

## Gardening

The Gardening badge focuses on plant lore, growing and caring for plants, and gardening in the most sustainable/environmentally-friendly way possible. Topics and activities include learning the parts of a plant, growing and maintaining a garden, learning and practicing eco-friendly gardening techniques, composting and soil remediation, water conservation, and biodiversity.



## Gardening (RainDrops)

Pick 3 activities:

- \_\_\_\_\_ 1. Plant a seed and watch it grow to a seedling (beans, pumpkins, and certain herbs sprout quickly).
- \_\_\_\_\_ 2. Read or have read to you a book about gardening. Some examples of gardening books/stories include *How A Seed Grows* by Helene J. Jordan, *From Seed To Pumpkin* by Wendy Pfeffer, and *The Carrot Seed* by Crockett Johnson.
- \_\_\_\_\_ 3. Eat each part of a plant. These parts can be from different plants. Try a root, a leaf, a seed, a stem, and a fruit. Tell your circle or hearth about your experience. What did you like? What didn't you like?
- \_\_\_\_\_ 4. Draw or color 2 pictures of a plant. Share these pictures with your circle or hearth.
- \_\_\_\_\_ 5. Help an adult or an older Scout plant a flower or vegetable garden.
- \_\_\_\_\_ 6. Do a "plant play" for your circle or hearth. Start off as a little seed and grow into a plant. Tell your circle or hearth the 3 things a plant needs to grow.
- \_\_\_\_\_ 7. Create a work of art using plants. You could make a picture with leaves, weave a place mat out of straw or reeds, or make a mosaic with different beans. Use your imagination!
- \_\_\_\_\_ 8. Take a field trip to a nursery, botanical garden, or conservatory. What was your favorite part about your trip? Share the experience with your circle or hearth.
- \_\_\_\_\_ 9. Dig in the dirt! Try digging in clay, sand, and loamy soil. Which dirt was the easiest to dig in? Which dirt was the most difficult to dig in?
- \_\_\_\_\_ 10. Play a plant game. This can be a computer game, store-bought game, or a game created by your circle or hearth leader or an older Scout.
- \_\_\_\_\_ 11. Find or create another activity related to this badge. Get one of your leaders to approve the activity, and then complete the activity.

**Award Completed:** \_\_\_\_\_

**Scout Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Adult Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Gardening (FireFlies)



### *Required:*

- \_\_\_\_\_ 1. Learn and identify the main parts of a plant: petals, leaf, stem, and root.
- \_\_\_\_\_ 2. Grow a plant from a seed (beans, pumpkins, and herbs work well).
- \_\_\_\_\_ 3. Make a soda bottle compost to learn about composting. Check the temperature and record changes to the biological matter in the bottle weekly for a 4-week period. Share the results with your circle or hearth.

### **OR**

Assist an adult or older scout with maintaining a working compost pile for a 4-week period. Share with your leader, circle or hearth what happens to the volume of materials, the changes materials go through, whether moisture is necessary, and what happens to temperature within a functioning compost pile.

### *Optional (Pick 3):*

- \_\_\_\_\_ 1. Learn the meanings of five gardening terms.
- \_\_\_\_\_ 2. Grow your own garden or help an adult or older Scout grow a garden. Share some of your harvest with your circle or hearth. You can have fun and experiment with different garden themes if you like. You can grow a “salad bowl” garden, a “dessert garden” or even a “pizza garden.”
- \_\_\_\_\_ 3. Visit a nursery, greenhouse, botanical garden, or conservatory. Did you see any unique or unusual plants? Share the experience with your circle or hearth.
- \_\_\_\_\_ 4. Make a garden collage, mosaic, mobile, etc. to show something you’ve learned about plants.
- \_\_\_\_\_ 5. Do this simple experiment with a leafy houseplant to demonstrate that plants need sunlight to survive:
  1. Make sure your houseplant is in a sunny location and choose one leaf that gets a lot of sun.
  2. Fold a piece of black construction paper in half and on the fold cut out a shape big enough to cover the leaf. You should now have a leaf-shaped card you can open and close.
  3. Sandwich the leaf in the card so both sides of the leaf are covered and tape the opening closed. Make sure you don’t add too much tape -- you will need to take it off in a week.
  4. A week later, carefully remove the construction paper from the leaf. What happened to the leaf? Why does a plant need sunlight to survive?
- \_\_\_\_\_ 6. Create your own plant. You can do this in a way that works best for you (a drawing, model, etc.) as long as you show all parts of the plant. Is your plant edible? Is it carnivorous like a Venus Flytrap? Give it a name and tell your circle or hearth what your plant can do.
- \_\_\_\_\_ 7. There are several Native American legends about the “three sisters” planting method. Read or have read to you one of the legends and share the legend with your circle or hearth in any way you choose.
- \_\_\_\_\_ 8. Learn about terrariums. Plant a terrarium and share it with your circle or hearth. How did you choose your plants?

