

Experiential Activities Grades 3-5



EASY WAYS TO PRESERVE YOUR HARVEST



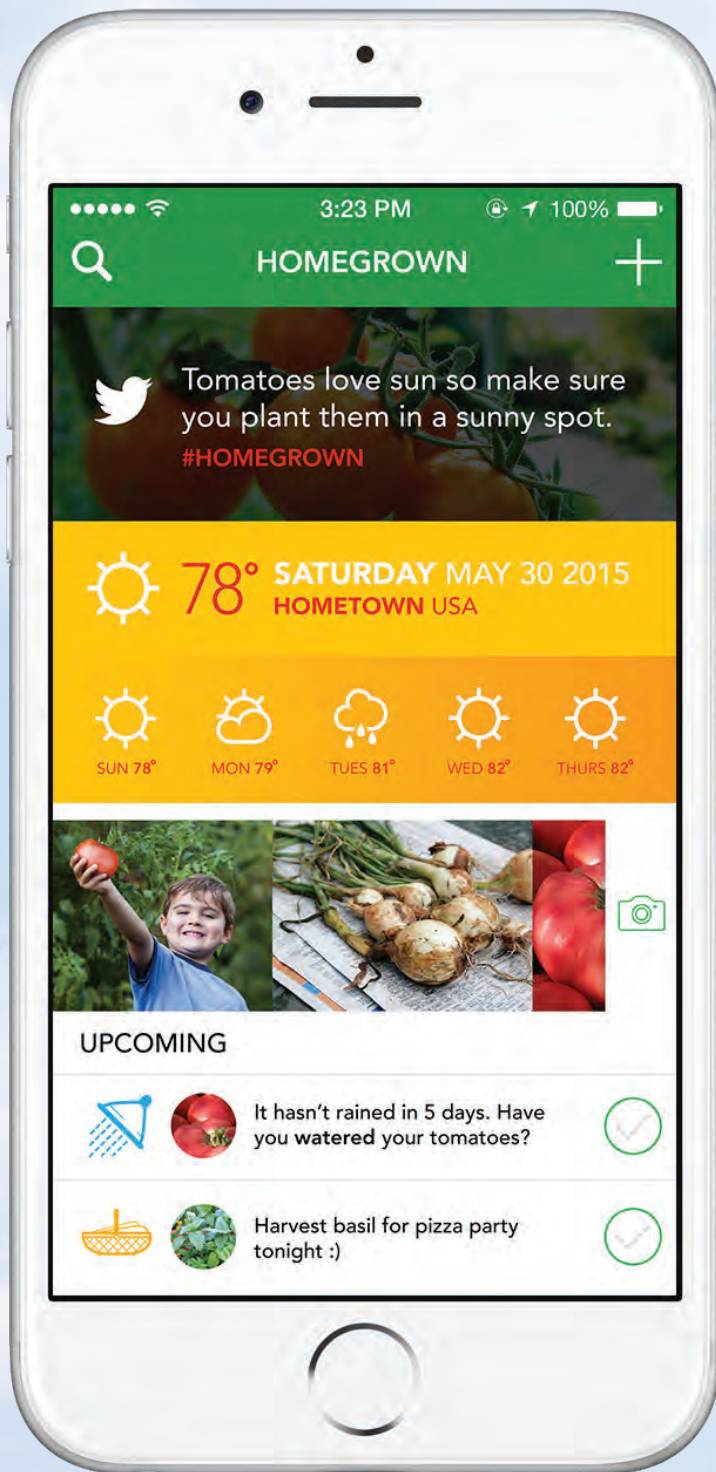
**NO CANNING
NECESSARY!**

How to Freeze, Dry, Pickle & Ferment Your Bounty

P. Allen Smith
GARDENHOME™



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Photos by Karen E. Segrave

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“If you’re like me, you want to enjoy the bounty of your garden more than just a few months of the year. Learn how to dry, freeze, pickle, and ferment and you’ll be enjoying the ripeness of summer throughout the year.”

-P. Allen Smith

TV Host, Author & Lifestyle Expert



DRYING YOUR HARVEST: VEGETABLES

It's not necessary to own a food dehydrator to dry vegetables from the garden. Follow these directions to preserve tomatoes and peppers in your home oven.

Tomatoes

Step-by-Step Instructions

1. Preheat oven to 200°F.
2. Slice the tomatoes. Cover the bottom of a casserole dish with olive oil and arrange tomatoes cut-side up. Sprinkle with coarse sea salt and fresh or dried herbs such as thyme, oregano, or basil, if desired.
3. Place the tomatoes in the oven for 4 - 6 hours. Times and temperature may vary based on your oven, the size of the tomatoes and of course your preference. Find what works best for you.
4. After they are cooked and cooled, place the tomatoes in an air-tight bag or jar. They will keep for about 6 months in a pantry at room temperature; store in refrigerator for up to 12 months. If desired, soak dried tomatoes in olive oil, wine or water to rehydrate.



Drying with an Electric Dehydrators

A number of herbs, fruits and vegetables can also be dried in an electric food dehydrator. To do so, slice the foods thinly and place in a single layer in the dehydrator. Follow the manufacturer's directions for rotating trays, optimal unit placement, and temperature settings.



**CREATE YUMMY ROMA
TOMATO SNACKS!
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Good to Know

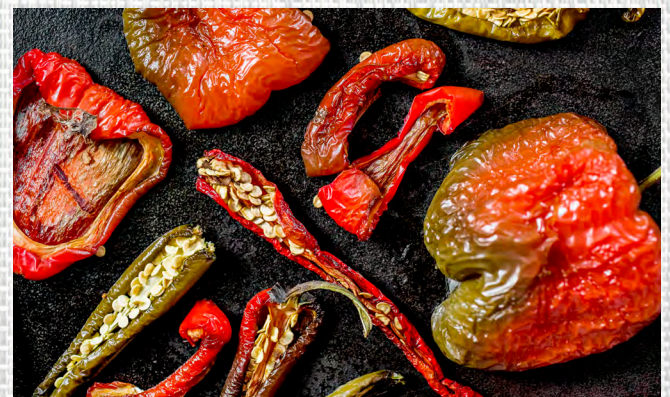
Dried vegetables are best when stored in a dark and dry area. Store dried foods in portion-size containers to prevent unnecessary exposure to light.



