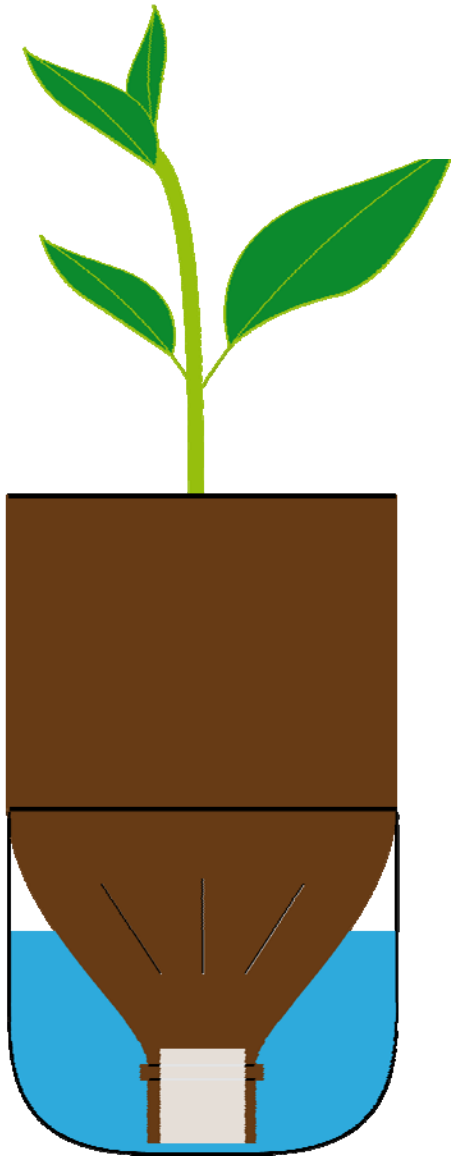


Make your own Sub Irrigating Planter



Sub Irrigated Soda Bottle Planters.



Sub Irrigated Soda Bottle Planters



Made from repurposed plastic soda bottles, these Sub Irrigated Soda Bottles are both functional and educational. You can see exactly how sub-irrigation works through capillary action, as well as the status of the soil and root system.

