



# PHS Girl Scout Patch



Planting seeds,  
growing lives

GROW, EXPLORE, LEAD



**PHS** PENNSYLVANIA  
HORTICULTURAL  
SOCIETY

**girl scouts**  
of eastern  
pennsylvania





# PHS Girl Scout Patch

## Planting seeds, growing lives: GROW, EXPLORE, LEAD

In working toward the PHS Patch, girls will gain knowledge and skills to promote greening and its power to improve lives, build relationships, and transform communities.

### General Girl Scout Requirements:

Each age level requires completion of a different number of activities from this workbook. After your troop has completed the necessary requirements, please visit the Council retail stores to purchase patches. The staff there will verify that requirements have been completed.



### Please complete the appropriate number of activities for your age level:



**Daisies and older** – 3 activities, one from each category: Grow, Explore and Lead



**Brownies and older** – 6 activities, two from each category: Grow, Explore and Lead



**Juniors, Cadettes and older** – 8 activities, two from each category: Grow, Explore and Lead plus two of your choice



**Seniors/Ambassadors** – 10 activities, three from each category: Grow, Explore and Lead plus one of your choice

## Planting Seeds, Growing Lives: GROW, EXPLORE, LEAD Activities

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## Activity 1: Wildflower seed balls

A seed ball consists of a special mud mixture made with wildflower seeds. It can be placed in areas where the troop would like to start a greening project. In time, the mud mixture will eventually break down and, when the conditions are right, the seeds inside the ball will start growing in their new location.

### For this activity you will need the following materials:

- Wildflower seeds
- Compost
- Water
- Newspaper
- Shovel or Stick
- Powdered Clay (red or brown)
- Trowel
- Gloves
- Tub or Wheelbarrow

### Other Resources:

<http://www.guardian.co.uk/environment/video/2008/apr/25/seedbombing>

[http://en.wikipedia.org/wiki/Seed\\_ball](http://en.wikipedia.org/wiki/Seed_ball)

The Guerilla Art Kit by Keri Smith. ISBN: 1568986882

1. Collect the seeds. You can find all kinds of seeds on the ground under trees and flowers that are done blooming (be sure to choose non-invasive species). You can save seeds from the fruits and vegetables you eat at home, too. Maybe you can find seed packets that were not used or purchase them on sale in late summer.
2. In a big tub or wheelbarrow, mix in 2 parts mixed seeds with 3 parts compost. Stir with stick or garden tool.
3. Now add 5 parts clay, stir again.
4. Add water until you are able to squeeze the mixture (with your hands) into small balls that keep their shape. Make 1-inch diameter seed balls. (Those gloves might come in handy now.)
5. Set the seed balls onto sheets of newspaper until they are dry, usually about 24 to 48 hours.
6. That's it! The balls do not need to be buried or watered, or even dispersed anytime soon. Whenever they find a spot of dirt and the climatic conditions are right, they will self-germinate.
7. As a troop, decide how and where to launch your seed balls. You can walk your neighborhoods and toss them onto patches of soil in abandoned lots that could use some greening. Maybe you want to sell them at a craft fair? Or give as gifts to family and friends.
8. Write a poem or song about making your wildflower seed balls.

## Activity 1: Wildflower seed balls (continued)

### For juniors and older:

9. Make a map of the locations where the seed balls were distributed and revisit them to monitor their progress. Note which seeds germinated and flourished. Since the seed balls will need to make it on their own (without ongoing care), using native seeds will prove more successful.
10. Research Masanobu Fukuoka and “natural farming”. Write a one-page paper about this concept and distribute with ready-to-launch seeds balls.



## Activity 2: Garbage Gardening

In this activity girls will have the opportunity to grow plants from root crops that have been used in cooking.