Peppers

Step-by-Step Instructions

1. Preheat oven to 200°F.
2. Cap the peppers and quarter them lengthwise. **Note:** If working with hot peppers, be sure to wear gloves.
3. Line a baking sheet with parchment paper and place the peppers on the sheet. Bake in oven for at least 2-4 hours (depending on size and your desired crispiness). Peppers are done when they crumble easily.
4. You may finely chop or crumble if desired. Store in an air-tight container. They will keep for about 6 months in a pantry at room temperature; store in refrigerator for up to 12 months.



DRYING YOUR HARVEST: HERBS

Dried foods require minimal space, do not have to be refrigerated, and retain most of their nutritional value. Depending on the type of herb and your conditions, choose between two drying methods for your harvest. Whichever you choose, you'll have an abundance of seasonings on hand for quick use.

AIR DRY

This method requires few materials and little time. The air-drying method is best for herbs that naturally retain low amounts of moisture, such as rosemary, oregano, and dill.

Step-by-Step Instructions

1. **Clip stems of fresh herbs. Make sure to cut pieces long enough to bunch and tie together for hanging.**
2. **Group the stems together. Use a rubber band to secure the stems and then loop a piece of twine around the rubber band to use as a hanger.**
3. **Hang the bundle in a well-ventilated, dark, warm area, such as a basement, and check frequently. Depending on conditions, your herbs may be ready in as little as one week.**
4. **When dry, remove the leaves, chop, and store in an opaque container to limit light exposure.**



Harvest How-To

You can count the rules of herb harvesting on one hand: water a few hours before you plan to harvest, make sharp cuts, keep the herbs clean, dry them quickly, and store them away from light and moisture.





For best flavor, use dried herbs and vegetables within one year.

OVEN DRY

For a speedier method or to dry herbs that retain a lot of moisture—such as mint, basil, and chives—use your home oven to create dried herbs. Follow the instructions below.

Step-by-Step Instructions

1. Remove leaves from stems, and lie flat on a baking sheet.
2. Preheat your oven on the lowest temperature setting; 140°F is the preferred setting. Note that most ovens do not have a setting this low, so use the lowest available, and leave the door of the oven cracked to offset the temperature. Some newer oven models have a dehydrator setting. This may also be used.
3. Cook for 2-4 hours, checking frequently. You will know the herbs are ready when the leaves appear to crunch or crumble easily. Store in an opaque container to limit light exposure.

Spaghetti Sauce with Dried Herb Blend

Use your harvest to create a simple, savory sauce the entire family will enjoy.

INGREDIENTS

Dry Herb Blend

Basil

Oregano

Parsley

Sauce

16 ounces tomato sauce

12 ounces tomato paste

12 ounces water

2 teaspoons salt

1 teaspoon pepper

1 teaspoon minced garlic

1 teaspoon minced onion

3 teaspoons dried herb blend

(see preparation below)

PREPARATION

Dried Herb Blend

Chop the leaves of the herbs, and combine one part basil and one part oregano with two parts parsley. Store the remainder in an opaque container.

Sauce

Combine all ingredients in a medium-sized pot. Bring to a low boil. Reduce heat and simmer for 2-3 hours. Mix with cooked meat, if desired, and serve over pasta.

Tip

Remember dried herbs—except for rosemary—have a more intense flavor than fresh versions, so you'll need less of a dry ingredient than you would a fresh one.



FREEZING YOUR HARVEST: VEGETABLES

Extend the life of your vegetables with these tips for freezing your harvest.

Quick Guide



Asparagus –

Group spears by size. Blanch small spears for 2 minutes, medium-size spears for 3 minutes, and large spears for 4 minutes. Freeze in a single, flat layer inside freezer bags.



Cabbage – Wash the heads and soak in a salt solution (2 teaspoons of salt to 1 gallon of water) to remove any garden insects that may be hiding in the cabbage layers. Chop into wedges and blanch for 1 ½ minutes. Allow to dry thoroughly. Pack into a freezer bag.



Green Beans –

Trim the stems. Blanch for 3 minutes. Pack into freezer bags.



Carrots – Chop into bite-sized pieces, and blanch for 2 minutes. Pack into a freezer bag.



Broccoli Florets –

Blanch in boiling water for 3 minutes. Allow to fully dry—as water can become trapped in the florets. Freeze on a parchment-lined tray for 24 hours, and then transfer to freezer bags, lining the bag in a single layer. This will help to prevent the florets from freezing into one large mass.



Corn – Remove husks and silks from corncobs. Blanch for 7 minutes for small ears, 9 minutes for medium-sized ears, and 11 minutes for large ears. Allow to cool. Cut kernels from cobs, if desired. Freeze on a parchment-lined tray for 24 hours, and then pack into a freezer bag.



Eggplant – Wash and slice into uniform pieces. Blanch for 4 minutes. Remove, allow to cool, and place in freezer bags for storage.

Pumpkin – The National Center for Home Food Preservation recommends cooking pumpkin before freezing it. Cook according to your preferred recipe, and then pack into a freezer-safe container or bag for storage.



Peas – Shell the peas and blanch for 1 ½ minutes. Freeze on a parchment-lined baking sheet for one hour and then transfer to a freezer bag in a single layer.



Squash – Slice into uniform rounds, and blanch for 3 minutes. Place in portion-size freezer bags for storage.



Peppers – These do not require blanching. Freeze whole, sliced, or diced. You may also freeze individual pieces on a tray for 24 hours and then pack into freezer bags.

Tomatoes – These do not require blanching. Freeze whole, sliced, or diced. You may also freeze individual pieces on a tray for 24 hours and then pack into freezer bags. Note that you can freeze your tomatoes with the skins on; when taken from freezer, the skins will slip off as the tomatoes thaw.



Good To Know
Always freeze your harvest at the peak of the season—ensuring you'll pack in the most nutrients and flavor.