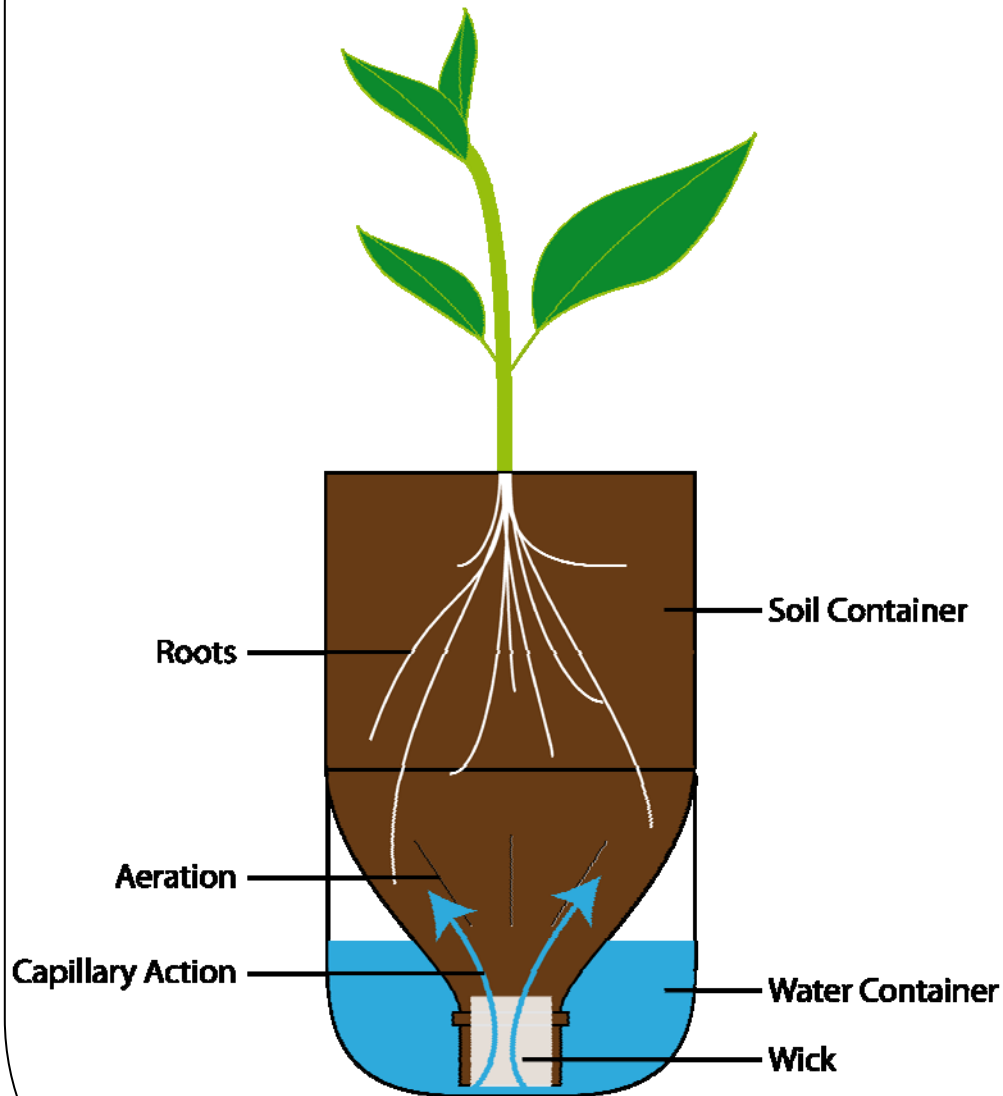
Sub Irrigated Planters(SIPs) are simple devices that have very low water consumption and need very little maintenance.

Sub Irrigated Soda Bottle Planters.



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The SIP System



The SIP has 3 parts

- Soil Container
- Water Container
- A wick, allowing water to be drawn from the water to the soil container

This diagram shows the major parts of a simple SIP made from a plastic pop bottle and on the left side the working principle parts are named:

- The capillary action
- Aeration
- The roots

Necessary Items and Tools

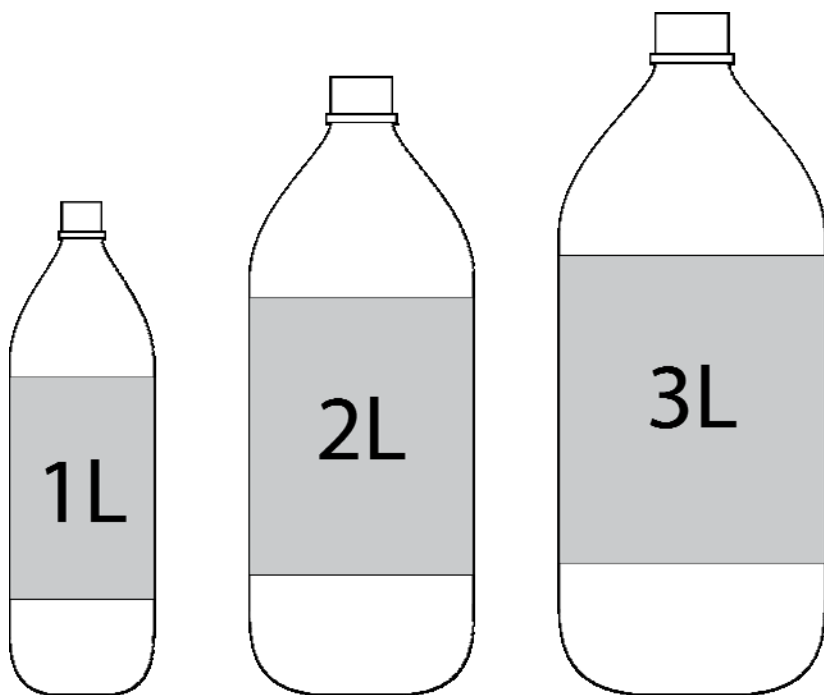
For each SIP you will need

- A clean and dry **soda bottle** (You can use most 1, 1.5, 2 or 3 liter plastic bottles)
- A piece of **cloth** of about 1" by 8". This is the .
- **Potting Mix** (You can NOT use ordinary dirt in your Self Irrigating Planter. Key to the success of SIPs is the water wicking up from the reservoir up into the upper bucket where the plant's roots soak up the water. Ordinary dirt or soil will not wick. You need a growing medium that wicks. Sphagnum peat and coir are excellent wicking materials. Pre-mixed material which works well is sold as "potting mix". The main ingredients should be listed as sphagnum peat and/or coir with the remainder as some combination of vermiculite and/or perlite)

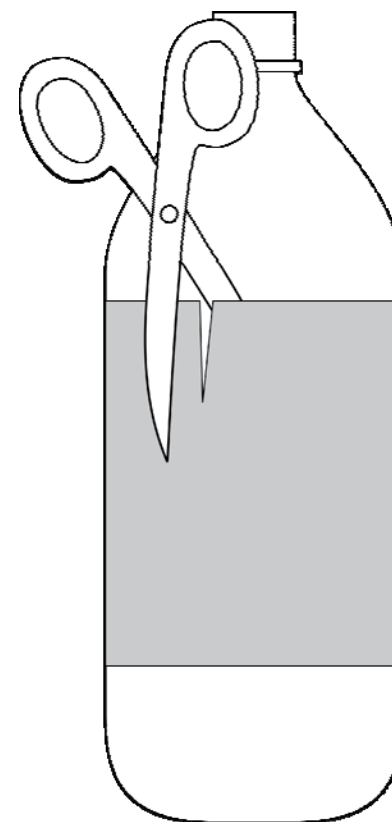
Tools

- A **box cutter** or an electric soldering iron
- **Scissors**
- **Marker**
- **A 14 Oz Can**