### For this activity you will need the following materials:

- Carrots
- Turnips
- White or sweet potatoes
- Beets
- Onions
- Pineapples

### Other Resources:

<http://www.gardeningknowhow.com/special/children/garbage-gardening-ideas.htm>  
<http://naturalsociety.com/grow-garden-garbage-5-things-plant-food-scrap/>  
<http://themindunleashed.org/2014/05/grow-garden-garbage-5-plants-grow-food-scrap.html>

- Carrots or other root crops, such as turnips or beets, make a great garbage garden project for the kids. You will need carrots with the tops intact and about 2 inches of carrot. Fill a container with pea gravel or the like, water and place the carrots, cut side down, on top. Celery can also be grown from the cut base.
- Add a little sunshine and the end results are beautiful ferny leaves sprouting out of your centerpiece.
- Also try the water glass suspension which can be attempted with yams, sweet and white potatoes. Look for a potato with eyes and poke several toothpicks into the spud. Place this in a glass of water, wherein the water only touches the lower 1/3 of the potato, and then leave in a darkened area until you begin to see sprouting.
- Move the sprouting spud into the light and watch it grow. You can also try this method with green onions, leeks, garlic and even lemongrass for an edible garbage garden.
- Record your findings on a regular basis and journal the results to share with your troop.
- Enter your plant in the PHS Junior Flower Show.

## Activity 3: Pizza garden

Have the troop plant seeds to grow herbs and vegetables that will later be used as pizza toppings. You can have them plant the seeds in an outdoor garden bed or in small pots placed in a sunny windowsill indoors. Make sure the girls are working with healthy soil and spaces that allow for drainage.

**For this activity you will need to collect the following materials:**

- Soil
- Popsicle Sticks
- Ceramic or Plastic Flower Pots w/ Saucers
- Seeds
- Watering Can

### Other Resources:

<http://www.reneesgarden.com/articles/pizza.html>  
<http://containergardening.about.com/od/vegetablesandherbs/ss/PizzaGarden.htm>  
[http://vegetablegardens.suite101.com/article.cfm/grow\\_a\\_pizza\\_garden](http://vegetablegardens.suite101.com/article.cfm/grow_a_pizza_garden)

1. Decide which herbs and vegetables your troop would like to grow. Don't forget to consider the space you have to grow in. You might like basil, green peppers, chives, hot peppers, oregano, thyme, and tomatoes.
2. Sow your seeds according to the packet instructions and water as often as needed.
3. Use the popsicle sticks to write down the names of the seeds you have planted and stick them in the soil near each row or pot of seeds so you will know where each variety of plant is.

Assign all troop members certain days to check on the herbs and vegetable plants and water them when they are dry. Also be sure they pull weeds if they appear in your garden and pots.

After several weeks of careful tending to the garden, you may find the plants are ready to be harvested. Find a recipe for a good homemade pizza and plan the place, date, and time to prepare, cook, and enjoy your troop's garden pizza! (You might decide to use a pre-made plain cheese pizza and add the home-grown toppings.)

## Activity 4: Vermiculture, what's that?

Vermiculture is the controlled growing of worms in specialty structures. Similarly, vermicomposting uses red wiggler worms (*E. foetida*) to decompose plant wastes into castings. In short, explain to the troop that they're to become worm farmers! Maintaining a worm farm does not require a lot of time, it does not smell, and it will make your gardens thrive. (Just remember to keep the wriggly worms in a place that will not be too cold in the winter.)

There are many websites, videos, and books that will teach you how to make and maintain your own worm farm for composting. The earth911.com website includes instructions and troubleshooting information.

<http://earth911.com/blog/2007/04/02/composting-with-worms/>

Only a few things are needed to make good worm compost. Materials include a bin, bedding, worms, and worm food (kitchen scraps).

### Other Resources:

<http://earth911.com/blog/2007/04/02/composting-with-worms/>

<http://www.deq.state.la.us/portal/tabid/2101/Default.aspx>

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

<http://urbanext.illinois.edu/worms/facts/index.html>

- Before starting this project, have the Girl Scouts ask friends and neighbors if they have a worm farm, where it is kept, and their experience with vermiculture.
- Ask the Girl Scouts to do some research on earthworms to discover the role of earthworms in nature and how non-native earthworms affect our environment.
- Now create a display board with the Girls Scouts' research findings; include information on how they plan to build their worm farm and what materials will be used.
- Decide where the bin will be placed and how the bedding, food supply, and castings will be monitored. There may be certain weeks that each Girl Scout takes the bin and is responsible for its upkeep.
- Once all supplies are obtained, plan a day for the worms to arrive and to assemble your worm farm. Take photos or video of the project. Now you can add these photos to your display board.
- Find a state fair or nature event where the Girl Scouts can take their worm farm and display board so that they can explain and educate others about vermiculture.
- You may find that you could sell the worm castings as a fundraising project for your troop