VISIT THE NATIONAL CENTER FOR HOME FOOD PRESERVATION FOR A FULL LIST OF BLANCHING TIMES.



Quick & Easy

Chicken Pot Pie

Use frozen vegetables from your garden to create this traditional comfort food.

INGREDIENTS

1 package refrigerated pie crusts (2 in box)

4 chicken breasts, boiled and cubed

2/3 cup frozen peas

2/3 cup frozen carrots

2/3 cup frozen corn

1 onion, chopped

1/4 cup fresh parsley, minced

1 can cream mushroom soup

1 can chicken soup

1 can cream of potato soup

1/2 teaspoon salt

1/2 teaspoon pepper

Cooking spray

PREPARATION

Preheat oven to 350°F. Mix all ingredients (except the pie crusts and cooking spray) together in a large bowl. Use cooking spray to cover a deep-dish pan. Place one of the pie crusts inside the pan, molding it to pan's shape. Pour the mixture into the crust. Cover with the remaining pie crust. Pinch the edges together to seal, and then use a knife to cut vents in the top crust to allow steam to escape; otherwise, it will overflow. Cook for one hour or until bubbly and brown on top.





FREEZE YOUR HARVEST: HERBS

Properly store your garden fresh herbs in the freezer, and you'll have a homegrown spice cabinet at your fingertips.

Quick Guide

Parsley and Cilantro – Remove from stems. Chop if desired. Place in ice cube trays, cover with water, and freeze. Once frozen you may break the cubes out of the tray, and place in a freezer-safe plastic bag.

Rosemary – Spread whole or chopped leaves on a tray lined with paper towels or parchment paper. Freeze for 24 hours, and then pack loosely in freezer bags.

Basil – Mix the leaves with a small amount of olive oil in a blender or food processor to create a semi-liquid mixture, then pour into ice cube trays and freeze. You can also freeze the leaves in water in the trays, then toss cubes into soups, stews, or sauces.

Oregano – Prepare in the same manner as basil. Mix the leaves with a small amount of olive oil in a blender or food processor to create a semi-liquid mixture, then pour into ice cube trays and freeze.

Sage and Chives – Roll the leaves in a cylinder, similar to a cigar. Place the leaves in the bottom of a freezer bag, then roll it up, removing air as you roll. Secure the roll with a rubber band. To use herbs, slice a chunk from the frozen "cigar."

Thyme – Leave the stems on the herb and place on a tray lined with paper towels or parchment paper. Freeze for 24 hours. Remove from freezer, and shake to separate the leaves from the stems. Pack the leaves loosely in freezer bags.





Tips to Try
Freeze food and spices in appropriate portion or recipe-use sizes for quick use.

Label the freezer bags with the date and the item name for easy identification.

FREEZE YOUR HARVEST: FRUIT

While fresh fruit may signal a warm summer day, freezing your bounty will allow you to enjoy the flavor year-round.



Quick Guide

Cantaloupe and watermelon – Cube the melon or cut into manageable pieces. For a quick freeze, place on a parchment-lined tray. Once the individual pieces are frozen, place in a single layer in freezer bag. You may also create melon balls and freeze in a freezer-safe container or bag.



Strawberries – Remove the stems and caps from the berries. Wash and place on a towel to dry. Pack into freezer-safe bags, removing as much air as possible.



Strawberry-Basil Freezer Jam

Try this no-canning-required recipe for a fun twist on a classic breakfast staple.

Yield: 6 cups

INGREDIENTS

3 cups crushed strawberries (about 2 pounds)

3 cups granulated sugar

1 ¾ ounce package of fruit pectin

¾ cup water

¼ cup fresh basil leaves, finely chopped

PREPARATION

1. In a large bowl, mix the 3 cups of crushed strawberries with 3 cups of granulated sugar. Mix well to combine and moisten all the sugar.
2. Meanwhile, in a small saucepan, combine the fruit pectin and ¾ cup of water. Bring to a boil on high heat, stirring constantly. After one minute, remove from heat. Stir pectin and water mixture into the strawberry and sugar mixture. Continue to stir constantly for about 3-4 minutes or until the sugar is completely dissolved. Next stir in freshly chopped basil leaves.
3. Pour mixture into freezer-safe containers with tight-fitting lids. Let stand at room temperature for 8 hours before moving into the fridge or freezer. If you freeze, allow to thaw in the fridge before use. Jam should last 2-3 weeks in the fridge or up to a year in the freezer.



**WATCH HOW TO MAKE
STRAWBERRY-BASIL
FREEZER JAM**



PICKLING YOUR HARVEST

Preserve fresh-picked vegetables through this simple process.

A number of fruits and vegetables—from tomatoes to onions, cabbage to melons—can be preserved for later use through pickling. What's more, the process can give the produce a unique, tangy flavor.

For starters, it's important to note there are different methods of pickling; you can use a boiling water bath to seal jars of pickled foods or try a refrigerator version (see our recipe below) that does not require the water bath step.

Top Tips for Pickling

- Start with fresh, crisp produce. With pickling, the adage is: **Crisp into the brine, crisp out of the brine.** Start with mushy cucumbers and you'll wind up with mushy pickles.
- Use canning, pickling, or kosher salt—made specifically for this purpose.
- Never change the proportions of vinegar to food to water in recipes. The vinegar is necessary for the process. Be sure to follow recipes carefully to avoid risk of food spoilage.

GET MORE INFORMATION
ON PICKLING YOUR
HARVEST [HERE](#)



Refrigerator Pickled Okra

Create a kicked-up pickled okra without the process of canning.

Makes 2 quarts; Note that this recipe is also suitable for cauliflower, summer squash, cucumbers, and many other vegetable varieties.