Step 1: Collect Bottles & remove labels

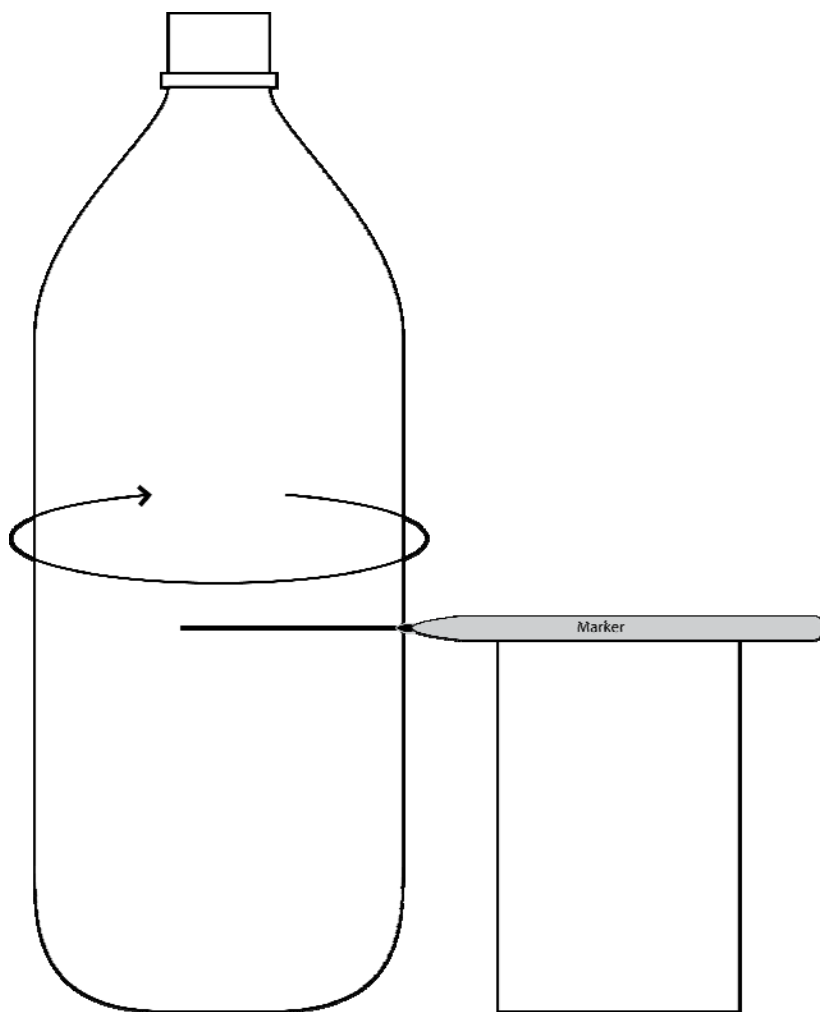


You can use most 1, 1.5, 2 or 3 liter plastic bottles.