## Activity 5: Green 'n' Grow: Tree Propagation

Propagate a tree from a stem cutting, seed or seedling and display in the PHS Junior Flower Show. Get a cutting, seed or seedling from your Troop Leader and follow the instruction for care.

### For this activity you will need the following:

- Tree cutting, seed or seedling provided by Troop Leader
- Soil/Sand
- Rooting compound
- Small container with drainage
- Water
- Well lit window

### Other Resources:

<http://plantpropagation.com/cuttings.htm>  
<http://plantpropagation.com/easyfallpropagationtechniques.htm>  
<http://plantpropagation.com/whichtechnique.htm>  
<http://www.treehelp.com/how-to-grow-a-tree-or-shrub-from-seed/>

### Cuttings

- Make sure to orient the cutting with the upward-growing end pointing up.
- Dip the downward end into rooting compound.
- Place cutting in soil mix or sand, according to instructions.
- Tree should be placed in a sunny location.
- Water as directed.
- Record observations of tree and root growth.
- Enter your plant in the PHS Junior Flower Show.

### Seeds (See treehelp link under "Other Resources")

- Start with a clean 3-4 inch pot.
- Fill with seed starting mix.
- Check seed pack to determine how deep to plant seed.
- Make sure seed has a source of good light and warmth.
- Water seeds from bottom of container.
- Check daily.

## Activity 5: Green 'n' Grow: Tree Propagation (continued)

### Seedlings

- Fill pot with planting soil mixture.
- Mist the soil mix with water.
- Use a pencil to make a hole in the soil.
- Lower seedling into new pot making sure roots are spread out.
- Place in a sunny place and water only when dry.



## Activity 6: Take a hike

Troop will take a hike and observe the sights and sounds of nature. Each Girl Scout should take a journal and a camera for taking notes and pictures. Scout out a nice hiking trail that offers plenty of wildlife, trees, creeks, and hills. Spend the better part of a day experiencing nature.

### Other Resources:

<http://www.trails.com/activity.aspx?area=10867>  
<http://www.dcnr.state.pa.us/stateparks/recreation/hiking.aspx>  
[http://www.slackpacker.com/map\\_pa.html](http://www.slackpacker.com/map_pa.html)

1. Capture pictures of plants, fungi, animals, waterfalls, shadows—anything that is beautiful and inspiring. Don't forget to take some group pictures, too.
2. Sketch and write in your journal. You may feel moved to write a poem or song.
3. Spend some time sitting quietly by yourself and see what you observe. You will probably notice things you would have missed just walking by. Select a patch of ground the size of your hand. Observe it for a few minutes. Have you seen anything move? What is growing here?
4. Find something near you that is: red, brown, green, and yellow. Draw, photograph or describe it.
5. Make a list of all the different bird calls you hear, all the types of animals you see, and gather a few leaves and ferns that you can press in between the pages of your journal.
6. You could bring along a waste-free lunch (see The Footprint Project on page 21).
7. At the end of the day, write in your journal how you felt before, during, and after your nature hike. Did getting out into nature change your mood, attitude, or stress level?

At a later Girl Scout meeting, ask the girls to read excerpts from their "Take a Hike" journals, share poems or inspirational moments, and show off their pressed plants.

## Activity 7: Photography in the healthy forest

For this activity, the troop will record the wonders of a forest through your camera. Capture the excitement of a tree's budding branch, a meadow of flowers in a woodland clearing, the teeming life on a decomposing log or the forest after a storm. Walk around your neighborhood or local park and look for the shapes, patterns and colors of trees. Try to identify the components of a healthy forest. Capture that on film and print your favorite photo or collage of photos on paper or with a photo mat.