- \_\_\_\_\_ 9. Play a plant game. This can be a computer game, store-bought game, or a game created by your circle or hearth leader or an older Scout.
- \_\_\_\_\_ 10. Read a book about gardens or gardening.
- \_\_\_\_\_ 11. Find or create another activity related to this badge. Get one of your leaders to approve the activity, and then complete that activity.

**Award Completed:** \_\_\_\_\_

**Scout Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Adult Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Gardening (SpiralScouts)



### **Prerequisites:**

\_\_\_\_\_ Complete the Gardening badge as a FireFly

**OR**

- \_\_\_\_\_ 1. Show that you know the main parts of a plant: petals, leaf, stem, and root.
- \_\_\_\_\_ 2. Have experience growing a plant from a seed.
- \_\_\_\_\_ 3. Have experience with a soda bottle compost or a working compost pile. Know what happens to the volume of materials, the changes materials go through, whether moisture is necessary, and what happens to temperature within a functioning compost pile.

### **Required:**

- \_\_\_\_\_ 1. Create a garden plan. Draw a diagram of your garden and show where you intend to plant each plant. Make sure you leave adequate space between plants.
- \_\_\_\_\_ 2. Research different gardening methods (container, row planting, raised beds, roof top gardening, vertical gardening, window box gardening, square-foot gardening, dry farming, etc). Choose one gardening method, plant a garden, and care for it for a minimum of 3 months. Make sure you plant the proper plants for your area and have the space and time to work with your garden. If you do not have access to a yard, container gardening or window box gardening may be viable options.
- \_\_\_\_\_ 3. Learn about different composting methods (worm composting in bins and towers, composting heaps, sheet composting, etc) and/or methods of soil remediation. Explain one of these methods to your circle or hearth.

### **Optional (Pick 3):**

*A scout who got credit for a requirement at an earlier level will need to do additional research, teach younger scouts, or do the requirement in a different way in order to get credit for it a second time for a later level badge.*

- \_\_\_\_\_ 1. Learn about your local climate and growing conditions. This can be done by looking through a seed catalog, talking to a neighbor or local growing association, doing online research, etc. Make a poster, collage, mobile, etc. of plants you can grow locally.
- \_\_\_\_\_ 2. Visit a nursery, greenhouse, botanical garden, or conservatory. Did you learn anything that will help you create and maintain your own garden? Share the experience with your circle or hearth.
- \_\_\_\_\_ 3. Plant a rhizome, tuber, or bulb and share with your circle or hearth the difference of each.
- \_\_\_\_\_ 4. Plant 3 different kinds of vegetables or flowers from seed. Share the vegetables/flowers with your circle or hearth.
- \_\_\_\_\_ 5. Research 5 different insects that will eat away at your garden, or that are beneficial to your garden. Discover what organic and natural ways of combating these insects you may have to use if you are trying to keep them away, or how you can attract them and keep them happy if they are beneficial. Share the information with your circle or hearth.
- \_\_\_\_\_ 6. Plant seeds in your own homemade peat pellets! You will need unflavored gelatin, 10 lbs of potting mix with a high peat content, and a small, empty

can with both ends removed, such as a tomato paste can. Here's how you make them:

1. Boil about a pint of water. Add one packet of gelatin mix and stir until dissolved
2. Remove the mixture from heat and allow to cool. Once it has cooled, add it to your potting mix. Mix until the mixture begins to hold together.
3. Put the can on a hard, flat surface and fill half-way with the mixture. Press down hard with a flat surface (the lid of the can works well).
4. Make an indentation in the center where your seed will go.
5. Allow to dry and harden or use right away while it's still wet.
- \_\_\_\_\_ 7. Make a diagram, mobile, drawing, etc to show the lifecycle of a plant.
- \_\_\_\_\_ 8. Keep a gardening journal. Record what you've planted, the way the plants change and grow (you may want to record when they first sprout if you're growing them from seed, when they first blossom, when you harvest them, etc.), and any problems you encountered (pests, fungus, etc.) and what steps you took to solve those problems.
- \_\_\_\_\_ 9. Design and create reusable plant markers for your garden and label each plant or group of plants.
- \_\_\_\_\_ 10. Donate some of your crop to a local soup kitchen, veteran's home, food bank, family in need, etc. If you grew a flower garden instead of a vegetable garden you can make floral arrangements and deliver them to a nursing home, assisted living facility, hospice, etc.

**OR**

Get involved in an advocacy or activist organization working for food security, seed saving and biodiversity, community gardens, edible schoolyard, etc.

- \_\_\_\_\_ 11. There are many plant myths and legends throughout the world. Learn about 3 of these myths or legends and share one with your circle or hearth. You may tell the story orally, create an illustrated story, present a puppet show, etc.
- \_\_\_\_\_ 12. Learn about terrariums. Plant and maintain a terrarium for 3 months. Share your terrarium with your circle or hearth and explain how and why you chose the plants for it, and whether it is an open or closed terrarium.
- \_\_\_\_\_ 13. Build a simple greenhouse or cold frame. This can be done very inexpensively, often with things you already have in your home.
- \_\_\_\_\_ 14. Play a plant game or create a game to help younger Scouts identify the parts of a plant.
- \_\_\_\_\_ 15. Read a book or watch a documentary that pertains to gardening,
- \_\_\_\_\_ 16. Find or create another activity related to this badge. Get one of your leaders to approve the activity, and then complete that activity.

**Award Completed:** \_\_\_\_\_

**Scout Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Adult Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Gardening (PathFinders)

### Prerequisites:

\_\_\_\_\_ Complete the Gardening badge as a SpiralScout

**OR**



- \_\_\_\_\_ 1. Show that you know the main parts of a plant: petals, leaf, stem, and root.
- \_\_\_\_\_ 2. Have experience growing a plant from a seed.
- \_\_\_\_\_ 3. Have experience with a soda bottle compost or a working compost pile. Know what happens to the volume of materials, the changes materials go through, whether moisture is necessary, and what happens to temperature within a functioning compost pile.
- \_\_\_\_\_ 4. Have created a garden plan, including a diagram of the garden showing plant placement and spacing between plants.
- \_\_\_\_\_ 5. Have experience with a particular gardening method (container, row planting, raised beds, roof top gardening, vertical gardening, window box gardening, square-foot gardening, dry farming, etc): choosing plants appropriate for your area and method, planting the garden and caring for it for a minimum of 3 months.
- \_\_\_\_\_ 6. Show that you know about different composting methods (worm composting in bins and towers, composting heaps, sheet composting, etc) and/or methods of soil remediation, and be able to explain one of these methods in more detail.

