the pile takes longer to decompose. This can lead to smell, pests, and the growth of bacteria. Your compost turning schedule will be dependent upon many variables (i.e. size and structure of the compost pile), however the standard is to turn the pile every 3-7 days. When making your own compost, you must ensure that it reaches a temperature of 130°F to be safe to use in the garden. Compost thermometers can be purchased online. Clear records should be kept recording temperature & pile turning to ensure the composting process has been done properly to reduce pathogens. Everyone should wear gloves and wash their hands after handling compost. You will find a Compost Log within this manual.



## Appendix: School Garden Food Safety Checklist (Pg. 7)

### Composting Resources:

- Mass. Agriculture in the Classroom // Composting in the School Garden  
[https://www.massfarmtoschool.org/wp-content/uploads/2022/02/unit4\\_CompostingintheSchoolGarden.pdf](https://www.massfarmtoschool.org/wp-content/uploads/2022/02/unit4_CompostingintheSchoolGarden.pdf)
- U.S. Environmental Protection Agency // Composting At Home  
<https://www.epa.gov/recycle/composting-home>
- Natural Resources Defense Council // Composting 101  
<https://www.nrdc.org/stories/composting-101>
- Green Mountain Farm to School // Guide to Starting a School Compost Program  
<https://www.massfarmtoschool.org/wp-content/uploads/2022/02/GrnMtnF2S-Staring-a-School-Compost-Program.pdf>
- Gardening Know How // Turning Compost: How to Aerate a Compost Pile  
<https://www.massfarmtoschool.org/wp-content/uploads/2022/02/GardeningKnowHow-TurningCompost.pdf>

### **3.6** If the compost is produced off-site, is there documentation that the compost has met Process to Further Reduce Pathogens standards?

You can purchase bagged compost or buy it in bulk, however if your school is purchasing compost, first confirm that the proper composting processes are being followed.

## Section IV: Water & Irrigation

### **4.1** Is municipal water used?

If your garden has access to municipal water for irrigation, the municipal water will be monitored by the municipality and should be safe for school gardens.

### **4.2** If municipal water is not used, is the water that is used tested for generic E.coli?

If you are using well water, it should be tested for generic E.Coli two times per year. If you are using water that is open to the environment, like stream or pond water or a water collection system, the water should be tested for generic E.Coli three times per year. If you are collecting rainwater, remember to clean and sanitize water collection systems regularly.

*Where can you get your water tested?*

The Northeast Center to Advance Food Safety (<https://www.uvm.edu/extension/necafs>) keeps an updated list and map of water testing labs across the country. Find the nearest water testing lab to you by visiting, <https://foodsafetyclearinghouse.org/resources/national-water-quality-testing-labs-map>. Your nearest lab may be in a neighboring state. Visit your closest lab's website (or call) for instructions on how to obtain sterile bottles for water collection and how to collect your sample.

Watering at the base of plants or using a drip irrigation system is the best way to conserve water, and reduce splashing on the edible portion of the plant, minimizing risk of bacterial contamination.

# Appendix: School Garden Food Safety Checklist (Pg. 8)

## Section V: Animals

It's wonderful for kids to be able to interact with and take care of farm animals, however some precautions need to be taken so that animal manure doesn't become a source of contamination in the garden. Animal manure can contain E.Coli, salmonella or other microbes that can cause illness in humans.

### **5.1 If you have farm animals, is signage posted instructing staff, visitors, and students to wash their hands after touching the animals?**

If you have farm animals, post signage instructing staff, visitors and students to wash their hands after touching the animals. A printable sign can be found in this document.

### **5.2 Are farm animals located in a way to minimize the risk of microbial contamination of the school garden (i.e. run-off or dust from the animal areas isn't contaminating the produce)?**

Do not locate your garden directly next to animal housing. By positioning your garden away from animals you will minimize the risk of microbial contamination. Manure from the animal areas can contaminate produce if the manure dries out and the dust is carried by the wind into the vegetable garden or if water washes manure into the garden. Run-off can be controlled by ditches, mounds, diversion berms, or vegetative buffer strips.

