



Post-Harvest: Fall Clean-up

Lesson Two:

What do you do with the garden after the harvest?

For October

“Preparing for Next Year” from GOT DIRT?, Wisconsin Department of Public Health. It’s time to put the garden to bed, if you didn’t do that last month. Students learn about tool Safety and composting. Directions for building your own compost bin are included.

Content objectives: Describe how gardeners and farmers care for the soil so that they can grow healthy, edible crops during the next growing; identify steps to put your garden to bed in a way to prepare the soil for the next harvest.

Life Skill objectives: Healthy living, Critical thinking, Communication, Cooperation
Leadership, Decision making, Problem solving

Core and STEM concepts and skills:

Science Science as inquiry, Earth and space, Life science

Math Measurement and observation

Language Arts Speaking, Listening, Writing, Viewing

Social Studies Behavioral sciences

Healthy snack: Select from *Harvest Sampling Ideas and Recipes* (Grade 3 Lesson Plan August/September: Harvest)

Additional and supporting resources:

Contact your local Cooperative Extension Master Gardener Program for additional information on putting the garden to bed or composting.



LESSON PLANS FOR 2012-13 SCHOOL YEAR, GRADE 3

October: Post Harvest: What do you do with the garden after the harvest?

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Recipe and Tasting Options: Use August/September *Harvest Sampling Ideas and Recipes*

BEFORE THE LESSON

Is it time to put your garden to bed for a while? Do you want to learn how gardeners and farmers care for the soil so that they can grow healthy, edible crops during the next growing season? All of the following items will help you put your garden to bed in a way to prepare the soil for the next harvest. Garden experts say that if you could choose one thing to do to improve your garden for the next growing season, building a compost pile or bin would be your wisest decision. Extension Master Gardeners and other local garden experts can help you to do that.

1. Grade 3, October: Post Harvest

This document contains all the curriculum items and resources you need for this lesson. All lesson downloads are located on the www.peoplesgarden.wsu.edu Educational Toolkit.

2. Put Your Garden To Bed, University of Maryland Extension

Questions About Composting, Iowa State University Extension and Outreach

Review pages 27-28 in the *Implementation and Beyond Guide* in the Educational Toolkit

<http://extension.wsu.edu/peoplesgarden/toolkit/Pages/default.aspx>

Tool Safety Game, Iowa State University Extension and Outreach, *Growing in the Garden*

Please read and use these resources as guides for post-harvest gardening activities. You may copy these resources to send home with the students.

3. Student Garden Journals

Start a page for the garden records or garden journals to describe or draw your post harvest activities. You may want to start the page with the goals you want to accomplish to prepare the garden for next year. Then explain how you think the post harvest activities will help you to reach your goals. If you haven't started a Student Garden Journal, this would be a good time.

4. Post - Harvest Recipes

Select a recipe from the *Harvest Sampling Ideas and Recipes* (Grade 3 Lesson Plan August/September: Harvest) that includes garden produce you have harvested or fresh produce that could be from a garden near where you live. Be prepared to have the students help to prepare and eat it.

THE LESSONS

1. **Preparing for Next Year** is a lesson that is referred to as a step to gardening in the Got Dirt? curriculum from Wisconsin Department of Health (included in these materials). You will have to prepare using the resources listed in items 2 above. Master Gardeners or garden experts could build a compost bin that is appropriate for your site. Be sure to check with your school administration for approval. The students can learn to fill it and turn it. Before using garden tools to clean up your garden, do the tool safety game. In the resources, find the crops that the students will be harvesting. Assign tasks to groups of students before going out to work in the garden. If you do not have a garden to put to bed, you can tour local gardens or even farm fields to observe what is going on and you can start your own composting projects.

2. If possible, have the students help to prepare a recipe or snack from *Harvest Sampling Ideas and Recipes* (Grade 3 Lesson Plan August/September: Harvest). Talk about how the lesson connects with the snack they are eating.

