

Project Instructions – Potting Hemlock Seedlings in Newspaper Cups

This activity, in which the participants pot a hemlock seedling to take home or plant on campus, generally occurs at a SGH Education Station at a kids festival. Participants who accept a seedling should be willing to take responsibility for helping it grow up healthy.

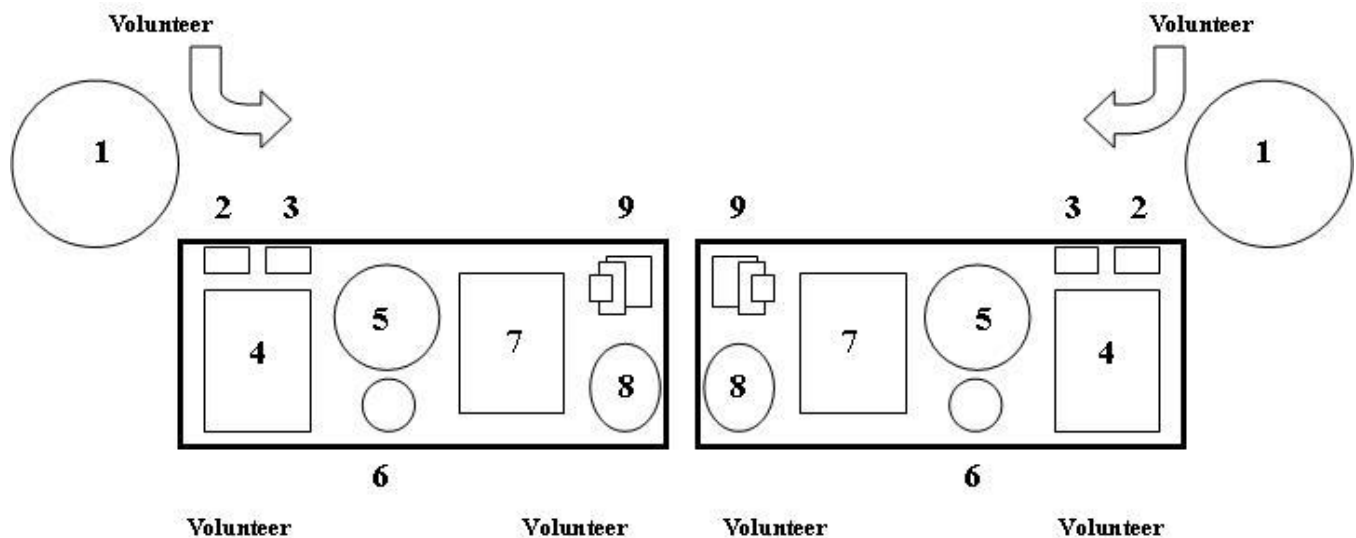
Goal: Participants will learn the role of trees (and hemlocks in particular) in the environment and appreciate the importance of protecting and preserving them.

Objectives: Participants will be able to:

1. Recognize hemlock trees and describe their habitat.
2. Explain why hemlocks are important environmentally and economically.
3. Name the invasive insect (hemlock woolly adelgid) that’s threatening our hemlocks and the two primary methods for saving the trees.
4. Name some ways the students can protect the environment in general and the hemlocks in particular.

Materials for Activity: See Checklist for Potting Hemlock Seedlings in Newspaper Cups.

Preparation: Soil mix and initial watering mix should be prepared in advance as indicated in the Checklist for Potting Hemlock Seedlings in Newspaper Cups. Then set up two potting stations as shown in the diagram below so kids enter from the ends and work toward the middle. Each potting station can accommodate 24-48 kids.