### **5.3 Is manure stored and handled in a way that minimizes the risk of microbial contamination to produce?**

Manure storage areas (ex. barn muckings or compost piles that contain manure) should not be located directly next to the vegetable garden, because run-off or dust from the piles can contaminate the produce. Also, staff or students who are working in the animal areas should be aware of not tracking manure from the animal areas into the garden. Standard Operating Procedures (SOPs) for animal care and manure handling should be created and followed in order to limit contamination. SOPs should address the usage and cleaning of tools, clothing, footwear and equipment, and how they will be cleaned and/or changed if they will be used in both animal and produce areas.

### **5.4 Are pets restricted from entering the garden?**

It is best practice to keep domestic pets out of the garden as they can damage the garden and contaminate the crops. Pets should also be kept out of any areas used for produce washing, storage or food prep.

### **5.5 Are signs posted communicating that no pets are allowed in the garden area (including harvesting & packing areas)?**

Pets can be a source of contamination to the garden and any washing, packing, and storage areas. Post a sign to keep dogs and other domesticated pets out of the garden. A printable sign can be found in this document.

## *Appendix: School Garden Food Safety Checklist (Pg. 9)*

### **5.6** Is produce that has been contaminated by animal feces properly disposed of?

Any produce that is contaminated by animal feces or shows other signs of animal contamination should not be harvested for human consumption. When harvesting produce, everyone should be aware of any bird droppings or other animal feces on or next to the produce and that produce should not be harvested. Feces cannot be washed off! Likewise, any produce that has fallen on the ground (that didn't grow there) shouldn't be harvested. Harvested produce should be placed directly into a clean harvest bin and not placed on the ground in any areas where people walk.

### **5.7** Are fences and traps set up to prevent wildlife from entering the garden?

Without some type of fencing, it is impossible to keep all animals out of the garden, and even with a fence it can still be difficult! Animals can not only destroy your garden crops but can also contaminate crops with animal droppings which can be a source of bacteria, parasites, and viruses.

- Chicken wire can help keep rodents away, and burying the wire a few inches deep discourages animals from burrowing underneath.
- Keeping the grass and vegetation mowed around the garden helps prevent rodents from nesting and hiding in overgrown areas.
- Do not hang bird feeders near your garden because bird seed can attract both birds & other animals and bird droppings can carry bacteria.

## Section VI: Garden Location

### **6.1** Are the growing areas of the garden positioned so that they are not in the path of runoff from parking lots, roads or other sources of potential contamination?

If you are creating a new site for a school garden, the plot should be positioned so that it is away from possible contamination such as garbage, utilities, animals, water runoff, flooding, septic systems, and any lead painted surfaces. A level surface will prevent soil erosion and keep nutrients in the soil.

### **6.2** Are raised beds, containers, stakes or trellises made from non-toxic/non-leaching/non-pressure treated materials?

If you use raised beds, remember to use non-toxic, non-leaching materials for containers, such as unpainted and untreated wood, stone, bricks, logs, and unpainted concrete blocks. Avoid pressure-treated wood, used tires or single-use plastics that can leach chemicals into the soil.

### **6.3** Is the garden positioned away from any lead painted surfaces?

The garden should not be planted near lead painted surfaces which can leach into garden soil, contaminate crops, and be harmful to health.

## *Appendix: School Garden Food Safety Checklist (Pg. 10)*

### **6.4** Are chemicals, including fertilizers, paints, lubricants, cleaning supplies, etc. stored securely to prevent contamination to the garden or to the harvested food?

Any chemicals used in the garden area should be stored in a locked shed or cabinet. Proper storage avoids accidental or intentional chemical contamination of the garden.

### **6.5** Is the garden infrastructure designed and constructed in a way that prevents produce contamination?

- Garden infrastructure, including washing, packing, storage areas and coolers, should be designed in a way that prevents produce contamination.
- Windows, doors and roofs of fully enclosed buildings should be constructed in a way that prevents leaks and entry of dirt, dust, debris and pests.
- Materials and surfaces that contact produce should be able to be cleaned and sanitized.
- Proper drainage will ensure that pooled water is not left standing for long periods of time.
- If there are any multi-use spaces, other activities must be conducted in a way that protects produce from cross-contamination.
- Be mindful of potential sources of glass contamination (i.e. broken equipment or light bulbs).
- The storage and disposal of trash, culls, and compost must be done in a way that minimizes the potential for being an attractant to or harboring of pests, and protects against the contamination of produce and food contact surfaces.
- Disposal of sewage from restrooms or portable toilets must not be a source of cross contamination.