### For this activity you will need the following materials:

- Camera, iPad or phone
- Photo paper
- Cardstock or photo mat for mounting

### Other Resources:

<http://www.trails.com/activity.aspx?area=10867>

<http://www.dcnr.state.pa.us/stateparks/recreation/hiking.aspx>

[http://www.slackpacker.com/map\\_pa.html](http://www.slackpacker.com/map_pa.html)

1. Take a picture of a forest or trees and print it out.
2. Make a frame by mounting your photo on cardstock or a photo mat.
3. If you have selected a photo title, include it on your frame.
4. Enter your work in the PHS Junior Flower Show.



## Activity 8: Trees, shrubs, and flowers... oh my!

In this activity, have the troop survey their neighborhood for the variety of plant life that lives among us.

### Other Resources:

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

<http://www.arborday.org/trees/whattree/easterntrees.cfm>

[http://forestry.about.com/cs/treeid/a/100\\_trees\\_id.htm](http://forestry.about.com/cs/treeid/a/100_trees_id.htm)

<http://www.arborday.org/trees/whattree/WhatTree.cfm?ItemID=E6A>

[http://www.ces.ncsu.edu/depts/hort/consumer/factsheets/trees-new/common\\_namesa\\_c.html](http://www.ces.ncsu.edu/depts/hort/consumer/factsheets/trees-new/common_namesa_c.html)

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

1. Look at the trees and flowers in your neighborhood. Do some have characteristics that you like? Ask family members and neighbors to help you identify the plants and start a list of favorites.
2. Gather some leaves or flowers and press them between the pages of a large book.
3. Once the leaves are dry, place them into a notebook or scrapbook with glue and label each plant in your collection.
4. Make notes on why you chose them as favorites and where you collected the leaves.

### For juniors and older:

5. Find out which plants on your list are native to your area and which are non-native plants.
6. Conduct research to determine the benefits of native plants and why non-natives can be troublesome.
7. Talk to some plant nurserymen (and women!) in your community and ask their opinions about your favorite trees, shrubs, and flowers. Ask them why they think 'greening' with the right plants is important.
8. Create a flyer (based on your research) that contains a list of the best performing native plants suggested for greening and beautification in your area. Include plants that should be avoided. Ask your local nursery and garden centers if they will distribute your flyer to their customers or post it in their store.

## Activity 9: Bark rubbing journal

A bark rubbing is made by holding or (gently) taping a sheet of paper over a section of tree bark and rubbing the paper with a crayon, charcoal pencil, or chalk. The result shows a rough pattern that is created by the texture of the tree bark. This activity is meant to show the troop the diversity of trees in their immediate neighborhood. If you conduct your rubbings at a park, arboretum, or private property, be sure to get permission beforehand.

### For this activity you will need to collect the following materials:

- Paper
- Crayons
- Stapler
- Tape
- Charcoal Pencil or Chalk

### Other Resources:

[http://www.lookoutscout.co.uk/index.php?action=cms.bark\\_rubbing](http://www.lookoutscout.co.uk/index.php?action=cms.bark_rubbing)  
[http://www.ehow.com/how\\_2159079\\_bark-rubbing.html](http://www.ehow.com/how_2159079_bark-rubbing.html)  
<http://www.sageoxford.org.uk/barkrubbing.htm>  
<http://www.treeblog.co.uk/viewpost.php?id=213>

1. Use a variety of colors and a different sheet of paper for each tree.
2. Label each bark rubbing with the type of tree.
3. Make a cover for your journal of bark rubbings, put your names, troop number, and date on the cover.
4. Gather all the pages and the cover of your journal and staple them together along the left edge.

### For juniors and older:

5. In your journal, include other notes and facts about the trees from which you took rubbings. Include the place where you conducted the bark rubbings, the Latin name of the tree, the overall height and width for the species. Sketch the overall shape of the tree; you might collect and draw the seeds and fruit it bears.
6. Make additional bark rubbings and create greeting cards with them.

## Activity 10: Tree identification

This activity shows the characteristics that are useful in identifying trees. Have the girls complete the worksheet below. Brownies can complete the worksheet together, as a troop.