1. Large bag of newspaper cups	4. Container of soil mix
2. Quart-size baggies	5. Bucket of seedlings in water
3. Permanent marker pens	6. Small container of Soil Moist
<i>Note: If kids make their own newspaper cups, insert them into baggies, and write their names on them before coming to potting station, these 3 items can be eliminated from table.</i>	
	7. Container of soil mix
	8. Gallon of initial watering mix, with more under the table
	9. Sets of handouts



Opening Questions

- 1. How many of you like trees? Why?**
Personal opinion
- 2. What are some of the important things trees do?**
Provide homes, food, shelter, protection, and places to raise young for birds, squirrels, insects, and other animals.
Provide shade and keep the planet cool, keep our homes cool, make our mountain communities beautiful.
Trees remove CO₂ from the air and produce oxygen so we can breathe (photosynthesis).
Produce food and other useful products.
Help prevent erosion by holding the soil with their root systems.
Help keep our water supply clean by intercepting pollutants in the soil before they reach our streams and rivers.
- 3. What are the two main categories of trees?** Hint: It has to do with whether or not they keep their leaves in winter.
Deciduous and evergreen.
- 4. Why are evergreen trees such as Hemlocks really important?**
They perform these functions year-round, even in winter.
They also provide shade the soil so woodland plants can survive and keep streams cool and clear so fish can live in them.
- 5. What would happen if we had no trees?**
Everything under #2 would stop; some plants and animals including people would have a hard time existing.
- 6. Have any of you heard that Hemlocks are in danger of being wiped out? Does anyone know why?**
The Hemlock is under attack by an invasive insect called the Hemlock Woolly Adelgid (HWA), which sucks the sap from the tree and eventually kills it. "Invasive" means it doesn't normally occur here but was introduced from somewhere else, Japan and China in the case of the Woolly Adelgid.
- 7. Do you know why invasive species are particularly troublesome?**
Because there are no local natural predators to keep them in balance.
- 8. Do any of you know how to recognize the Hemlock Woolly Adelgid?**
(Show photos of infested branches and progression of damage and sample infested branch in baggie if available.) The first sign of a HWA infestation is the tiny white woolly egg sacs on the underside of the branches. As the tree sickens, its color turns from bright green to drab gray-green, it ceases to put on new spring growth, the foliage becomes thin, branches die, and finally the whole tree dies.

Making newspaper pots (see diagram on page 3)

Note: To minimize time spent on this activity, newspaper pots can be made in advance and brought to event.)

Planting the seedlings in newspaper pots

1. Fill the newspaper pot 1/2 full with the dirt mixture.
2. Place the seedling in the pot, making sure all the roots are against the dirt.
3. Sprinkle a tiny pinch of Soil Moist onto the roots.
4. Add another inch of the dirt mixture on top of the roots and press down firmly with your fingers.
5. Add a small amount (1/4 cup) of the watering mix. If this causes the roots to become uncovered, add a little more dirt and press down.

Closing Questions and Handouts

1. Do you remember why hemlocks are important?
2. Do you remember the name of the insect that is attacking them?
3. Do you remember how to recognize the woolly adelgids on a hemlock? What should you do if you see them?
4. Will you promise to plant and take good care of your little seedling? What else can you do to help protect the environment?
1. Give each participant a copy of the handouts. Read care instructions aloud and discuss selection of planting site, preparation of hole, planting of tree, watering, and first-year care.
Note: Make arrangements for students who don't have a place to plant at home.
5. Encourage them to talk with their families about today's lesson and start thinking about other ways they can help our environment.
6. Present a Hemlock Hero Certificate to each participant and explain the commitment we hope for as they grow up to be our future environmental leaders

How to Make Newspaper Planting Pots



1. Lay full sheet of newspaper flat and tear it in half.



2. Fold sheet in thirds lengthwise so 2/3 of it is a double layer and 1/3 is still a single layer.



3. Turn paper so fold is away from you.



4. Lay can on folded edge of paper with open end away from you and protruding beyond the newspaper by 1/2 inch.



5. Roll newspaper around the can LOOSELY.



6. Apply a short piece of masking tape on the seam to keep the newspaper from unrolling.



7. Turn the newspaper-wrapped can upside down on the work surface with the open end facing down.



8. Fold the newspaper down at the closed end of the can, like wrapping a present.



9. Apply a small piece of masking tape to keep the ends in place.



10. Gently remove the can from the newspaper pot.



11. Ask each student to write their name on a quart-size baggie with permanent marker and insert it into the baggie.

12. Then students should proceed to the potting station.