3. You may want to expand the lesson by choosing a book to read about soil and composting.

Here are some suggestions:

Compost! Growing Gardens From Garbage by Linda Glaser

Composting: Nature's Recyclers by Robin Koontz

AFTER THE LESSON

1. Keep composting!

2. Explore what other local gardeners and farmers are doing with their gardens or fields.

Put Your Garden To Bed

By Pamela B. King
Charles County, Maryland Extension Agent

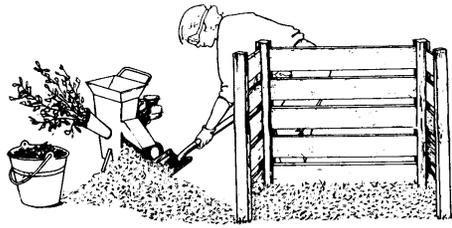
When Fall crops and flowers have matured, it is time to put your garden to bed. Get started with these tips for cleaning your garden, setting it right for the winter, and laying the groundwork for next year's garden:

- Plant perennial rhubarb roots October 15 through November 15. Plant Spring flowering bulbs, such as tulips and daffodils, in October. Other perennial flowers, such as peonies, do best when planted in the fall, too.
- Pot up parsley, chives, geraniums and other herbs and flowers. Keep them out of doors for a few weeks in their pots. Then bring them in and place them in a sunny window for production throughout the winter.
- Harvest and preserve fall crops.
- Cover tomatoes and other warm season crops with plastic in the evening to protect them from light frosts. Remove the plastic in the morning so heat does not build up under it and damage the plants.
- Mulch and protect hardy crops, such as greens and root crops, so they will last longer. Pile mulch over and around plants to insulate them.
- Remove old, spent plants from the garden. Any plants that had insects or disease should be put in plastic bags and thrown out with the trash. Others can be composted.
- Make needed structural changes, such as leveling or building raised beds. Turn the soil and leave it rough to expose insects and disease to the cold. It will kill some of them.
- Mow tall grasses around the garden and use them (or other materials) to mulch the ground before it begins to freeze (late November) to prevent erosion.
- Take a soil test and add any needed limestone to the garden so it will break down and do its job by spring.
- Wait until spring to fertilize.
- Make compost from fallen leaves, kitchen vegetable scraps, garden waste, and other organic matter in an enclosed container. Call the Extension Service for directions on making compost.
- Add organic matter (compost, leaves, grass clippings) to improve the condition of the soil.
- Be sure to clean up your garden so it will look neat and clean for the winter.

Now sit back and wait for your seed catalogues to come and start planning for next season.

From: University of Maryland Extension

http://mastergardener.umd.edu/local/charles/Horticulture%20Know_how/Put%20Your%20Garden%20to%20Bed.cfm Accessed 8/1/2012



How long does it take to reach a finished product?

Generally, a compost pile that contains a good mixture of finely chopped materials, is turned regularly and kept moist, will be ready in about 2 to 4 months. A compost pile composed of non-shredded materials that is left unattended may take a year or longer to decompose. Piles prepared in late fall will not be very well decomposed by spring. When the compost is finished, the pile will be about half its original size and have a pleasant, earthy smell.



Of what value or use is the finished compost product?

Compost is used as an organic amendment to improve the physical, chemical and biological properties of soils. For example, adding compost to garden soil will increase the moisture holding capacity of sandy soils and improve the drainage and aeration of heavy clay soils. Over time, yearly additions of compost will create desirable soil structure making the soil easier to work.

Will compost eliminate the need for commercial fertilizers in my garden?

To a limited extent, compost is a source of nutrients. However, nutrient release from compost is slow and the nutrient content is often too low to supply all the nutrients necessary for plant growth. Compost should not be considered a substitute for fertilizer, but rather a supplement. Compost increases the ability of the soil to hold and release essential plant nutrients, especially in sandy soils. This may reduce the amount of fertilizers needed.

For more information

Horticultural information is available from your local Iowa State University Extension office and from these Web sites.

ISU Extension Distribution Center—
www.extension.iastate.edu/store

ISU Horticulture—
www.yardandgarden.extension.iastate.edu

Reiman Gardens—
www.reimangardens.iastate.edu

Prepared by Linda Naeve, former extension horticulturist; Richard Jauron, extension horticulturist; and Diane Nelson, extension communication specialist.

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Questions About Composting



IOWA STATE UNIVERSITY

University Extension

The Iowa Waste Reduction and Recycling Act of 1989 prohibited the disposal of yard wastes in sanitary landfills. This encouraged many gardeners and homeowners to try composting their leaves, grass clippings, and garden refuse. Although the process of composting is not difficult, some gardeners simply created “organic trash heaps” and became discouraged because the plant material in their pile did not readily decompose.

Below are a few of the commonly asked questions about composting.

What kinds of materials can be composted?