### Other Resources:

<http://www.arboday.org/trees/whattree/easterntrees.cfm>  
[http://forestry.about.com/cs/treeid/a/100\\_trees\\_id.htm](http://forestry.about.com/cs/treeid/a/100_trees_id.htm)  
<http://www.arboday.org/trees/whattree/glossary.cfm>  
<http://www.arboday.org/trees/whattree/WhatTree.cfm?ItemID=E6A>  
[http://www.ces.ncsu.edu/depts/hort/consumer/factsheets/trees-new/common\\_namesa\\_c.html](http://www.ces.ncsu.edu/depts/hort/consumer/factsheets/trees-new/common_namesa_c.html)

There are many things to look for when identifying trees, including seeds, buds, fruits, and leaves. First, define these tree-related terms to help you know exactly what you're looking for.

Petiole: \_\_\_\_\_

Leaf Margin: \_\_\_\_\_

Conifer: \_\_\_\_\_

Deciduous: \_\_\_\_\_

Evergreen: \_\_\_\_\_

Lobes: \_\_\_\_\_

Alternate leaves: \_\_\_\_\_

Compound leaves: \_\_\_\_\_

Opposite leaves: \_\_\_\_\_

## Activity 10: Tree identification (continued)

Start your own tree identification book. Using a small spiral-bound book, sketch the leaf shapes of these eight or 16 trees. Put one type of tree per page and label each one.

(You can substitute trees on this list with trees you find near you.)

- Red Oak
- Beech
- Tulip Poplar
- Cottonwood
- Mulberry
- River Birch
- Dogwood
- Red Maple

### For juniors and older:

- Aspen
- Sycamore
- Osage Orange
- Black Locust
- Buckeye
- Black Walnut
- Boxelder
- Willow



## Activity 11: Why trees are important

Trees provide many benefits. This activity will help the troop understand the many ways tree are so valuable. Have the troop fill out the form below to learn more, and have them discuss their answers.

### Other Resources:

<http://www.arborday.org/kids/kidsdif.cfm>

<http://www.arborday.org/trees/benefits.cfm>

[http://www.treesaregood.com/treecare/tree\\_benefits.aspx](http://www.treesaregood.com/treecare/tree_benefits.aspx)

[http://www.treelink.org/docs/29\\_reasons.phtml](http://www.treelink.org/docs/29_reasons.phtml)

[http://www.umassgreeninfo.org/fact\\_sheets/plant\\_culture/stressedtrees.pdf](http://www.umassgreeninfo.org/fact_sheets/plant_culture/stressedtrees.pdf)

<http://easttexasgardening.tamu.edu/Homegardens/treestress.html>

1. Do you prefer sitting under a leafy shade tree in the summer or would you rather spend time on a concrete parking lot?

Explain your answer: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. If you learned that trees were able to purify the air we breathe by absorbing pollutants, taking in carbon dioxide, and releasing oxygen, would you like to see more trees planted along streets and highways where you live?

Explain why: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3. If your family had to move to a new house, would you rather your new home had several trees on the property or no trees at all? Explain your decision:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Activity 11: Why trees are important (continued)

4. Which do you think has the capability to absorb more water from a rainstorm into the ground and prevent flooding: paved areas or areas with trees and mulch? Why? \_\_\_\_\_

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5. Make a list of animals that rely on trees for shelter and food:

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6. List three ways you can help trees: \_\_\_\_\_

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As individuals or in groups, have the girls write and perform a skit. Ask them to "imagine a young girl who has arrived in a mysterious place where there are no trees." How would she react? What does she miss about trees? Have them perform for one another.

## Activity 12: Riparian buffer diorama

This activity examines the numerous benefits that a riparian buffer offers to surrounding land. Riparian buffers are streamside forests that offer many benefits for wildlife; but they also improve water quality for humans. In general, the wider and more diversely planted the buffer, the more likely it is to yield positive benefits. Make a diorama of a riparian buffer and explain the benefits of it.