#### *Additional Resources:*

- University of Vermont Extension // Planning an Efficient and Safe Wash/Pack Area  
<https://blog.uvm.edu/cwcallah/2020/02/09/planning-an-efficient-and-safe-wash-pack-area/>
- University of Vermont Extension Ag Engineering Blog  
<https://blog.uvm.edu/cwcallah/>

## Section VII: Harvest & Post-Harvest

### **7.1** Is there a policy that indicates visibly contaminated, adulterated, damaged, or decayed produce is not harvested or is culled?

Before harvesting fruits or vegetables, the produce and the area where it's grown in should be looked over. Produce that is damaged, decayed or visibly contaminated by animal feces, chemicals or any other substance must not be harvested. Produce that has dropped to the ground (such as apples or tomatoes that were not originally growing on the ground) is included here, as it may have been damaged or contaminated upon impact and is more likely to harbor bacteria.

## Appendix: School Garden Food Safety Checklist (Pg. 11)

### 7.2 Does the garden have bins & containers that are specifically identified and used for harvesting?

Bins & containers should be designated specifically for harvesting crops to avoid potential for cross contamination. Do not use harvest bins and containers for any purpose beyond harvesting crops. Use different containers for other garden related purposes (i.e. carrying tools, weeding, disposing of rotten crops, etc). Harvest bins and containers should be able to be easily cleaned and sanitized.

- University of Vermont Extension // Bins, Buckets, Baskets and Totes  
<https://blog.uvm.edu/cwcallah/2018/11/14/bins-buckets-baskets-totes/>

### 7.3 Are harvest bins and containers properly used, stored, and inspected to minimize the risk of contamination?

Harvest bins and containers must be stored in a place where they will not become contaminated by unwanted dirt, chemicals, bird droppings or other contaminants and won't become a home for rodents. Bins should be inspected before use to make sure they are clean.

### 7.4 Are there written procedures that dictate when and how harvest bins and containers are cleaned and sanitized?

Harvest containers must be made of non-porous, food-grade material. They must be easily cleanable. Do not use wooden boxes, unwashed buckets, or reused plastic bags to harvest produce. All containers and tools that come in contact with produce must be washed and sanitized. A Standard Operating Procedure (SOP) should be written that defines how often harvest bins are cleaned and sanitized, what cleaners and sanitizers are used, and how they should be cleaned. Read all cleaning and sanitizing labels carefully to make sure they are approved for use on food contact surfaces. Visit Cornell University Institute for Food Safety's Cleaning Sanitizing and Hygienic Design website for more information about cleaning vs. sanitizing, how to write an SOP, record keeping, and more.

- Cornell University, Institute for Food Safety // Cleaning, Sanitizing and Hygienic Design  
<https://instituteforfoodsafety.cornell.edu/resources/cleaning-sanitizing-and-hygienic-design>
- UMass Amherst Extension // Harvest Bin Cleaning and Sanitizing Video  
<https://youtu.be/WBynfFMofVo>

### 7.5 Are there written procedures that dictate when and how food contact surfaces, equipment, and tools are inspected, cleaned, and sanitized?

In school gardens, it is very common (and rewarding!) for students to eat the fruits and vegetables they have grown. In order for students to enjoy the "fruits" of their labor all produce must be washed and/or processed in a space with a clean and sanitized work surface and utensils. The people handling the food should wash their hands prior to working with the produce. SOPs should be written for the cleaning and sanitizing of the food contact surfaces, equipment, and tools that are used in the garden. The SOP should include how often surfaces and tools are cleaned and sanitized, what cleaners and sanitizers are used, and how they should be cleaned. See the Cleaning, Sanitizing and Hygienic Design link in the previous question for more information about cleaning vs. sanitizing, how to write an SOP, record keeping, and more.