### Required:

- \_\_\_\_\_ 1. Plan, plant, and maintain a garden for at least 3 months. Learn about and incorporate some eco-friendly methods in your garden. Discuss your options with your circle or hearth leader and choose at least 2 of the following:
  - Companion gardening (the book *Carrots Love Tomatoes: Secrets of Companion Planting for Successful Gardening* by Louise Riotte is a good resource)
  - Heirloom gardening
  - Beneficial insects (importing and/or attracting them)
  - Seed saving
  - Mulching
  - Amending soil and organic fertilizers
- \_\_\_\_\_ 2. Create and maintain a composting system for a minimum of 3 months. If you do not have access to a yard, worm composting in a bin is a viable option that takes up very little space. If possible, use some of the compost you produce in your garden. Bring some compost into your circle or hearth. How does the texture compare to that of soil? Explain to your circle or hearth how you created your compost system and what was involved in maintaining it.

- \_\_\_\_\_ 3. Our world is facing a water crisis. Research this issue. Why is this a problem and what impact could it potentially have on mankind? Explore various water conservation options you can use in your own garden and implement at least one of these options. Options include, but are not limited to setting a timer on a sprinkler, watering during the cooler parts of the day, setting up a soaker hose or “drip” system, rainwater harvesting, mulching, group planting based on water needs, etc. Discuss with your circle or hearth why water conservation is an important aspect of responsible agriculture, which method(s) of water conservation you chose to use in your own garden, why you chose those options, and whether or not there are other water conservation efforts you plan to implement in the future.

**Optional (Pick 3):**

*A scout who got credit for the requirement at an earlier level will need to do additional research, teach younger scouts, or do the requirement in a different way in order to get credit for it a second time for a later level badge.*

- \_\_\_\_\_ 1. Learn the difference between annuals, bi-annuals, and perennial plants. Grow a perennial from seed, cutting, division, or rhizome, and maintain the plant for a minimum of 3 months.
- \_\_\_\_\_ 2. Learn about different types of natural fertilizers and the cycles of fertilizing your plants. Share with your circle or hearth how you are fertilizing your garden.
- \_\_\_\_\_ 3. Learn how to prepare a garden for the winter season in your area. Learn how to keep your plants safe from the frost and cold (thus extending the gardening season) and/or how to put a garden “to bed.”
- \_\_\_\_\_ 4. Learn how hydroponics can be used to grow plants without soil.
- \_\_\_\_\_ 5. Learn about plant diseases that are common in your area. Where did they come from? What problems do they cause, and what can you do about them? Share this information with your circle or hearth.
- \_\_\_\_\_ 6. Learn about terrariums. Plant and maintain a terrarium for 3 months. Share your terrarium with your circle or hearth and explain how and why you chose the plants for it, and whether it is an open or closed terrarium.
- \_\_\_\_\_ 7. Keep a gardening journal. Record what you’ve planted, the way the plants change and grow (you may want to record when they first sprout if you’re growing them from seed, when they first blossom, when you harvest them, etc.), and any problems you encounter (pests, fungus, etc.) and what steps you took to solve those problems.
- \_\_\_\_\_ 8. Make your own rainwater harvesting system and use it to water your garden.
- \_\_\_\_\_ 9. Assist or intern with a local gardener **OR** take a gardening/agriculture class through a college, your county cooperative extension service, etc.
- \_\_\_\_\_ 10. Create a game to help younger Scouts identify the parts of a plant.
- \_\_\_\_\_ 11. Teach a younger Scout about gardening and either assist them with their garden or allow them to assist you with your garden.
- \_\_\_\_\_ 12. Donate some of your crop to a local soup kitchen, veteran’s home, food bank, family in need, etc. If you grew a flower garden instead of a vegetable garden you can make floral arrangements and deliver them to a nursing home, assisted living facility, hospice, etc.
- OR** Get involved in an advocacy or activist organization working for food

security, seed saving and biodiversity, community gardens, edible schoolyard, etc.