Remove the labels

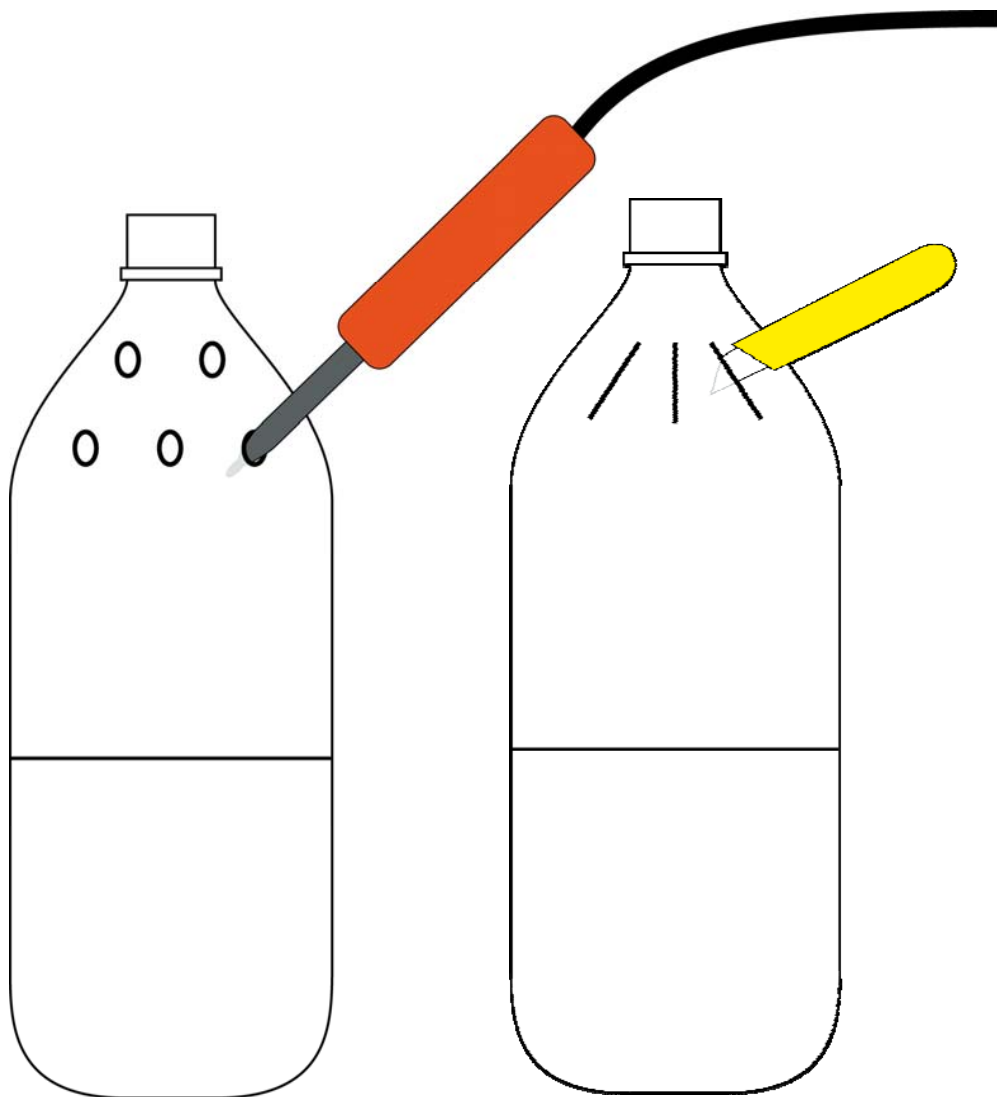
Step 2: Mark Line



Mark a line to follow when cutting the bottle. Hold a permanent marker on top of a can (For instance a 14 oz can for a 2 liter bottle) and rotate the bottle to make a perfectly straight line to guide your cut.

Note that the height of a 14 oz can is only an approximate dimension. You might have to do some trimming as explained later in this photo set. You'll soon find out what works best for you.

Step 3: Make holes on the top

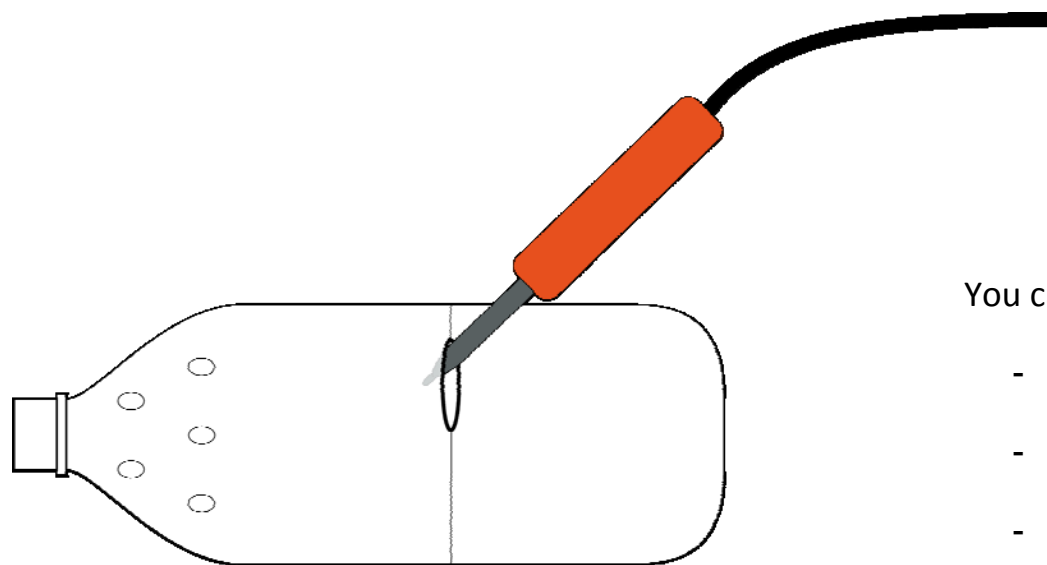


Poke a series of small holes/slits in the neck and top of the bottle.

You can use:

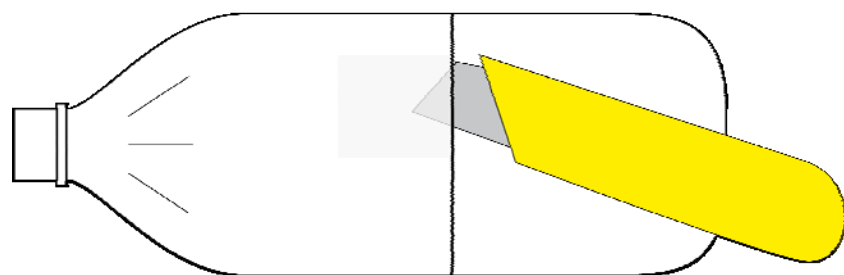
- A knife
- An electric soldering iron
- A small kitchen knife heated over the gas burner

