



Nurture Nature Center, located in Easton, Pennsylvania, created an Urban Garden in a small parking area using recycled and found materials to demonstrate low-cost growing techniques for small urban areas. This fact sheet is part of a series that demonstrates ways in which urban gardens can bring nature into their worlds.

Terrarium Habitats

What is a terrarium? A terrarium is a vessel, sealed or unsealed, which contains a living habitat, or ecosystem. This habitat might include plants, fungi, lichens, isopods (such as pill bugs), beetles, spiders, earthworms, amphibians (such as salamanders), reptiles (such as turtles), crickets, and more.

Before you start: Having a terrarium is a responsibility. Before you introduce plants or animals to your terrarium, understand their needs. Pill bugs need moisture, shade, and decomposing organic matter; earthworms need soil and organic matter; plants need sunlight and water; salamanders are carnivores, and feed on small insects, worms, and eggs.



Types of Terrariums

A Garden Under Glass

The simplest type of terrarium to maintain is one with plants and soil. Moisture-loving plants, such as mosses, ferns, and tropicals, will perform well in a closed terrarium. If you use succulents or desert plants, your terrarium should be open to the air.

- **Drainage:** A 2- to 3-inch base layer of pebbles will keep your terrarium from becoming waterlogged.
- **Other additions:** A ½-inch layer of charcoal under the soil helps to prevent algae from developing. You can also add a layer of sphagnum moss, moistened and then squeezed dry, under the soil. This will soak up excess moisture.
- **Soil:** For a plants-only closed terrarium, you can use a container mix consisting of peat or coir, and perlite and/or vermiculite. A succulent terrarium should contain a soil/sand mix.
- **Plants:** Use purchased plants, and your chances of introducing fungi, bacteria, and insects will be minimal.
- **Light:** Plants need light, but direct sunlight may cause a deadly heat buildup. Artificial or indirect sunlight may be fine. You can move your terrarium to a sunnier spot in winter, when sunlight is limited.

A Natural Habitat Terrarium

Consider the soil ecosystem of the typical backyard garden. It is teeming with earthworms, ants, sow bugs, grubs, springtails, and microscopic bacteria, fungi and nematodes. If you use garden soil in your terrarium many of these organisms will be present. This is not a bad thing, as it will allow you to observe their behaviors.



Sow bugs and pill bugs are easy to find and collect.

- **Drainage:** A 2- to 3-inch base layer of pebbles will keep your terrarium from becoming waterlogged.
- **Soil:** Mix garden soil with a lighter natural material, such as sand or gravel, to prevent it from becoming compacted.
- **Plants:** Collect mosses, small ferns, tiny tree seedlings, and other small plants. The garden soil will undoubtedly contain seeds of plants that may germinate on their own. You can allow them to grow, or not, depending on how they compete in your habitat.
- **Animals:** You can choose to add soil animals to your terrarium if they do not appear on their own. Pill bugs and earthworms are two low-maintenance choices. Dried leaves, twigs, and chunks of bark will provide dark, moist crevices for soil animals, as well as the rotting plant matter they need to survive.
- **Light:** Plants need light, but direct sunlight may cause a deadly heat buildup. Artificial or indirect sunlight may be fine. You can move your terrarium to a sunnier spot in winter, when the sunlight is limited.

A Terrarium for Larger Animals

Keeping frogs, turtles, or salamanders alive in a terrarium is a commitment, and requires a larger space than a plants-only terrarium, such as an aquarium. Research the needs of the animal before you introduce it. You may need to supplement the natural food sources of your terrarium (worms and other soil animals) with fruits, snails, crickets, or purchased pellets.

Terrarium Maintenance

The beauty of a terrarium is that it needs little maintenance. Water a closed terrarium only occasionally, when you notice the condensation on the glass drying up. Observe your plants and, if present, animals, and move the terrarium to a lighter or darker location if they experience distress. Add or take away elements to maintain a good balance. At some point, after a year or so, you may want to dismantle the terrarium, and rebuild it.

A Few Fun Additions to a Terrarium

Miniature landscape elements, such as mini-fences made from toothpicks, or “stone” structures made of oven-baked clay.

Found natural objects: shells, stones, acorns, lichens, bones.

Small figurines, marbles, or glass balls.

Venus fly traps