- \_\_\_\_\_ 13. Choose one of the following topics to research and present the information to your circle or hearth:
- What are the benefits of CSAs and farmer's markets? What are they? Why are they important? How does supporting local farms vs. buying produce in a grocery store help not only our local economy, but our environment as a whole?
  - What is biodiversity? What could happen if our crops are not diversified (what are the dangers of monocultures)? Could we face a global version of Ireland's Potato Famine? What is the difference between Heirloom seeds and Genetically-Modified seeds? What impact do Genetically-Modified seeds have on the environment and on the future of our food supplies?
  - What is the Pavlosk Agricultural Station or the Svalbard Global Seed Vault? What is their history, and why is their work so important?
  - What are some political influences/impacts on farming and the environment? What can the individual do as a consumer and voter to elicit positive change?
  - What is Permaculture and what are Food Forests? Discuss the 7-8 layers, polyculture vs. monoculture, guilds, productivity of the edge, and design principles.
  - Learn about a historical period of multi-year droughts and how it affected a civilization of the time, such as those during the Medieval Warm Period and how they affected the Mayans or Anasazi, or those of the 20th century (such as the Dust Bowl Drought 1933-1940). What irrigation and agricultural methods were used? Why were these unable to cope with the drought?
  - Learn about urban or peri-urban gardening, either historical (such as the intensive urban gardens of 19th century Paris, or the Victory Gardens of WWII), or current innovations being proposed. Discuss the methods used and how well they work to keep city dwellers fed with locally grown food.
  - What is the Biosphere 2 project? Why was it built and what have scientists learned from the Biosphere 2? Discuss the early missions of Biosphere 2, and how it is being used for research now.
- \_\_\_\_\_ 14. Build a simple greenhouse or cold frame. This can be done very inexpensively, often with things you already have in your home.
- \_\_\_\_\_ 15. Visit a nursery, greenhouse, botanical garden, or conservatory. Did you learn anything that will help you create and maintain your own garden? Share the experience with your circle or hearth.
- \_\_\_\_\_ 16. Read a book or watch a documentary that pertains to gardening, permaculture, plant origins, soil, drought or water issues.
- \_\_\_\_\_ 17. There are many plant myths and legends throughout the world. Learn about 3 of these myths or legends and share one with your circle or hearth. You may tell the story orally, create an illustrated story, present a puppet show, etc.

\_\_\_\_\_ 18. Find or create another activity related to this badge. Get one of your leaders to approve the activity, and then complete that activity.

**Award Completed:** \_\_\_\_\_

**Scout Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Adult Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## Resources the Badge Committee Found Useful for Gardening

Different types of composting: <http://compostscoop.com/different-types-of-composting-403>

Soda bottle composting: <http://compost.css.cornell.edu/soda.html>

Soda bottle composting: <http://homebiology.blogspot.com/2009/06/soda-bottle-compost.html>

Monitoring the composting process:

<http://compost.css.cornell.edu/monitor/monitoring.html>

How to make a worm composting system: <http://www.wikihow.com/Make-Your-Own-Worm-Compost-System>

Environmentally friendly gardening:

[http://www.findingdulcinea.com/guides/Homes/Gardening.pg\\_02.html](http://www.findingdulcinea.com/guides/Homes/Gardening.pg_02.html)

Green Gardening: <http://www.docstoc.com/docs/32653797/GREEN-GARDENING-ENVIRONMENTALLY-FRIENDLY-ALTERNATIVES>

How to make a rainwater harvesting system: <http://howtomakearainwaterbarrel.com/>

Organic gardening: <http://organicheirloomgardening.com/>

Soil & soil amendments (great info!)

[http://midwestgardentips.com/soil\\_amendments.html](http://midwestgardentips.com/soil_amendments.html)

Beneficial insects: <http://beneficialinsects101.com/>

Seed saving: <http://gardening.about.com/od/gardenmaintenance/a/SeedSaving.htm>

Gardening terms kids should know: <http://www.life123.com/home-garden/kids-gardening/plant-science/gardening-terms-kids-should-know.shtml>

Plant life cycle: <http://www.life123.com/home-garden/kids-gardening/plant-science/understanding-the-basic-plant-life-cycle.shtml>

Houseplant science projects for kids: <http://www.life123.com/home-garden/kids-gardening/plant-science/houseplant-science-projects-for-children.shtml>

Make your own peat pellets: [http://www.ehow.com/how\\_2050760\\_make-peat-pellets.html](http://www.ehow.com/how_2050760_make-peat-pellets.html)