### For this project you will need:

- Shoe box or another base for diorama
- Colored cardstock or construction paper
- Pipe cleaners
- Plastic grasses, trees or animals
- Natural and colored sand
- Glue
- Scissors

### Other Resources:

<http://www.3dgeography.co.uk/#!/rainforest-dioramas/cf72>  
[http://www.firstpalette.com/Craft\\_themes/Nature/dioramaplants/dioramaplants.html](http://www.firstpalette.com/Craft_themes/Nature/dioramaplants/dioramaplants.html)  
<http://www.smallartworks.ca/Gallery/Riparian/Riparian.html>  
<http://extension.psu.edu/natural-resources/wildlife/habitat-management/pa-wildlife-16-riparian-buffers-for-wildlife>

1. Use the base to design the bank of river or stream.
2. Place the sand, paper or other materials to form land areas.
3. Place the native grasses, trees and accessories on the land areas.
4. Include the three zones of a riparian buffer.
5. Attach a written description of the benefits of a riparian buffer.
6. Enter your project in the PHS Junior Flower Show.



## Activity 13: Support a community service project

Involving youth in community service is such an important lesson. Volunteering builds character in the individual, benefits the community, and teaches the value in fostering relationships.

### Some green service projects you might find:

Planting trees in a public park  
Trash pick-up in public places  
Trail maintenance at parks  
Painting benches and trash cans at bus stops or train stations  
Planting flowers, weeding, or mulching flower beds at senior citizen centers  
Adding birdhouses, bee houses, toad houses, and butterfly houses in parks

### Other Resources:

<http://www.actionfornature.org/>  
<http://servenet.org/>  
<http://www.volunteermatch.org/search/>  
<http://parenting.kaboose.com/behavior/emotional-social-development/community-service-for-kids.html>  
[http://www.servicelearning.org/instant\\_info/kids\\_teens/index.php#](http://www.servicelearning.org/instant_info/kids_teens/index.php#)  
<http://www.dot.state.pa.us/Internet/Bureaus/pdHwyBeau.nsf/infoAdoptHighway?readform>  
[http://www.projectwildlife.org/gardens\\_toadhouse.htm](http://www.projectwildlife.org/gardens_toadhouse.htm)  
<http://www.diyilife.com/2008/04/11/avant-yard-toadily-easy-toad-houses/>

- Compile a list of the suggested organizations offering volunteer opportunities for your age group.
- Ask the troop members to look for community service projects that they would like to undertake. At a troop meeting each Girl Scout should present her idea for a project.
- Have the troop vote on at least three projects to donate their time to during the next year.
- Plan the dates and times for the community service projects and promote your troop's participation (by notifying the local newspapers, news stations, etc.)
- Take photos and/or videos of the Girl Scouts before, during, and after their community service project is complete.
- Evaluate the impact the project had on the community. What things worked well and what needs improvement?
- Post the photos and descriptions of the work on the Girl Scout website or other youth websites or blogs, and don't forget to forward them to the newspapers, too.
- Celebrate your efforts and start planning the next community service project.

## Activity 14: Calendar of environmental events

Have the troop create a calendar of events that celebrate the environment. Lead them in research to find activities over the next year that your community could take part in observing. Ask permission to post their monthly calendars in public places (libraries, schools, shopping centers, etc.) so the community will become more aware of environmental issues that are important to your troop.

You may copy pages from a calendar or have the girls draw their own. Add events on the appropriate date (locations and time for local events) that relate to trees, Earth Day, global warming, endangered species, conservation, air and water pollution, recycling, and other issues to which they would like to bring attention.

Include information about your Girl Scout troop. Have the girls draw their own art on the calendars or add stickers.

Don't forget to have them replace the calendars each month at each location posted.

### Other Resources:

<http://www.gpen.org/events.cfm>  
[http://www.girlscouts.org/program/program\\_opportunities/environment/environmental\\_events.asp](http://www.girlscouts.org/program/program_opportunities/environment/environmental_events.asp)  
<http://www.globalstewards.org/calendar.htm>  
<http://www.environmental-expert.com/events.aspx>



## Activity 15: The Footprint Project

Have the girls discover the size of their carbon footprint and see how their footprints compare with kids in other countries.

