

Mini Milwaukee Domes Greenhouses



Introduction

The Domes, also known as the three greenhouses that make up the Mitchell Park Horticultural Conservatory, are one of Milwaukee's most famous landmarks. Create your own mini greenhouse to sprout seeds!



Think About This:

How do greenhouses help plants grow?

Materials

- A piece of paper
- A writing utensil
- Seeds of any kind
 - No need to buy seeds! Seeds left over from fruit or dried beans work well
- Paper towel
- A clear container that seals, such as a Tupperware®, a jar with a lid, or a zipper sandwich bag
 - If you don't have a clear container that seals, a clear cup turned upside down over a plate can be used

Do Ahead of Time:

- Collect seeds from any fruits you may eat in your house
 - Apples, pears, oranges, squash, or peppers would all work
- On a piece of paper, draw a table with three columns and at least 10 rows to make a data sheet. This is where you will track seed growth and other observations.
 - Each day, record if you see root growth from the seeds and what the roots look like. Observe if you can see the greenhouse working—look for water droplets or fog in the container and feel if it is warm.

Seed Growth?	Greenhouse Observations
Day 1	
Day 2	
Day ...	
Day 10	

Directions:

Create a mini greenhouse to sprout seeds in.

- 1 Wet a single piece of paper towel and squeeze out the extra water so that it is damp but not dripping.
- 2 Fold the paper towel in half with the seeds in the middle. Using one layer of paper towel will let the seeds be visible.
- 3 Place the paper towel with seeds in the clear container and seal. If using a zipper bag, make sure there is some air left in it.

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- 4** Put the container somewhere, such as near a window, that it can get light.
- For a Tupperware®, this may mean placing it upside down so that the lid is on the bottom in a sunny spot. For a Ziploc® bag, this may mean taping it to a window. Be creative!



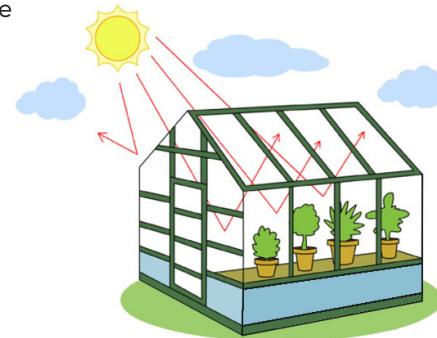
- 5** Check on the mini greenhouse and seed growth once a day and record your observations on your data sheet. Be patient – it can take over a week for some seeds to sprout roots!

What's Happening?

A greenhouse is a see-through structure that plants are grown in. Plants need 5 things to grow: **sunlight, water, air, nutrients, and the right temperature**. Greenhouses allow sunlight in, trap heat and moisture, and protect plants from extreme cold, rain, and pests.

Greenhouses use energy from the sun to stay warm. When sunlight enters a greenhouse through the see-through walls, it heats the ground, air, and anything else inside. Since the greenhouse is sealed, the warm air cannot escape and the temperature in the greenhouse rises.

The container in this project acted as a greenhouse because



it allowed sunlight in to warm the damp paper towel, seeds, and air trapped inside. Since the container was sealed, the warm air could not escape and helped the seeds stay warm at night without sunlight. Moisture from the damp paper towel trapped in the container gave the seeds the water they needed, but also helped control the temperature. The mini greenhouse gave the seeds what they needed to grow: a warmer temperature, a moist environment, air, and sunlight. For your seeds to continue growing, they need to be planted in soil to get the final ingredient: **nutrients**!

Milwaukee Domes Facts

- The Milwaukee Domes are the only conoidal (roughly cone-shaped) greenhouses in the world. This shape allows for sunlight to hit the plants at a more direct angle and gives taller trees more room to grow than traditional dome-shaped greenhouses.
- The Domes have no ‘floor’—the plants grow straight into the Milwaukee soil.
- No pesticides are used in the Domes—they have beneficial insects and toads to take care of any pests!
- Each of the three Domes has 2,200 triangular glass panes.
- During the summer months, the Domes are too good at trapping heat and the hot air must be drawn out with large fan systems.

Take it Further

After the seeds have a few days of root growth, plant them outside or in a small container with some dirt. You can place a clear container over it (while it fits!) to continue to see the effects of a greenhouse!

Want to learn more about the Domes? Visit **Domes @ Home** at <https://milwaukeedomes.org/domes-home>. Domes @ Home has virtual tours, educational videos, coloring activities, and more.