INGREDIENTS

4 cups of water

2 cups white vinegar

6 teaspoons kosher salt

4 fresh sprigs dill

1 teaspoon celery seed

1 teaspoon coriander seed

1 teaspoon mustard seed

3-4 cups medium to small okra, whole
(depending on size)

2 (1-quart) glass jars

PREPARATION

1. In a large pan, create a brine by bringing water, vinegar, and salt to a boil; stir until salt dissolves. Remove from heat and set aside.
2. Drop two sprigs of dill into each of the glass jars. Distribute the celery, coriander, and mustard seeds evenly between the two jars. Stuff each jar with okra until well packed.
3. Pour the brine over the vegetables, covering completely. Allow to cool, then place the lids on the jars and refrigerate for at least 3 hours before serving. The flavor will seep into the okra the longer they sit, and will be good for use for 3-4 months when refrigerated.



“The difference between pickling and fermenting is basically alive versus dead. Fermenting enhances the nutrient value of the food by keeping the probiotics active. Modern pickling, or pasteurized with vinegar submersion, kills all probiotics to produce a shelf stable product. It’s only been in the last 100 years that people started pickling over fermenting.”

Quote from Cat Swenson
of Great Fermentations!



Pickling vs. Fermenting

Pickle —

noun | pick·le | \ˈpi-kəl\

: to preserve food or other perishable items in vinegar, brine, or a similar solution.

Ferment —

noun | fer·ment | \(\,)fər-ment\

: to cure a product or food over a period of time in a saltwater brine.

So, what’s the difference?

The main difference is that in the pickling process vinegar is needed to react with the food and acidify it for preservation. No vinegar is used in fermentation of vegetables. Instead, a salt-water brine is made, poured over the food, and allowed to naturally react with bacteria that is present on the food. This process produces lactic acid, which not only preserves the food, but also acts as a highly beneficial probiotic to aid in digestion. Not surprisingly, pickled foods may have a sour taste due to the vinegar, whereas fermented foods may have a slightly salty and sour flavor. In any case, expect the flavor to be more pungent than a mass-produced counterpart. Also note that because fermentation continues to occur, the flavor of these recipes will change depending on how long it has been allowed to ferment.

Turn the page to read more about fermenting.

FERMENTING YOUR HARVEST

Try this simple method for preservation and you'll also reap health benefits.

Fermenting is prized not only for its simplicity but also for the probiotics—which aid in digestion—that are created in the process. Cabbage, radishes, turnips, parsnips, and green tomatoes are all good candidates for fermenting. Fermented vegetables begin with the process of lacto-fermentation, which also enhances the nutrients in the food. Cabbage is an easy and tasteful way to get your feet wet when it comes to the fermentation process. Try the sauerkraut recipe featured here for a simple entry-level version.

Sauerkraut

Enjoy this traditional German dish on Polish sausage or as a stand-alone dish. This recipe does not require a saltwater brine; the salt draws enough moisture from the cabbage to create a brine.

INGREDIENTS

1 head of cabbage, sliced into strips

2 teaspoons of sea salt

PREPARATION

1. Place the cabbage in a metal bowl and sprinkle the salt over the top. Allow to set for 2-3 minutes and then begin to mash using either your hands or a potato masher.
2. Transfer into mason jars. Mash the cabbage down until it is covered with the juice completely. Leave one inch of space between the sauerkraut and the top of the jar for expansion, use a breathable kitchen towel to cover.
3. Allow to sit at room temperature for at least 3-10 days. Cover with airlock lid and refrigerate after it is to your taste.
Note: Leftovers from the batch should be refrigerated.



Good to Know

When the elements of a fermentation recipe are exposed to air, it increases the likelihood of contamination. You do not want to see pink or brown cabbage, mold or slime, or smell a yeast-like odor; if so, you should not eat that batch. If you plan to do large-batch fermentation, purchase a crock designed specifically for this purpose.



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BUILD A MICRO-COMPOSTER!

Compost is decayed organic material that is used for fertilizer in our edible and flower gardens. This activity helps children learn more about this important, natural fertilizer!

First, explain to children that compost is made when biodegradable material – food scraps, grass cuttings, cardboard, straw, etc. – rots and decomposes. Rotting happens when our biodegradable waste is broken down by different organisms including: bacteria, fungi, worms and insects. The organisms use the biodegradable material as food and help to turn it into compost. When this process is complete, a brown crumbly mixture is left behind. It looks and smells like soil. Composting is a natural process of death, decay, and re-birth. It is nature's way of recycling!

What you need

- Empty 2 liter bottle (make sure it is transparent)
- Scissors
- Raw food scraps (vegetable/fruit peel, tea bags, coffee grounds, raw leftovers)
- Soil
- Water spray bottle

Instructions

Remove the label and rinse your bottle. Cut the top off the bottle (the end with the lid). Throw a handful of soil into the bottom of the bottle. Follow this with a handful of food scraps. Repeat this process until the bottle is full, finishing with a layer of soil. Once your bottle is full, spray the bottle with water (it shouldn't be too wet, but should be damp).

Place your composter in a sunny spot. When the soil on top dries out, spray with water to maintain a constant level of moisture.

Watch and wait as your food scraps decompose and turn to soil. You will need some patience – the whole process will take about 8 weeks. Take photos of the bottle once a week so that you can compare changes that take place from week to week. [A more advanced version of this experiment could include adding 'green' and 'brown' materials to your bottle, exploring the impact of nitrogen and carbon on the decomposition process].

Source: <https://urbangardenersrepublic.com/4-fun-composting-activities-for-kids/>





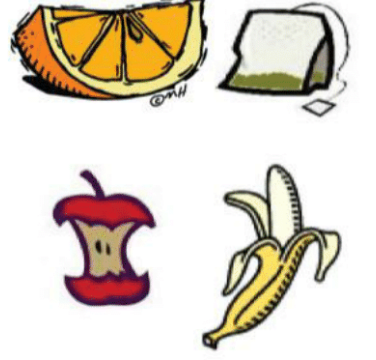


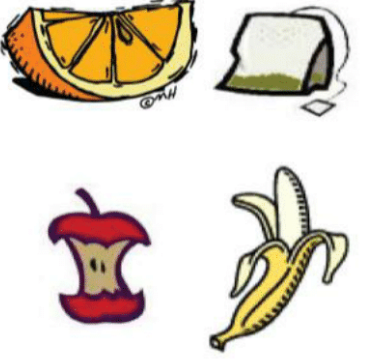



COMPOST CARD GAME

Have fun playing this card game like “Rock, Paper, Scissors,” as a way to learn/teach about composting!