- University of Minnesota Extension // Cleaning and Sanitizing Food Contact Surfaces  
<https://www.massfarmtoschool.org/wp-content/uploads/2022/02/UnivofMNExt-CleaningSanitizing.pdf>
- Produce Safety Alliance // Cleaning vs. Sanitizing Fact Sheet  
<https://www.massfarmtoschool.org/wp-content/uploads/2022/02/ProduceSafetyAlliance-CleaningSanitizing.pdf>

## *Appendix: School Garden Food Safety Checklist (Pg. 12)*

### Section VIII: Food Packaging

#### **8.1 Are the food packaging materials approved for food contact use?**

If you are distributing produce to families, staff, or the school cafeteria, you will need to use food packaging. If food packaging is constructed from a material that is considered single use and not cleanable or easily sanitized (ex. cardboard, wax boxes, plastic bags), it must be new and not re-used. Packaging material must be an approved food contact surface. If food packaging material is reused, adequate steps must be taken to ensure that the food contact surfaces are clean, such as using a clean liner.

#### **8.2 Is packaging maintained and stored in a way that minimizes the risk of contamination?**

Similar to harvest bins, food packaging materials must be stored in a place where they will not become contaminated by unwanted dirt, chemicals, bird droppings or other contaminants and won't become a home for rodents. Food packaging materials should be inspected before use to make sure they are clean.

#### **8.3 If produce is being sold or donated, is the name and address of the school garden prominently displayed on any food package labeling or at the point(s) of sale?**

If your garden produce is being sold or donated, the name and complete address of the school garden should be prominently displayed on any food package labeling.



# Do You Need More Assistance?

A school garden self-audit will be sufficient for most schools. However, some school gardens might be required by their cafeteria or other buyers to provide a food safety certificate (including a third-party audit) in order for the cafeteria or buyer to purchase and use produce from the garden. Upon completion of a successful audit, the school garden will receive a certificate verifying compliance with best management practices and good agricultural practices based on the standards of the Commonwealth Quality Program (CQP) (<https://www.mass.gov/service-details/commonwealth-quality-program-cqp>). This certificate can be presented to your cafeteria, buyers, and customers as proof of meeting third-party audit requirements for ensuring safe produce.

For schools in need of a third-party audit, the MDAR's CQP offers free voluntary food safety audits. The CQP was created to assist Massachusetts farmers and is available to assist school gardens as well. The CQP requires that growers employ food safety standards that minimize the risk of microbial contamination and foodborne illnesses for fruits and vegetables grown and harvested in Massachusetts. When you request an audit, an auditor from the CQP will visit the school garden and review your food safety practices, such as the cleanliness of harvest containers and wash/pack areas, water testing, training and hygiene, wildlife, and other potential food safety risk factors. The audit program also requires growers to keep written procedures and records. Audits are normally done once a year. Audits will be done with the person responsible for food safety in the garden. This may be a designated school garden teacher, a volunteer, or someone else. These audits are meant to highlight areas within the garden that may need further support, and based on the outcome of the audit, will identify challenges and gaps in garden food safety. Technical assistance will be provided to schools who request an audit from the CQP.



If you are interested in learning more about a CQP audit for your school, visit the CQP website (<https://www.mass.gov/service-details/commonwealth-quality-program-cqp>). If you would like to become CQP certified, please contact:

Erik Stenfors  
Produce Safety Inspector  
Massachusetts Department of Agricultural Resources  
30 Riverside Drive  
Lakeville, MA 02347  
(857)292-1872  
Eric.Stenfors@mass.gov

# Staff //

## Best Practices for Garden Food Safety



### General

Review the Food and Garden Safety Checklist annually, or when there are any significant changes to the garden or staffing.

All participants must wash hands, using proper hand washing techniques, before harvesting or handling food and after being in the garden.

### For Students

Students should have adult supervision at all times when in the school garden.

Students should ask permission before picking anything in the garden.

Garden educators should instruct students on how to harvest produce to preserve the plant and maintain garden safety.

Be aware of all student allergies, including food and insects. The sap, leaves, and prickly stems of certain plants, such as squash or tomatoes, can cause a rash in sensitive individuals.

Create a student-friendly list of guidelines (samples: best practices & garden rules) to review regularly.

Post guidelines in a visible location in the garden and distribute them to classroom teachers, school staff, and any adults who will be supporting the garden.

Use signs (ex. stop lights or flags) to let students know if the crops are ready to eat.

(Ex. Red = Don't Eat, Yellow = Crop is Growing, and Green = Students Can Try It)

### Gardening Tools

Provide students with gardening gloves if needed. This is especially important if they are exposed to thorns or other dangerous plant or soil material.

All harvesting tools such as scissors, bowls, tubs, etc. should be food-grade and/or food service approved and designated solely for harvest and food handling. The tools should be cleaned regularly with hot water and soap and stored when fully dried.