Step 4: Prepare the bottle for cutting

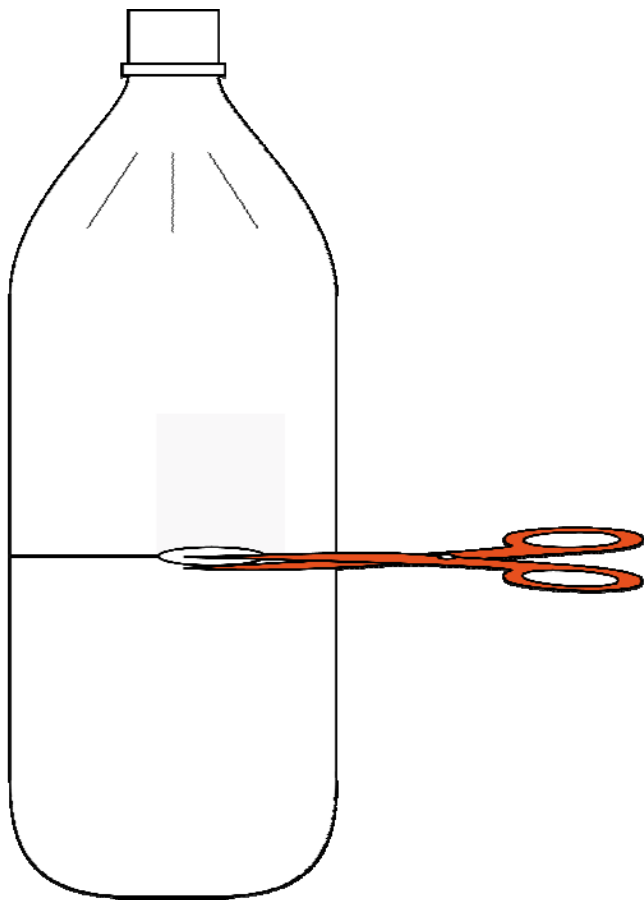


You can use

- A wood burning pen with a knife tip
- A box cutter
- A small kitchen knife heated over the gas burner



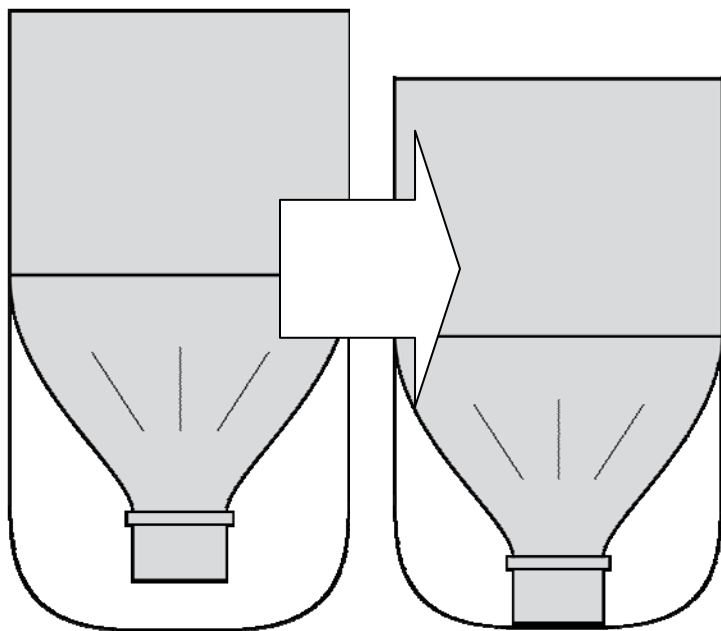
Step 5: Cut along the line around the bottle



Poke the scissor blade into the slit made in Step 4. Carefully cut the bottle following the marked line.