1. Print out enough copies of the compost cards below so that each child has one of each card (Browns, Greens, and Soil, Water, and Air). Cards should be printed on colored or thick paper so that children cannot see through the back of the card.
 2. Discuss with children how materials are recycled in nature through a variety of means: decomposers, detritivores, and composting. *Decomposers, such as mushrooms, get their nourishment from leaf litter or decaying matter. Detritivores are animals that eat decaying organic matter (leaves, bark, trees, etc.) such as earthworms or beetles.*
 3. Remind children of the three basic things that are necessary to make compost:
 - a. Greens: Nitrogen-rich materials such as grass clippings and food scraps (items such as peelings, bread, rinds; but no cheese, meat, or bones)
 - b. Browns: Carbon-rich materials such as dried leaves, straw, and newspaper
 - c. Soil, Air, and Water: Compost piles often need “starter” soil rich in microorganisms, frequent turning of the pile to allow air in, and watering to encourage decomposition
 4. Arrange children in groups of three, and give each child one of each card: Browns, Greens, and Soil, Water, & Air.
 5. This game will be played similarly to “Rock, Paper, Scissors.” The object of the game is for the group of three children to make compost with their cards. In order to make compost, each player will have to show a different card. For example, two “Greens” cards and a “Soil, Water, Air” card will not make compost.
 6. Most groups like to count “One, two, three, go!” and then all players show a card without looking at which card they are choosing. When a group has one of each card played, they can say “Compost!”
- Extensions/Modifications: Groups can count how many times they get compost and compare with other groups’ results. Probability and statistics can be calculated as well.



<p>Browns</p> 	<p>Greens</p> 	<p>Soil, Water, Air</p> 
<p>Browns</p> 	<p>Greens</p> 	<p>Soil, Water, Air</p> 
<p>Browns</p> 	<p>Greens</p> 	<p>Soil, Water, Air</p> 

Do you know about the Soil Superheroes? They are so important to healthy soil! Check out the scavenger hunt below and then go outside and see if you can find some Soil Superheroes. Consider making your own Super Hero catcher shown below.

Soil superhero scavenger hunt

Can you find my friends in the garden? Look under leaves and rocks and in the compost. These soil superheroes help make compost so plants can grow strong! Put a next to the ones you find.

I eat slugs and bugs.

I eat fungi and jump when scared.

I eat dead plants.

I eat slugs and bugs.

I'm too small to hurt you.

Ground beetle

Springtail
Actual size

Millipede

Roly-poly

Sow bug

White worm

Tortoise mite
Actual size

Centipede

Pseudoscorpion
Actual size

Red worm

Catch soil superheroes at night with a jar, buried like this. Always be gentle with bugs, and let them go afterward.

Composting turns household wastes into valuable fertilizer and soil organic matter.

In your backyard

All organic matter eventually decomposes. Composting speeds the process by providing an ideal environment for bacteria and other decomposing microorganisms. The final product, humus or compost, looks and feels like fertile garden soil. This dark, crumbly, earthy-smelling stuff works wonders on all kinds of soil and provides vital nutrients to help plants grow and look better.

Decomposing organisms consist of bacteria, fungi, and larger organisms such as worms, sow bugs, nematodes, and numerous others. Decomposing organisms need four key elements to thrive: nitrogen, carbon, moisture, and oxygen. For best results, mix materials high in nitrogen (such as clover, fresh grass clippings, and livestock manure) and those high in carbon (such as dried leaves and twigs). If there is not a

good supply of nitrogen-rich material, a handful of general lawn fertilizer will help the nitrogen-carbon ratio. Moisture is provided by rain, but you may need to water or

cover the pile to keep it damp. Be careful not to saturate the pile. Turning or mixing the pile provides oxygen. Frequent turning yields faster decomposition.



Composting can be as simple or involved as you would like. It depends on how much yard waste you have and how fast you want results.

*Backyard
Conservation*

is a cooperative project of:

**USDA Natural Resources
Conservation Service
National Association of
Conservation Districts
Wildlife Habitat Council**

April 1998

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One in a series of 10 tip sheets on backyard conservation

Getting started

Many materials can be added to a compost pile, including leaves, grass clippings, straw, woody brush, vegetable and fruit scraps, coffee grounds, livestock manure, sawdust, and shredded paper. Do not use diseased plants, meat scraps that may attract animals, or dog or cat manure which can carry disease. Composting can be as simple or as involved as you would like, and depends on how much yard waste you have, how fast you want results, and the effort you are willing to invest.

Cold or slow composting

With cold or slow composting, you can just pile grass clippings and dry leaves on the ground or in a bin. This method requires no maintenance, but it will take several months to a year or more for the pile to decompose. Cold composting works well if you don't have time to tend the compost pile at least every other day, have little yard waste, or are not in a hurry to use the compost.