### Growing Food

No pesticides should be used in the school garden.

Create paths using wood chips, stone, or gravel, that are distinct from the growing spaces to make walking areas clear and obvious.

Review weeding, watering, and harvesting procedures with students frequently.

### Food Harvesting & Delivery

School garden produce delivered to a school cafeteria should be received and inspected by food service personnel upon delivery with the same system used to receive and inspect all other incoming products.

After produce is washed and ready to be served in the cafeteria or garden, barriers such as gloves, deli paper, or appropriate utensils should be used to touch ready-to-eat produce.

# Students // Best Practices for Garden Food Safety



## Do you know who's in charge in the School Garden?

Make sure that you can identify the Garden Coordinator or staff member leading the garden time and follow their directions at all times.

## Do you know who's in charge in the Kitchen/Cafeteria?

If you will be dropping food off in the kitchen, make sure you can identify the Kitchen Manager or Cook. They are in charge of the kitchen and all students must follow their direction in order to keep students and food safe.

## Have you washed your hands?

You MUST properly wash your hands before harvesting produce thoroughly with soap and warm water. Rewash your hands after breaks, visiting restrooms, sneezing, coughing, or anytime your hands become contaminated.

## Do you have the right footwear on?

Flip-flops or bare feet can be dangerous in a garden, as well as unsanitary. Closed-toed shoes should be worn in the garden.

## Want to try food that's growing in our garden?

Please ask the Garden Coordinator or Supervisor before picking and/or eating anything in the garden.

## Ready to use the garden tools?

The adult in charge will supervise any use of tools. Only use the tools for their intended use. Do not lift long-handled tools above waist height.

## Are there raised beds in the garden?

If so, please do not stand on edges or in the garden beds.

## Questions?

Please ask!



# Handwashing

Handwashing is essential to school garden food safety. Remember to wash your hands with soap and water after using the toilet, after touching the compost or garbage, before and after treating a cut or wound, and whenever your hands might be dirty. Before harvesting food from the garden all staff, students and visitors should wash their hands thoroughly with soap and water and dry them with a clean paper towel. While harvesting, rewash your hands after taking breaks, eating or drinking, using the restroom, sneezing, coughing,



or handling compost or garbage. If running water is not available, bring a jug of potable water, soap, and a roll of paper towels with you to the garden. Alcohol-based hand sanitizers can reduce the number of micro-organisms on hands, but they are not a replacement for soap and water.

## List of Printable Signs & Logs

- Garden Rules
- Please Wash Your Hands
- Domesticated Pets Sign
- Farm Animals Sign
- Soil Amendment Log
- Volunteer Training Log
- Cleaning & Sanitizing Log
- Compost Treatment Log



# Garden Rules



**WALK (DON'T RUN) IN THE GARDEN**

**STAY ON THE GARDEN PATH**

**ASK BEFORE YOU PICK OR EAT FOOD**

**LISTEN CAREFULLY TO ALL INSTRUCTIONS**

**FOLLOW DIRECTIONS BEFORE USING TOOLS**



**RESPECT PLANTS & BUGS**



**HAVE FUN!**





# Compost Treatment Log

Name & Address of School Garden:

Type of Compost Method:

Date Piled:

Date Finished:

Row Number:

List all ingredients added to compost:

*Use this record for composting done in the garden.*

*Record the date piled, turning dates, and the temperatures maintained. Use one sheet for each pile or row.*

Date Turned	Temp/Time Test Area 1	Temp/Time Test Area 2	Temp/Time Test Area 3	Temp/Time Test Area 4	Initials

Proper compost production requires a minimum temperature of 131°F be maintained for 3 days using an enclosed system OR a temperature of at least 131°F for 15 days using a windrow system, during which the materials must be turned 5 times (FSMA Produce Rule, 2015, Rule 21 CFR part 112.54(b)).

