

Terrarium: Your Personal Mini-Garden

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Introduction:

A growing awareness of the health benefits of plants has led to a recent increase in the popularity of terrariums in urban home gardens. English botanist Dr. Nathaniel Bagshaw Ward made an unintentional discovery in 1842 while trying to raise a moth pupa in a tightly closed glass container. During the day, the jar would warm-up and cool at night. He spotted some fern and moss plantlets growing after a week. After that, he decided to grow some exotic plants in a similar closed container and observed that more plants survived in those closed containers. These containers were later known as the “Wardian containers” and now we call them “Terrarium”. These containers opened the doors for elaborate research on different ecosystems.



Terrariums made of transparent glass serve as the basis for a self-sustaining ecosystem that can be partially open or closed to allow the appropriate amount of light and heat in. The container has several drainage layers that help to keep moisture contained within. It is also known as the 'Garden under the Glass'. By serving as a miniature glasshouse, terrariums mimic the glasshouse effect. Consequently, the glass walls can capture heat generated by direct or indirect light sources. Because the container is closed, the soil and the plant inside absorb some of the heat. It results in the release of thermal radiation. However, the heat energy remains trapped inside the container. As a result, the container keeps the heat inside. The moisture in the potting soil and the plant leaves evaporate during this process. The moisture is gathered and condensed on the roof and walls of the container. Condensed water vapours return to the container and mimic the natural rainfall.

Materials Required

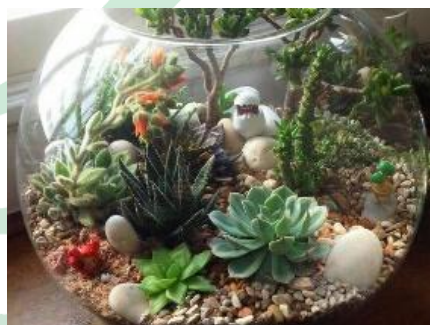
- Traditionally, glass containers such as fish bowls, mason jars, and round flasks are used. However, more recently glass containers having different geometric shapes, wooden containers/trays, or plastic containers are in use.
- Potting mix made with clean, sterilized peat moss (Sphagnum), cocopeat, vermiculite (Phyllosilicate mineral), perlite (volcanic rock) for aeration and holding moisture.
- Gravel and small crushed stones for better drainage
- Horticulture grade Charcoal
- Tweezers for digging up holes in growth media and moving plant material.
- Long sticks to support plant material
- Long spoon for placing growth media into the container
- Scissors for effective trimming and pruning
- Bulb type sprayer
- Terrarium plants
- Decorative figurines, colored stones

Types of Terrarium

1. **Closed type** is the classic type of terrarium designed to retain heat and humidity for maintaining a tropical environment. Ferns, mosses, and epiphytes are grown.
2. **Open type** of terrarium usually houses arid plants or even succulents and cacti.



Closed Type



Open type

Instructions for constructing a Terrarium:

- Choosing a container is the most critical and crucial step in making a terrarium. Glass containers (sometimes wooden/plastic ones) can accommodate all the components of the terrarium. A few things to keep in mind are the size of the

container (there is no maximum or minimum size), the shape of the container (one can be creative when choosing shapes such as a flat-based glass container, a flask, a bottle or a geometric shape), size of the opening, ranging from a wide mouth to a narrow mouth.



- Choosing plants is another key step. Usually, miniature plants like Fittonia, Adiantum, Boston fern, Echeveria, Oxalis, and Chondrus are most preferred, but larger plants such as Philodendron can sometimes be used if the terrarium is bigger.

Plant material used:

S.No.	Plant (Scientific Name)	Common Name
1.	<i>Philodendron scandens</i>	Heart leaf/ Sweet Heart
2.	<i>Selaginella spp.</i>	Spike moss
3.	<i>Fittonia spp.</i>	Nerve plant
4.	<i>Crassula ovate</i>	Jade plant
5.	<i>Nephrolepis</i>	Boston fern
6.	<i>Chondruscrispus</i>	Irish moss
7.	<i>Adiantum spp.</i>	Maidenhair fern
8.	<i>Echeveria spp.</i>	Hens and chicks
9.	<i>Kalanchoetomentosa</i>	Panda plant
10.	<i>Oxalis spp.</i>	Oxalis

Pro-Tip

Plants having a slow growth rate should be preferred and they must be placed inside the terrarium without touching its walls.

- Adding the drainage layers will decide the fate of the terrarium. A terrarium usually doesn't have any drainage holes so different layers should be added to ensure proper

drainage. A 0.5 to 2-inch high layer of gravel is placed at the bottom of the container. This is followed by a thin layer of Horticulture grade charcoal for aiding in drainage, moisture retention, and keeping the odor away.



- Potting mixture -The third layer of peat moss or coco peat is added generously (as much as you want) over the charcoal using a long thin spoon.

Pro-Tip

Never add a potting mixture pre-incorporated with fertilizers and always ensure that the soil level is low enough to hold the plants precisely inside the container but without touching the walls or roof of the closed container.

- When placing plants into the container, the design should be decided in advance. This will ensure that there is no confusion during the placement of plants, To create an interesting contour you should always choose spots for tall and short plants separately so that there is no confusion during placement of plants.

Pro-Tip

If a plant is extremely rooted, chop off extra roots before planting to retard the growth of the plant.

- Adding the plants determines the final look of your terrarium. You should therefore decide where you want your plants to be placed prior to planting. Place your plants in the potting mix by gently patting the potting mix around them to eliminate air gaps and to secure your plants in place.

- Decoration: Ceramic, terracotta figurines, colored stones, or even mosses (Irish moss) can be used for decoration.
- Watering: It is to be done with the help of a spray bottle or atomizer.

Pro-Tip

Always make sure that your plants are just damp but not soaked in water.

- Aftercare: For ensuring the success of your Terrarium you must avoid overgrowth of the plants by ensuring periodic trimming and pruning of the overgrowing/dead/yellow parts of the plants. Watering must be done carefully in the closed containers as there are no drainage holes because too much humidity can lead to bacterial and fungal growth inside the container. Always keep your terrarium away from direct sunlight, a heat source, and dim light.

Conclusion:

Terrariums can act as self-sustaining mini-ecosystems to maintain an aesthetically gratifying indoor miniature garden. Having a closed environment and natural moisture recycling, these mini jungles require low maintenance.