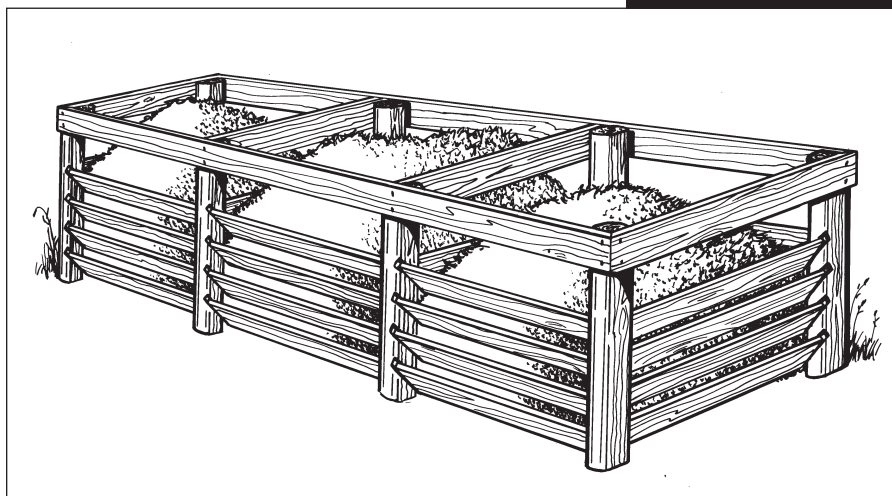
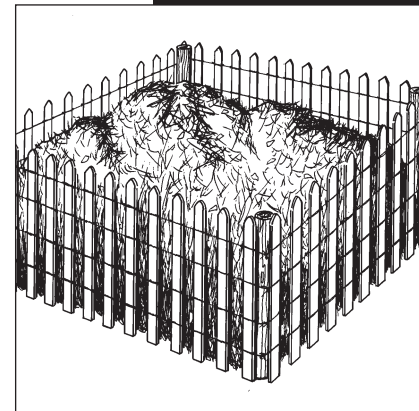
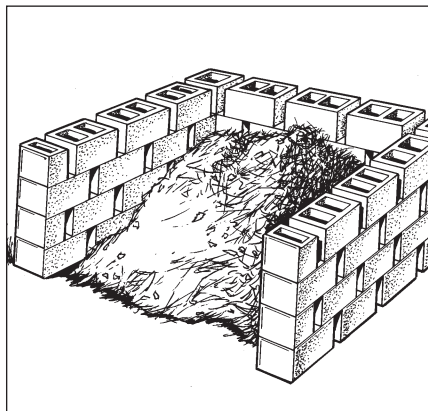
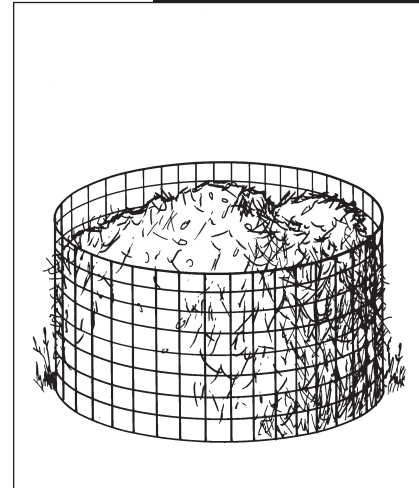
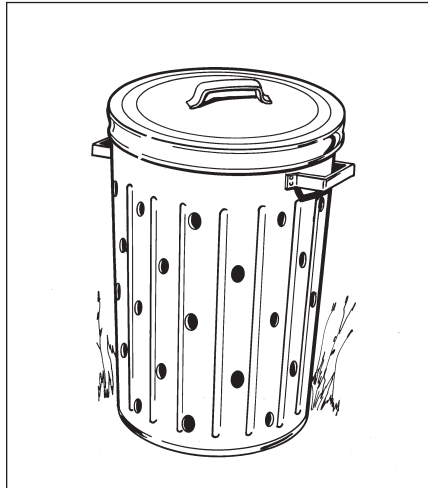
Keep weeds and diseased plants out of the mix since the temperatures reached with cold composting may not be high enough to kill the weed seeds or disease-causing organisms. Add yard waste as it accumulates. Shredding or chopping speeds up the process. To easily shred material, run your lawn mower over small piles of weeds and trimmings.

Cold composting has been shown to be better at suppressing soil-borne diseases than hot composting. Cold composting also leaves more undecomposed bits of material, which can be screened out if desired.

Hot composting

Hot composting requires more work, but with a few minutes a day and the right ingredients you can have finished compost in a few weeks depending on weather conditions. The composting season coincides

Compost bins may be (clockwise from left) as simple as a ventilated garbage can; built with wire mesh; picket fence; pressure treated wood; brick or concrete blocks; and other materials.



with the growing season. When conditions are favorable for plant growth, those same conditions work well for biological activity in the compost pile. However, since compost generates heat, the process may continue later into the fall or winter.

Hot piles do best when high-carbon material and high-nitrogen material are mixed in a 1 to 1 ratio. A pile with the minimum dimensions of 3' x 3' x 3' is needed for efficient heating. For best heating, make a heap that is 4 or 5 feet in each dimension. As decomposition occurs, the pile will shrink. If you don't have this amount at one time, simply stockpile your materials until a sufficient quantity is available for proper mixing.

Hot piles reach 110 to 160 degrees Fahrenheit, killing most weed seeds and plant diseases. Studies have shown that compost produced at these temperatures has less ability to suppress diseases in the soil since these temperatures may kill some of the beneficial bacteria necessary to suppress disease.

Steps for hot composting:

1. Choose a level, well-drained site, preferably near your garden.
2. There are numerous styles of compost bins available depending on your needs. These may be as simple as a moveable bin formed by wire mesh or a more substantial structure consisting of several compartments. (See diagrams.) There are many commercially available bins. While a bin will help contain the pile, it is not absolutely necessary. You can build your pile directly on the ground. To help with aeration, you may want to place some woody material on the ground where you will build your pile.
3. To build your pile, either use

alternating layers of high-carbon and high-nitrogen material or mix the two together and then heap into a pile. If you alternate layers, make each layer 2 to 4 inches thick. Some composters find that mixing the two together is more effective than layering. Use approximately equal amounts of each. If you are low on high-nitrogen material, you can add a small amount of commercial fertilizer containing nitrogen. Apply at a rate of ½ cup of fertilizer for each 10-inch layer of material. Adding a few shovels of soil will also help get the pile off to a good start; soil adds commonly found decomposing organisms.

4. Water periodically. The pile should be moist but not saturated. If conditions are too wet, anaerobic microorganisms (those that can live without oxygen) will continue the process. These are not as effective or as desirable as the aerobic organisms. Bad odors are also more likely if the pile is saturated.
5. Punch holes in the sides of the pile for aeration.
6. The pile will heat up and then begin to cool. Start turning when the pile's internal temperature peaks at about 130 to 140 degrees Fahrenheit. You can track this with a compost thermometer, or reach into the pile to determine if it is uncomfortably hot to the touch.
7. During the composting season, check your bin regularly to assure optimum moisture and aeration are present in the material being composted.
8. Move materials from the center to the outside and vice versa. Turn every day or two and you should get compost in less than 4 weeks. Turning every other week

will make compost in 1 to 3 months. Finished compost will smell sweet and be cool and crumbly to the touch.

