

MAKE IT MONDAY:

Indoor Garden



Overview

Plants need key ingredients to grow: water, soil, air and sunlight. There are many ways to grow plants in atypical environments like indoors, Antarctica, or even the International Space Station. Hydroponic gardening is a method of growing plants without soil. To make a true hydroponic garden, try replacing the soil with 10-15 cotton balls and adding a fertilizer solution to the water.

Soda Bottle Garden Materials

- 1 2-liter bottle
- Knives or Scissors to cut bottle in half
- Material to make wick (old t-shirt, socks, felt, or other absorbent material)
- Soil
- Water
- Seeds– We recommend trying lettuce seeds or herb seeds (like basil)
- Sunny space

Soda Bottle Garden Instructions

See page two for instructions

Alternative “Bean Bag” Garden Activity Materials

- Zip lock bag(s)
- Paper towel(s) or Paper Napkin(s)
- Dried bean(s) *We recommend dried lima beans but any dried bean will work.*

Alternative “Bean Bag” Garden Activity Instructions

- Soak paper towel in water and then wring out. Fold and place inside zip lock bag.
- Place a lima bean seed inside zip lock bag, squeeze out all the air and zip shut.
- Place one zip lock bag in sunny spot. You could try taping it to a window.
- Observe beans and make notes daily on Observation Sheet.
- Challenge Activity: If you have materials to make a two or three more “bean bag gardens,” place one in shade (in a closet or inside a paper bag). You could also try placing one in the refrigerator if want to experiment with temperature. Keep track of how these seeds compare to your “sunny” seed. What do you notice?

Discussion Questions:

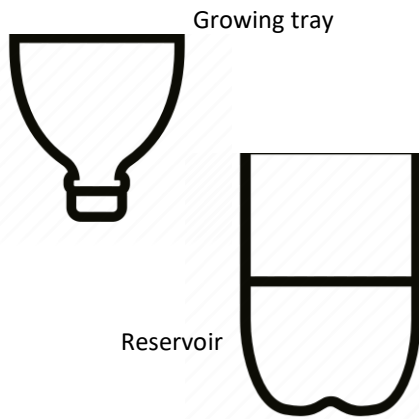
- What does a plant (really, truly) need to grow?
- Why might people want to grow plants hydroponically (without soil) rather than use traditional gardening/ farming methods?
- Are scientists really growing plants in space? Do plants grow in Antarctica?

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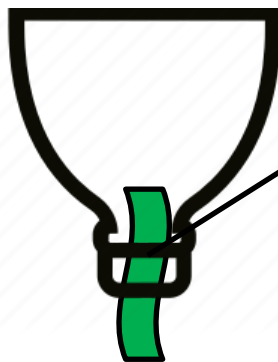
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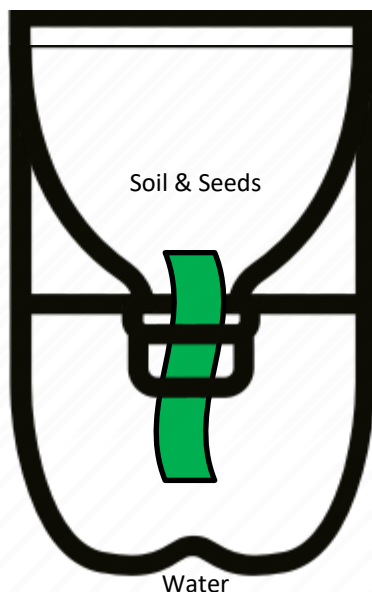
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Soda Bottle Hydroponic Garden

Step One: With an adult's help, cut a soda bottle so that the top half can be inverted (turned upside down) and fit inside the base of the bottle. The top of the soda bottle will be what holds the soil and the seeds; we call it the "grow tray." The grow tray should be at least 4 inches long. The base of the bottle will be what holds the water; we call it the reservoir.



Step Two: Make a wick. The wick will help transport, or carry, water from the reservoir through the soil and to the roots of the plant. The wick should be made from fabric that can absorb water. Some recommended materials are an old sock or t-shirt. You want to make a piece big enough that it will block the soil from falling into the water. The wick should be long enough so that at least one inch will extend into the water once the reservoir is filled. Try knotting material to keep the wick in place.



Final Steps: It is time to add soil, seeds, and water.

- Add potting soil to your grow tray. Moisten the soil by pouring 1 cup of water over it. You can also use this as a test to make sure the wick will prevent soil from falling out.
- Add water to the reservoir.
- Invert the growing tray into the reservoir.
- If some dirt falls into the water, you can dump out and refill.
- Plant seeds according to depth and spacing directions on seed package.
- Place in a sunny spot and observe over a few weeks. What do you notice happening? Record your observations on your chart.

Seed Sprout Observation Chart

How do your seeds change each day?

Draw or describe what you observe.

Day One	Day Two	Day Three	Day Four	Day Five
Day Six	Day Seven	Day Eight	Day Nine	Day Ten