### Other Resources:

<http://www.globalstewards.org/reduce.htm>  
<http://www.globalstewards.org/reuse.htm>  
<http://www.globalstewards.org/recycle.htm>  
<http://www.timeforkids.com/TFK/kids/specials/articles/1,28285,1613313,00.html>

Did you know the choices you make every day about transportation, what you eat, what you use, and what you throw away all affect the environment and the size of your “carbon footprint” (the amount of pollution you create as an individual?)

1. Use this online calculator to measure the direct impact your lifestyle has on the planet.  
[http://www.zerofootprintkids.com/kids\\_home.aspx](http://www.zerofootprintkids.com/kids_home.aspx)

2. Are you surprised at the results? How does your score compare to other countries (select two other countries and compare the scores). \_\_\_\_\_

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3. Do you know how to pack a lunch that will reduce waste, rather than create more waste? Find out how by visiting this website. <http://www.globalstewards.org/lunch.htm>

4. Now create a nutritious lunch for school and explain how you will pack it. \_\_\_\_\_

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## Activity 15: The Footprint Project (continued)

1. Can you name the three “Re” words and give examples of each:

Re \_\_\_\_\_

Re \_\_\_\_\_

Re \_\_\_\_\_

2. List at least five things you can do reduce your footprint.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_

e. \_\_\_\_\_

## Activity 16: Community is...

This activity demonstrates various ways for the troop to think of and define a community.

What do you think of when you hear the word "community"? First, you might think of your neighborhood or town as a community. Perhaps you might also describe other groups you belong to as a type of community, such as your community of Girl Scouts, church community, soccer community, volunteer community, global community, etc.

### Other Resources:

<http://en.wikipedia.org/wiki/Community>

<http://polyland.calpoly.edu/OVERVIEW/Archives/derome/communities.html>

<http://www.4hwildlifestewards.org/creating%20your%20wildlife%20garden/native.htm>

1. What communities are you a member of? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
2. What makes a community strong? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. What are the characteristics of an ideal community member?  
\_\_\_\_\_  
\_\_\_\_\_
4. What roles do you play in the communities you are involved in?  
\_\_\_\_\_  
\_\_\_\_\_
5. What do you think would be included in a "Plant Community"?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
6. Make a poster. Draw a diagram with you in the center surrounded by the communities in which you are a part.



## Activity 17: Tree canopy and street tree inventory

This activity will provide an estimate of an area's tree canopy. A tree inventory is a count taken of trees in a defined area and lists the types of trees, their size, and condition. Some inventories will include a GPS position of each tree, too.

### Other Resources:

[http://en.wikipedia.org/wiki/Canopy\\_\(biology\)](http://en.wikipedia.org/wiki/Canopy_(biology))  
<http://www.milliontreesla.org/mtabout3.htm>  
<http://www.umass.edu/urbantree/factsheets/3treeinventory.html>  
<http://www.pittsburghforest.org/TreeInventory>  
<https://www.portlandoregon.gov/trees/?c=59508&a=424017>

What is tree canopy? Imagine that you are flying over the county where you live and looking down on the countryside. You see lots of things, but the tree branches and leaves you see (that block your view of the ground) make up the tree canopy.

Increasing the tree canopy can provide which of the following benefits?

**(check all that apply)**

- ☐ beautifies the community
- ☐ cleans the air and water
- ☐ decreases patients' hospital stay
- ☐ increases property values
- ☐ helps kids with ADHD pay attention
- ☐ increases girls' self-esteem
- ☐ makes PA a better place to live
- ☐ produces more leaves to rake
- ☐ provides shade to lower summer temperatures
- ☐ provides wildlife habitat

## Activity 17: Tree canopy and street tree inventory (continued)

Now have the troop conduct a street tree inventory.