Common problems

Composting is not an exact science. Experience will tell you what works best for you. If you notice that nothing is happening, you may need to add more nitrogen, water, or air. If things are too hot, you probably have too much nitrogen. Add some more carbon materials to reduce the heating. A bad smell may also indicate too much nitrogen.

Cold composting often proceeds faster in warmer climates than in cooler areas. Cold piles may take a year or more to decompose depending on the materials in the pile and the conditions.

Adding kitchen wastes to compost may attract flies and insects. To prevent this problem, make a hole in the center of your pile and bury the waste. Do not compost meat scraps, dead animals, pet manure, diseased plant material, or noxious weeds.

Check on any local or state regulations for composting in urban areas—some communities may require rodent-proof bins.

Vermicomposting

Vermicomposting uses worms to compost. This takes up very little space and can be done year-round in a basement or garage. It is an excellent way to dispose of kitchen wastes.

Steps for vermicomposting:

1. You need a plastic storage bin. One 1' x 2' x 3.5' will be enough to meet needs of a family of 6.
2. Drill 8 to 10 holes, approximately 1/4" in diameter, in the bottom of the bin for drainage.

3. Line the bottom of the bin with fine nylon mesh to keep the worms from escaping.
4. Put a tray underneath to catch the drainage.
5. Shredded newspaper works well as bedding. Rip into pieces and water well so that it is thoroughly moist. Place on one side of your bin. Do not let it dry out.
6. Add worms to your bin. Redworms are recommended for best composting, but other species can be used. Redworms are the common small worms found in most gardens and lawns. You can collect them from under a pile of mulch or order them from a garden catalog.
7. Provide worms with food wastes such as vegetable peelings. Do not add fat or meat products. Limit feed- too much at once may cause the material to rot.
8. Keep the bin in a dark location away from extreme temperatures.
9. In about 3 months the worms should have changed the bedding and food wastes into compost. At this time add fresh bedding and more food to the other side of the bin. The worms should migrate to the new food supply.
10. After a couple of weeks, open your bin in a bright light. The worms will burrow into the bedding. Scoop out the finished compost and apply to your plants or save for use in the spring.

Using compost

Compost can be used for all your planting needs. Compost is an excellent source of organic matter to add to your garden or potted plants. It helps improve soil structure which contributes to good aeration and moisture-holding capacity.

Compost is a source of plant nutrients. Compost can also be used as a mulch material. Studies have shown that compost used as a mulch, or mixed with the top one-inch layer of soil, can help prevent some plant diseases, including some of those that cause damping of seedlings.

On the farm

On the farm, potential waste is turned into a resource that saves money and helps the environment. Producers use livestock manure to fertilize crops. When manure is properly handled, it can be safely applied to the land without the risk of polluting water. Composting is also practiced in some poultry operations. The compost is used as fertilizer on the farms and for lawns and gardens.

Fall Veggies – What can we plant?!!

Bird's-eye-view Plans

So, yes, it is summer, but, it IS time to think about what we can plant in our fall garden!! Work with your children on a plan, for planting in the ground, in containers outside, in pots that can be moved inside, or in indoor gardens! Here are some suggestions for guiding plans for your fall garden.

1. What garden ("plant hardiness") zone are you in?

The first thing you need to do when planning your fall edible garden is to find out your gardening, or plant hardiness, zone. The United States Department of Agriculture (USDA) has an easy-to-use online tool: <http://bit.ly/zonegarden>. Check it out! You can even search by ZIP Code!

2. What vegetables can I plant in my fall garden?

After you determine your garden zone, you can use sites such as <http://bit.ly/plantschedule> to see what edible plants can be planted for a fall harvest. In the image on page 3 (which is for Zone 6b), the yellow/orange tells you when to plant, and the red tells you when to harvest. Thus, for zone 6b, you would consider planting beets, broccoli, carrots, kale, lettuce, peas, and spinach right now for fall harvesting!

3. What will our garden look like?

Lead your children in the design of the garden! See the next page for the fun lesson!



“Bird’s-eye-view” – Our Fall Garden Plan!

Materials:

- White paper
- Colored pencils
- Vegetables to taste (if feasible)
- Seasonal Planting Chart (like the one on page 3, but for YOUR garden zone - follow instructions on page 1 to find chart)

1. Begin by asking the children what a “bird’s-eye-view” means. [A view from high above, how a bird would see something]

2. Then ask children about their garden experience - who has a garden at home, who has grandparents with gardens? Have students brainstorm a little about why someone would grow a garden. (Nutrition, fitness, fun, beauty). Have any children grown gardens indoors? Explain to the children that they get to make a garden and all of them will help plan what they’ll plant!

3. Discuss different types of gardens – vegetable, flower, herb, etc.

4. Discuss what you will need to make the garden - tools, site, water, sun, seeds, plants, teamwork, etc.

5. What are things to think about when planning out a vegetable garden? What do plants need to grow – air, water, light/sun, space, temperatures, weather?

6. Based on your gardening zone, what plants can you plant for your fall garden? Show children the **Seasonal Planting Chart** for your gardening zone for this time of year. Which of the vegetables have the children tried? If feasible, give them a taste of several of the vegetables listed on the Chart.

7. Give each child a piece of white paper and colored pencils. Refer again to the Chart of vegetables that can be planted in the fall. Which vegetables do they want to include in their garden? Ask them to draw a map of their dream garden bed, from a birds-eye-view. Ask them to put names of their plants on their drawings to identify all plants.