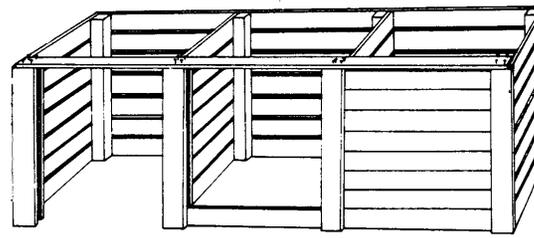
Yard and garden residues and other organic materials are suitable for composting. This includes leaves, grass clippings, straw and hay, sawdust, and finely chopped or shredded tree and shrub prunings.

Can kitchen scraps be added to a compost pile?

Certain kitchen scraps can be added to the compost pile, such as fruit and vegetable trimmings (including rhubarb leaves), coffee grounds and eggshells. Bury them in the pile to prevent odors and flies. Do not add meat scraps, bones, grease, whole eggs, or dairy products to the compost pile because they decompose slowly, cause odors, and can attract rodents.

What other things shouldn't be added to a compost pile?

Because of the possibility of the transmission of certain diseases, human, dog, and cat feces should not be placed in compost piles. Also, diseased plant material or weeds that have gone to seed may be undesirable in the compost pile. If the temperature in the pile does not reach 150° to 160°F, neither the weed seeds nor the disease organisms will be destroyed. If diseased plant materials are composted, the end product may be better used in another area of the yard rather than in the garden where they were generated.



For more information and instructions for building a stationary 3-bin compost turning unit, see “Composting Yard Waste” (PM 683).

What is the optimum size for a compost pile?

The best size for an enclosed compost pile is between a 3' x 3' x 3' pile and a 5' x 5' x 5' pile. If any smaller, it will dry out too fast; any larger and there will be poor air movement and it will be difficult to turn the pile.

Can wood ashes from the fireplace be used in the compost pile?

Wood ashes act as a lime source and should only be added in small amounts (no more than 1 cup per bushel of compost).

If my lawn has been treated with herbicides, can I still use the clippings in my compost pile?

Composting is an accelerated decomposition process that biodegrades many compounds faster than soil degradation. The faster degradation in an active compost pile is due to the more favorable conditions for decomposition of organic products including herbicides. If yard waste has been composted at least one year, pesticide residues should not be a problem when the compost is used.

Can I compost my newspapers?

Yes. Most newspapers today use soybean-based or other non-toxic inks. To promote decomposition, shred newspapers and mix with other materials.

Why doesn't a pile of leaves readily decompose?

It is best to have a mixture of organic materials together in the compost pile. Dry leaves are a high-carbon organic material. The microbes that do the decomposing require a certain amount of nitrogen for their own metabolism and growth. Without a nitrogen source, the decomposition will be slow. Grass clippings are high in nitrogen. When mixed together, the grass clippings will enhance the decomposition of the leaves.

Are commercially available inoculants or activators needed to have rapid decomposition in a compost pile?

Inoculants are dormant microorganisms. They are rarely needed, since soil, leaves, kitchen scraps, and finished compost already contain ample bacteria that readily work on their own. The only “activator” that may be needed is a nitrogen source since nitrogen is usually the limiting nutrient. Nitrogen accelerates the decomposition process if the materials to be composted are high in carbon, such as dried leaves.

How can I avoid problems with unpleasant odors from the compost pile?

Odors may arise from the addition of excessive amounts of wet plant materials such as fruits or grass clippings, from overwatering the pile, or by not periodically turning an actively decomposing pile. A properly prepared and adequately turned compost pile will generate little, if any, objectionable odor. Good aeration, provided by regularly turning over the materials in the pile, is essential for good, rapid decomposition. Also, keeping the compost damp but not waterlogged will go a long way toward preventing unpleasant odors. Adding lime does not necessarily reduce odors and may result in the loss of nitrogen from the pile.

TOOL SAFETY GAME

I am going to show you some right ways and wrong ways to use and store our tools. If you think I'm showing you the right way, clap. If you think I'm showing you the wrong way, stomp your foot.

- **Lift the hoe so that the blade is over your head like you are swinging a hatchet.**

STOMP.

I have lifted the hoe too high. I am not chopping the soil. I am hoeing it. It doesn't work very well this way. Also, you may hit someone who is nearby if you swing the hoe this high in the air.

- **Lift the hoe so that it is about 1 foot off the ground and bring it down in a gliding motion through the surface of the soil.**

CLAP.

This is the correct way to use the hoe to cut through crusty soil and remove weeds.

- **Repeat the same motions with the rake.**

- **Lay the rake down, teeth up.**

STOMP.