# Cleaning & Sanitizing Log

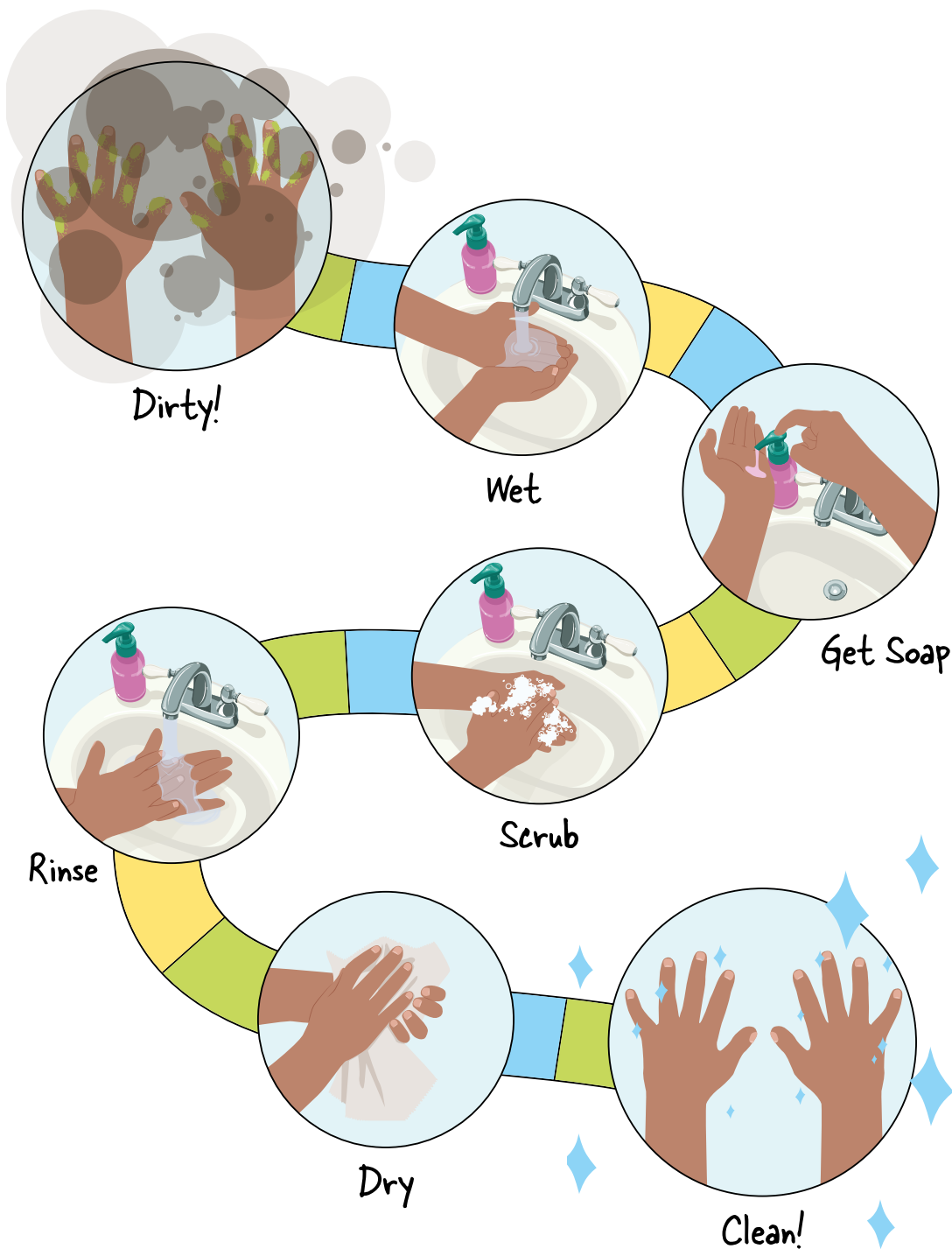
Name & Address of School Garden:

Date	Time	Tool/Equipment	Cleaned and/or sanitized	Method Used	Cleaned by (initials)

# Volunteer Training Log

Trainer Name	Date	Time	Content of Training

# Please Wash Your Hands!



Centers for Disease  
Control and Prevention  
National Center for Emerging  
and Zoonotic Infectious Diseases

[www.cdc.gov/handwashing](http://www.cdc.gov/handwashing)

CS267057-A



# Garden Rules

**PLEASE KEEP DOGS  
(AND ALL OTHER DOMESTICATED PETS)  
OUT OF THE GARDEN.**

**THANK YOU!**





# Garden Rules

ALL GARDEN VISITORS MUST  
WASH THEIR HANDS AFTER  
TOUCHING THE FARM ANIMALS.

THANK YOU!