This first cut is usually rather rough. It's best to trim cut both the top and bottom sections to avoid skin cuts and provide a better looking planter.

Step 6: Make sure the top of the bottleneck reaches the bottom

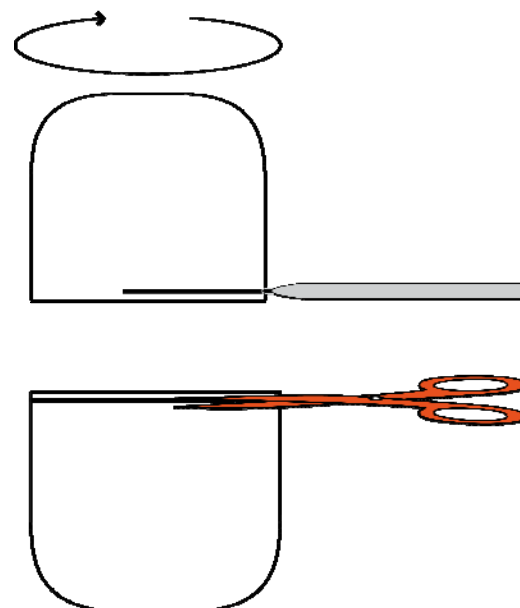


The 14 oz. can is not an exact marker. It will provide the rough size for most 2-liter bottles. Once you make the initial cut to halve the bottle you need to trim to fit. The objective is to: **get the top of the neck to touch the inside of the bottom.**

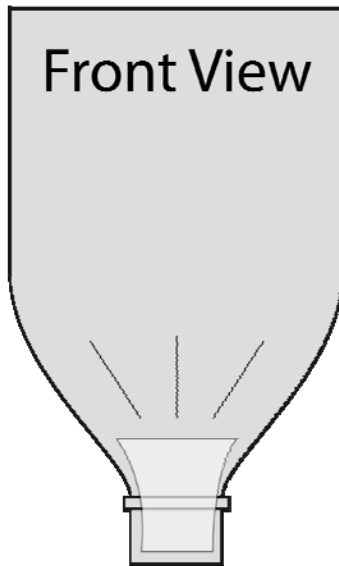
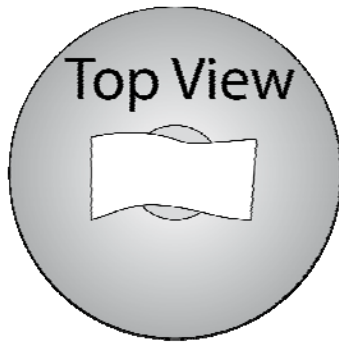
This may take a couple of cuts. Insert the top into the bottom and guess the distance between the top

Step 7: Make a soil retainer

of the neck and the inside of the bottom. You can use the marker to make a new line.



Cut and repeat until it fits perfectly.



Put the piece of cloth (cotton or other material that lets through water but not soil) in the bottle neck. Make sure it fits tightly, so that when you lift the top half when it is filled with soil it will stay there.

Note that this will disintegrate, so you might have to replace it after a few months/years.

Step 8: Personalize your planter



Students from a Brooklyn Public Elementary School personalized their SIPs



SIPs in burlap bags.

Step 9: Assemble the SIP



First put the top half of the bottle in the bottom half. Pour some potting mix into the planter on top of the soil retainer. Push the soil down firmly. The soil retainer holds the soil in the planter and also assures that there will be contact with the water for capillary action to take place. You're now ready to plant!

Important

You can NOT use ordinary dirt in your Self Irrigating Planter. Key to the success of SIPs is the water wicking up from the reservoir up into the upper bucket where the plant's roots soak up the water. Ordinary dirt or soil will not wick. You need a growing medium that wicks. Sphagnum peat and coir are excellent wicking materials. Pre-mixed material which works well is sold as "potting mix". The main ingredients should be listed as sphagnum peat and/or coir with the remainder as some combination of vermiculite and/or perlite.