You should never set a rake or a hoe on the ground like this. What do you think would happen? You may want to demonstrate what would happen if someone stepped on the teeth of the rake or blade of the hoe. Be careful to stand to the side so the handle doesn't smack you in the face.

- **Stand the rake and hoe, handles up, against a wall or hang them.**

CLAP.

Rakes and hoes should be stood against a wall or in the shed or garage when they are not being used.

- **Walk with the trowel blade up.**

STOMP.

Always carry your tools such as this trowel with the sharp blade facing down.

- **Run a short distance holding a hoe and a trowel.**

STOMP.

Never run with tools in your hands.

- **Pretend to wash dirt from the trowel, hoe, or shovel.**

CLAP.

It is always a good idea to clean the soil off your tools before you put them away. This shows you are responsible for taking care of your tools.

- **Pretend to fight with a student over a trowel or hoe.**

STOMP.

Show respect by taking turns.



Preparing for Next Year

8 Steps

During the Growing Season

try composting

Compost, which is decomposed organic material, can be used in many different ways including as a soil amendment to add nutrients to your soil, as mulch around plants, or as an ingredient in potting soil. Furthermore, it can help fight disease, neutralize the pH of your soil, improve soil, protect against soil erosion, hold moisture, and help moderate soil temperature. To begin composting, find an area of level, bare ground near a water source. After choosing a place or container to store your compost, mix 1/3 "green" and 2/3 "brown" materials. Examples of "green" materials include grass clippings (from a chemical-free lawn), vegetable/fruit scraps, coffee grounds, weeds and other garden debris, feathers, hair, manure, or egg shells. Examples of "brown" materials include dry leaves, hay or straw, paper, cardboard, or dried grass clippings. Sawdust and small brush or twigs should be stored in a separate pile than the compost pile, as they tend to take longer to decompose. A sawdust or small brush pile can take up to 10 years or longer to fully decompose.

After the Growing Season

removing spent vegetable plants

Once the plants in your garden have stopped producing fruits and vegetables, entirely remove it from your garden. For example, remove all the cucumber, pumpkin, and squash vines in your garden. You can compost these spent plants, if they have not been infected by disease or insects.

add organic matter

You can improve soils by adding organic residues. Organic matter helps to create good crumb-like soil structure. This allows for better water and air movement and easier root penetration. The process of decomposition using organic residues is what helps loosen heavy soils. The key to improving "heavy" soils is to add organic matter frequently. Types of organic matter that you can use include rotten manure (aged), leaves, grass clippings (from a non-chemically treated lawn), compost, green manure, crop residues or peat moss. It is best to "dig" the organic matter into your soil at least six to eight inches deep. The best time to add organic matter is in the fall, after the previous growing season. This is when soils are reasonably dry. Plant a cover crop in the fall, such as annual rye, that can be tilled into the garden soil the next spring.



till it up

Tilling can be done mechanically via a rototiller or by hand using a spade or fork. Turning soil over and exposing the lower portion helps bury surface residue so microorganisms can decompose it. If left on the surface, crop residues act as an insulator and will slow the soil warming the next spring. If you take extra time to prepare your soil in the fall, it will make it easier come spring for next year's garden. Remember to NEVER, EVER TILL or work the soil when it is wet. If you do, the soil will form large clumps and balls and it will take even more time to create workable soil.

saving seeds

In general, it is not advised to save seeds from fruits and vegetables grown in the garden. Home-saved seeds of some crops can carry disease and seeds from hybrids will not grow true again. Some vegetables can be stored over the winter and transplanted outdoors the following spring for seed propagation. These vegetables include: beets, cabbage, carrots, onions, and rutabagas. Some vegetable seeds may be successfully saved. These include bean, lettuce, pea, pepper, and tomato seeds.

additional gardening resources and tips

For additional information on gardening check with your local county UW-Extension office or local garden shops. They can help with all sorts of gardening questions you may have including pests and diseases that you may experience in your garden.



last minute gardening tips

1. **Spread Out Your Rewards:** Replant beds or rows in the garden when vegetables pass their prime. For example, once the lettuce is done producing, replace the row with green beans.
2. **Not Sure About the Difference of Good & Bad Bugs:** Collect a sample of insects that you think are doing damage. Take your sample to an Extension agent or a garden center for identification.
3. **Don't spray insecticides when crops are flowering,** because it may also kill the pollinating insects.
4. **If using floating row covers,** be sure to lift them off of the plants occasionally to allow pollinating insects a chance to do their job.