

How Does Your Garden Grow?

Pre-/Post-Visit Activities



TEACHER GUIDE

Thank you for registering for the Family Garden Workshop *How Does Your Garden Grow?* During this workshop, your students will learn how to plant seeds, seedlings, or bulbs. They will water, mulch, and tend to plants as they learn where vegetables come from. These pre- and post-visit activities and resources are designed to prepare your students for the trip and extend the learning after your visit. The activities address New York State Science Standard 1 and New York City Science Performance Standards S2b, S2c, S2d, S5b, S5f, and S7b.

PRE-VISIT ACTIVITY IDEAS

Food Origins

Students sort pictures of foods to learn whether they come from plants or animals.

Materials:

- magazines about cooking, or pictures of food
- scissors
- chart paper
- markers

Have students cut out pictures of food. Select several pictures and ask students where these foods come from. Identify the sources as either being from a plant or animal. Make a large chart containing two columns, one labeled plant and the other labeled animal. Elicit the origin of each food, and place each picture in the correct column.

- *Were more of the food images from plants or animals?*

Trace the path of plant foods from the garden or farm, to the processing plant, and finally to the supermarket and the kitchen table.

Look Inside a Seed

Students observe the inside of a seed.

Materials:

- lima beans
- hand lens
- cup of water
- paper towel or paper plate

Soak lima beans in a cup of water for 2-3 hours. Distribute a lima bean and paper towel or plate to each student. Have students place their bean on a paper towel and carefully peel off the *seed coat* that covers and protects the seed. Students should open their seed using their fingers. Using a hand lens, students may observe the *baby leaves* and *tiny root* that make up the *baby plant* found inside.

- *Discuss how new plants develop from seeds.*
- *Have students draw and label what they observe inside the seed.*
- *Why do you think a seed is sometimes referred to as a promise?*

POST-VISIT ACTIVITY IDEAS

Grow a Sponge Salad

Students grow a simple crop of tasty greens without soil.

Materials:

- new clean sponge
- shallow dish
- cress seeds

Rinse sponge several times in water and place in a shallow dish. Sprinkle cress seeds on the sponge. Add water. Have students make predictions about whether plants would grow on a sponge.

By the following day the seeds will crack, by the third day roots will appear, and by the fourth day leaves will appear. Check that the sponge remains moist, and add water as needed.

Within two weeks you should be able to harvest the cress by snipping off the tops with a scissor. The cress tastes like chile pepper and can be added to a salad.

- *Have students measure and record growth rate and plant height every other day.*
- *Have students describe how the cress tastes.*

Grow a Grocery Garden

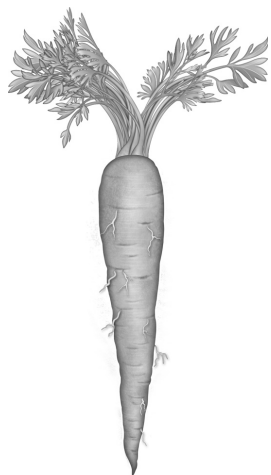
Students deepen their understanding of Japanese plants and artistic traditions by painting a watercolor image of a Japanese landscape.

Materials:

- carrot with greens attached
- hand lens
- shallow dish or pot
- pebbles and charcoal

Cut about one inch off the top of a carrot with the greens still attached, and remove any leaves. Place the carrot cut end down into a shallow pot filled with pebbles, using the pebbles to hold the carrot upright. Several small pieces of charcoal may be added to the bowl to absorb any odors. Fill the pot with water until the pebbles are almost covered. Place the pot in a sunny spot. Other roots such as beets, turnips, radishes, and even pineapple may be planted following the same procedure.

- *Have students record daily observations in a journal. New leaves and roots may be counted, new growth measured, and changes in the plants can be described in words or drawings.*



Soda Bottle Worm Farm

Students will construct a worm farm to observe worms at work.

Materials:

- 2-liter soda bottle
- plastic tray for drainage
- shredded newspaper
- grass, shredded leaves,
- fruit or vegetable scraps
- one dozen red worms (red wigglers) from Carolina Biological, Connecticut Valley, or a local gardening store or bait shop
- scissors, nail, pliers, flame
- black construction paper

Measure 8 inches up from the bottom of a soda bottle and cut off the top. The top should be able to slip over the bottom. Using pliers, heat the nail to burn several small drainage holes in the bottom of the bottle. Wrap a sleeve of black paper over the entire bottle.

Prepare bedding for the worms by shredding black and white sheets of newspaper into 1-inch strips. Soak in water and squeeze out excess. Mix in pieces of leaves, grass, and soil. Fill the bottom portion of the bottle to the top with bedding. Fluff the bedding to avoid clumps.

Add worms to the bottle. Do not use earthworms or night crawlers. Put the top portion on the bottle and cover with black paper to keep out light. Place a plastic tray under the bottle to collect excess water.

Give the worms a few days to adjust to their new home. During this time they will develop a big appetite.

Have students cut fruit and vegetable scraps into thin slices. Bury the scraps at least 1 inch deep. Never add meat or dairy.

Maintain the worm farm by adding water whenever the bedding begins to dry out. When the worm population gets too high, some of the worms should be removed. Worms may be placed in a new farm or returned to the soil outdoors.

- *Have students observe the worm farm several times per week.*
- *Students should record observations of decomposition*
- *How do earthworms help soil and plants?*
- *How do earthworms protect themselves from predators like birds?*
- *Why must worms hide from the sun?*

RECOMMENDED TEACHER RESOURCES

Hanneman, Monika, Brian Johnson, Tracet Patterson, and Barbara Kurland. *Gardening with Children.* New York: Brooklyn Botanic Garden, 2007.

Morris, Karyn, and Jane Kurisu. *The Jumbo Book of Gardening.* Darby, P.A.: Diane Publishing Company, 2007.

Kite, L. *Gardening Wizardry for Kids.* Happpague, N.Y.: Barron's Educational Series, 1995.

RECOMMENDED BOOKS FOR CHILDREN

Cole, Henry. *Jack's Garden.* New York: HarperCollins Publishers, 1997.

Pfeffer, Wendy. *Wiggling Worms at Work.* New York: Harper Collins Publishers, 2003.