1. Each Girl Scout should select an area to conduct the street tree inventory. This may be one or more city blocks in the town where they live (or nearby). Have them take pictures while conducting this inventory.
2. Have the girls count the number of street trees within your defined area. Use the form on the next page for the inventory (or you may create your own form). Each girl should fill in and sign a form to complete this activity.
3. Report any dangerous tree limbs or weak trees to your city or county officials.
4. The troop can now combine and analyze their findings. You may send copies of your inventory to your city manager's office or other interested departments and organizations.
5. Lead reflection on what was seen and inventoried and review the photos as a group.  
Is there a mix of young and old trees? \_\_\_\_\_  
\_\_\_\_\_

Can you tell which tree was the oldest one inventoried?  
\_\_\_\_\_  
\_\_\_\_\_

What will these areas look like in 20 years? 50 years? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Are there sites where the Girl Scouts could plant additional trees? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# STREET TREE INVENTORY

County

State

Zip

| Address | # Trees | Species | DBH | Height | Utilities | Condition | Sidewalk & Other Comments |
|---------|---------|---------|-----|--------|-----------|-----------|---------------------------|
|         |         |         |     |        |           |           |                           |
|         |         |         |     |        |           |           |                           |
|         |         |         |     |        |           |           |                           |
|         |         |         |     |        |           |           |                           |
|         |         |         |     |        |           |           |                           |
|         |         |         |     |        |           |           |                           |
|         |         |         |     |        |           |           |                           |
|         |         |         |     |        |           |           |                           |

**Address:** the address where street trees are located. If on an empty lot - use best guess.

**Tree #:** list number of street trees at each address. Count only street trees, which are within 10 feet of the street.

**Species:** identify type of tree, if stump or unrecognizable dead tree, write "Stump" or "Dead."

**DBH:** diameter at 4 1/2 feet above ground. Use calipers or cloth tape measure to wrap around trunk.

**Height:** estimate the height of the tree.

**Utilities:** overhead wires, yes or no.

**Condition:** enter G, P, D or C

G = Good, less than 25% dead wood

P = Poor, contains 25-50% dead wood

D = Dead or close, over 50% dead wood

C = Critical, imminent danger to public

**Sidewalk Raised:** if sidewalk is raised above grade by 1" or more in a pedestrian walkway, write in the measurement.

**Comments:** note any additional remarks about site or street trees.

Street Tree Inventory conducted by Girl Scout Troop #

List of Girl Scouts that participated:

Date:

Time Started

Time Finished

## Activity 18: New home with curb appeal

Provide a new structure that will be inhabited by birds, butterflies, or bats. Either build from scratch or purchase appropriate housing for mounting outdoors. (Consider using recycled materials, such as: milk/juice cartons, dried gourds, etc.) The troop should decide if they'd like to provide housing for birds, butterflies, or bats. Each of these animals prefers a different type of house in which to live.

### Other Resources:

<http://www.globalstewards.org/garden-ecotips.htm>  
<http://www.thebutterflysite.com/gardening.shtml>  
<http://www.birdhouses101.com/>  
<http://www.shawcreekbirdsupply.com/birdhouses.htm>  
<http://www.batconservation.org/content/Bathouseimportance.html>  
[http://www.eparks.org/wildlife\\_protection/wildlife\\_facts/bats/bat\\_house.asp](http://www.eparks.org/wildlife_protection/wildlife_facts/bats/bat_house.asp)  
<http://www.nwf.org/gardenforwildlife/bathouse.cfm>

1. Do some research to find out what materials are needed for your selected animal's house. Also determine what the shape of the house should be for that animal and make sure the type of entry and the opening are the correct size. Decide where and how your troop will hang or mount the new homes. Also think about the natural environment or habitat (water, food, and safety) each animal prefers. Make sure you know how high to hang each house, too.
2. Decide the best method to obtain materials or unfinished wood products. You might consider using gourds – which you could grow as part of a troop garden project.
3. Have the troop write a report from your research and keep a chart that lists the houses, the materials needed, and the type of animal that would live in it and other information you would like to track (such as expenses). You could also include a column in your chart indicating where each house is to be placed when complete.
4. Now you should be ready to plan a day for building and decorating the new homes. You may need to schedule another day for the installation and ask some parents to assist. See who can bring ladders, hammers, nails, etc. Consider adding some of your new houses in public spaces, parks, roadsides, etc.
5. Your troop may also want to add plants around the newly installed homes that will attract the types of birds and butterflies that will live there.