Adapted from: <http://growing-minds.org/documents/garden-planning-lesson-plan-1st-grade.pdf>

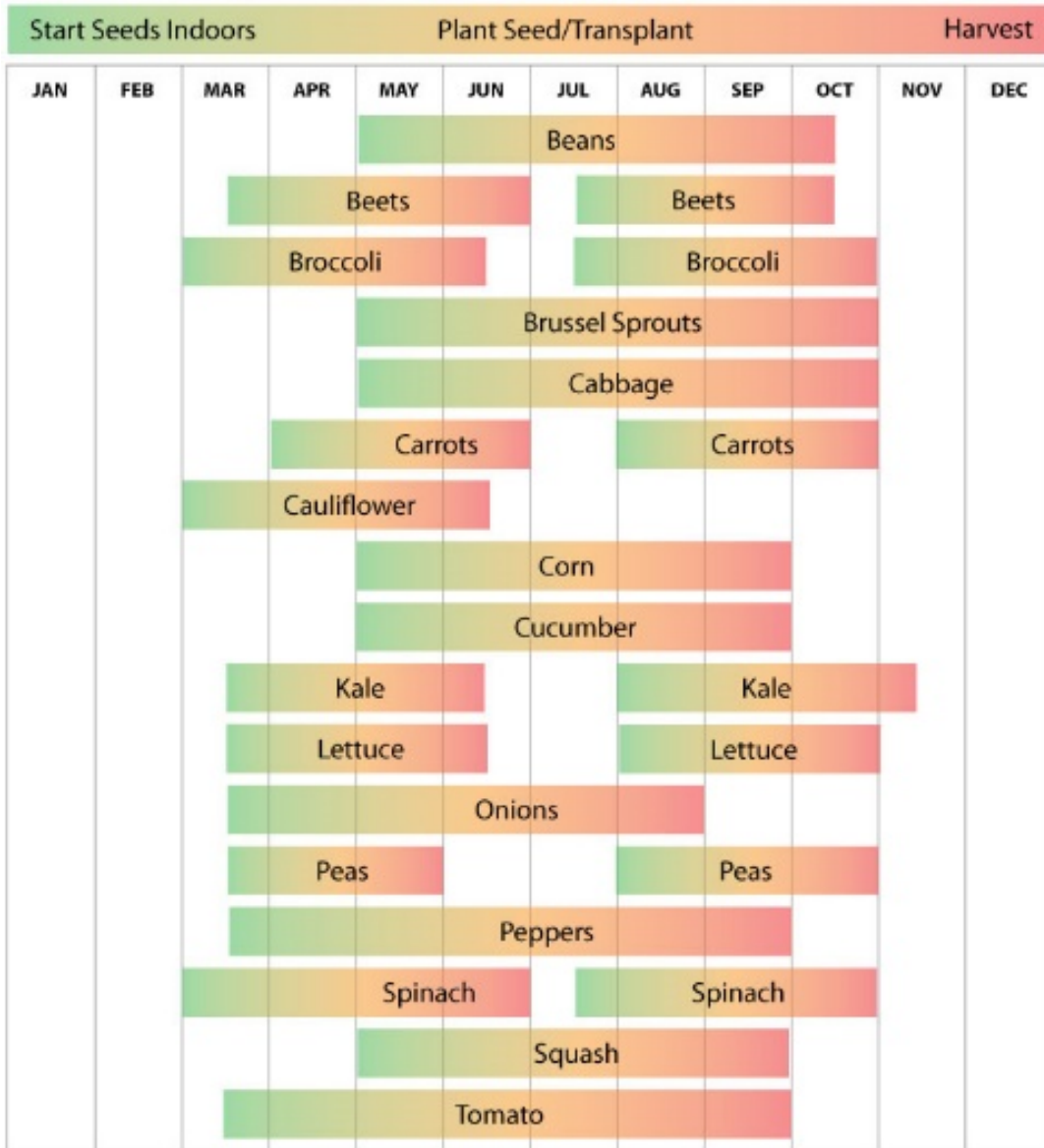




Community and Home Gardening

Kid Friendly Fun

Seasonal Planting Chart for Zone 6b (make sure you use the chart for YOUR zone, this is just a sample!)



Fall Veggies on Display!

This fall, put some of your favorite fall veggies and herbs on display in pretty pots (maybe you can paint the pots yourself!). Use the seed packaging as “art,” by inserting the packaging into the tines of a fork pushed into the soil – this also will remind you what is in each pot.

Herbs and lettuces would be great plants for this project, but also check out radishes and carrots (they may be smaller but very cute when harvested, check out: <http://bit.ly/carrotsinside>!)

Place your pots in a sunny window sill, or your pots can be placed outside in a sunny location until the risk of frost (then move them indoors to a bright window sill).



Adapted from: <http://www.parents.com/fun/activities/outdoor/kid-friendly-fall-garden-ideas/?slideId=27793>



Refrigerator Strawberry Jam for Kids!

What You Need:

- Containers of strawberries
- Sugar
- Heavy saucepan
- Jar with lid
- Stirring spoon

Before making your yummy refrigerator strawberry jam from the berries you picked up at your local Farmers Market or Pick-Your-Own farm,* spend some time explaining to your children how a strawberry grows. Point out the plant, blossom, white berry, red berry, and then, eventually jam!

- For fun and extra learning, ask younger children to pick out three berries of varying sizes. Can they put them in order from the smallest to the biggest?
-
- After the berries have been washed, help younger children with husking them. This is an activity that involves the use of both hands. Encourage them to use their thumb and index finger to pinch and twist the husks, or teach them to use a strawberry huller.
- Finally, make a batch of fresh refrigerator jam! Assist younger children in mashing about a pint of strawberries (2 ½ cups). Put in a heavy saucepan. Add ¾ cups sugar. Cook over medium-high heat, stirring constantly. Bring to a full rolling boil. Continue boiling for two full minutes. Remove from heat and pour into a clean jar. Let the jam cool first before putting on the lid and storing in the refrigerator. Enjoy your homemade jam for up to two weeks!
- If you have plain mailing or address labels at home, let your child draw/color labels for the jars!

*If you are picking strawberries, show your children how to use both of her hands to pick berries so they do not hurt the plant. They should hold the stem above the berry with one hand, and grasp the berry with the other, then pull gently.

Adapted from: https://www.education.com/activity/article/Lessons_From_the_Berry_Patch/