Water conservation: <http://www.goinggreen-forlife.com/water-conservation.html>

Water conservation ideas: <http://www.greenthumbarticles.com/article/Water-Conserving-Gardening--The-Golden-Rule-for-Saving-Water-in-the-Garden-a2957.html>

Gardening Tips for Conserving Water: <http://www.dummies.com/how-to/content/handy-tips-for-conserving-water.html>

Terrariums: <http://www.disabled-world.com/artman/publish/terrarium.shtml>

Terrariums: <http://thegardenhelper.com/terrarium.html>

Terrariums (step by step for smaller kids from National Geographic):

<http://kids.nationalgeographic.com/kids/activities/crafts/miniature-garden/>

Permaculture: <http://www.permaculture.org/nm/index.php/site/classroom/>

[http://www.permaculture.com/book\\_menu/136/137](http://www.permaculture.com/book_menu/136/137)

Global Seed Bank:

[http://www.absoluteastronomy.com/topics/Svalbard\\_Global\\_Seed\\_Vault](http://www.absoluteastronomy.com/topics/Svalbard_Global_Seed_Vault)

Biosphere: [http://en.wikipedia.org/wiki/Biosphere\\_2](http://en.wikipedia.org/wiki/Biosphere_2)

Master Gardener programs: [http://en.wikipedia.org/wiki/Master\\_gardener\\_program](http://en.wikipedia.org/wiki/Master_gardener_program)

Peri-Urban Gardening: <http://tclocal.org/2010/06/visioning-county-food-prod-5.html>

Some good gardening links: <http://www.cityfarmer.org/schgard15.html>

<http://www.worldfoodgarden.org/>

Micro-Greens: <http://sproutpeople.org/seeds/microgreens.html>

Build an easy Greenhouse: <http://www.instructables.com/id/Build-an-Easy-5-x-5-Home-Greenhouse-for-under-25/>

Unheated, movable greenhouse: <http://www.instructables.com/id/Unheated-movable-seed-starting-greenhouse/>

Greenhouses from old windows: <http://www.instructables.com/id/Greenhouse-From-Old-Windows/>

Mini seedling greenhouse out of an old container: <http://www.instructables.com/id/Mini-seedling-greenhouse/>

Multiyear Droughts - [http://www.ncdc.noaa.gov/paleo/drought/drght\\_history.html](http://www.ncdc.noaa.gov/paleo/drought/drght_history.html)

An excellent book on the topic of the medieval warm period: Brian Fagan, [The Great Warming: Climate Change and the Rise and Fall of Civilizations](#).

Community Gardens - <http://www.communitygarden.org>

Biodiversity and Seed Saving: <http://www.seedsavers.org/>,

<http://www.seedalliance.org/Advocacy/>,

<http://www.croptrust.org/main/>

Some Documentaries: [The Botany of Desire](#), [The Garden](#), [The Future of Food](#), [Dirt! The Movie](#)

Some Books: Suzanne Ashworth, [Seed to Seed: Seed Saving and Growing Techniques for Vegetable Gardeners](#), Eliot Coleman: [The Winter Harvest Handbook: Year Round Vegetable Production Using Deep Organic Techniques and Unheated Greenhouses](#), Gene Logsdon, [Holy Shit: Managing Manure to Save Mankind](#), Toby Hemenway, [Gaia's Garden: A Guide to Home-Scale Permaculture](#), David R. Montgomery, [Dirt: The Erosion of Civilizations](#), Jeff Lowenfels and Wayne Lewis, [Teaming with Microbes](#), Steve Solomon, [Gardening When It Counts: Growing Food in Hard Times](#)

Biology of Plants from Missouri Botanical Garden - has parts of a plant as well as a quiz of what we eat comes from what part of a plant - <http://www.mbgnet.net/bioplants/>

How to Make Compost - Does not include the Soda Bottle or Worm Tower -

<http://www.compostguide.com/>

Kids Gardening - <http://www.kidsgardening.com/>

