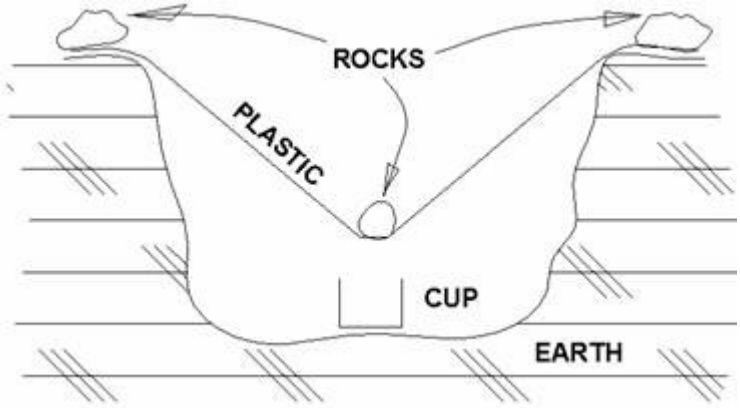
Stills

Solar Stills

Cool surfaces exposed to warmer moist air condense water. People have survived by wiping dew off rocks and grass in the early mornings, and then wringing the wipers into containers. With just a little preparation, you can do a little better.

Earth Still

You can make a classic survival still by digging a 3-foot diameter pit about 3 feet deep, placing a cup in the bottom, and covering it with too much plastic. The plastic is pushed down in the center until it forms a point a few inches above your cup. Leave a pebble in the center of the plastic to keep the point in place. Weigh the edges of the plastic with rocks or sticks, or even dirt.



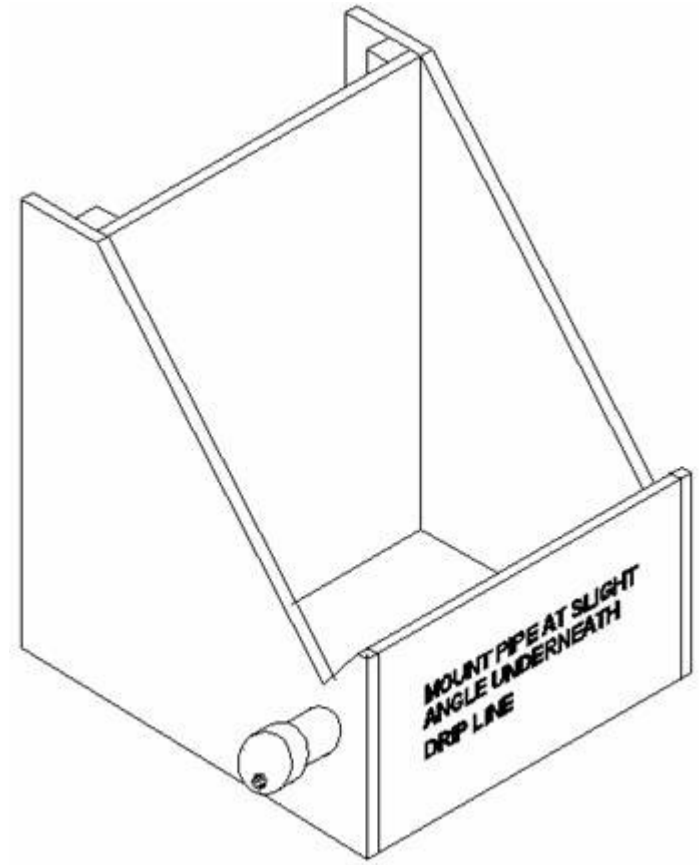
Now when you actually try this thing you are likely to come up with a little more education than you had when you thought it was just a neat idea. How do you get the water out without dismantling the still? How easy is it to accidentally kick dirt into the cup? How much water do you get in a 24-hour period? How would you like your life to depend upon this thing if you haven't tried it first? Try it, and you'll learn a few things like I did.

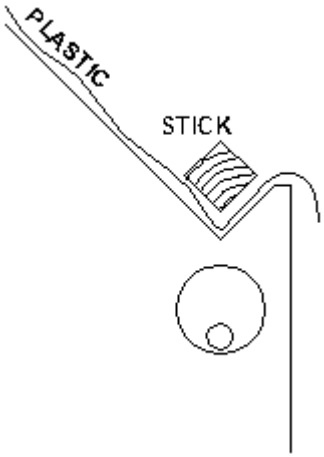
Still more

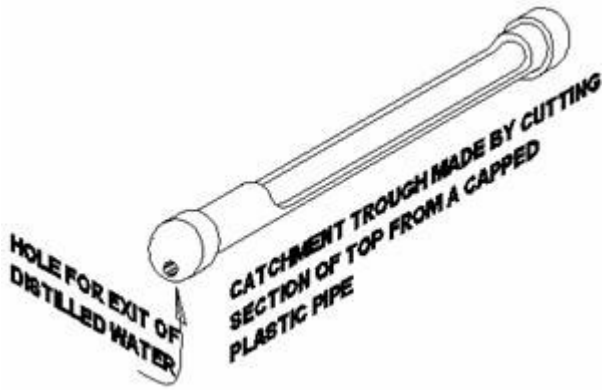
The next illustrations show a still I built a still out of 5/8" plywood, which leaves behind most (theoretically all) the minerals and microbes. I say "most", because the water tasted like plywood. The water itself is contained by a plastic lining in the bottom 6" , and does not come directly in contact with the wood. The still will vaporize and condense anything that will vaporize and condense at the temperatures involved; this apparently includes the smell of wood. As a good rule of thumb, if you can smell it, you're probably drinking it.

I am sure this could be over-come by lining the entire inside with plastic. You might also consider coating the plywood directly with a rubberized roof coating of some kind (Rubber-scented water might become a novelty).

Seriously, the taste problem is usually "volatile organic compounds" or VOCs. These are typically filtered out by the use of carbon filters.







A flexible sheet of plastic can be laid upon the sloping portion, and a shin square stick laid on top of the plastic holds it into the corner at the bottom. You might also use a rigid piece of glass or plastic, in which case you need to close the bottom corner with something to keep the water vapor from escaping.

One trade secret I learned from a commercial manufacturer of solar stills is that the inside surface of glass must be very slightly scored with fine sand paper so that the water will cling to it and run down, rather than simply drop off wherever it condenses. Another consideration is that distilled water is very active, and will corrode most metals – so stick with plastic fittings and containers unless you have food-grade stainless steel.

Door prize (Bad puns are loved only by their creators)

I made a box from a couple of old doors with scraps of plywood nailed to the ends. I lined this box with plastic and used a couple of bricks or something to support a sloping trough down the center of it. This trough was a strip cut from a piece of fiberglass corrugated roofing, and it protruded out through a

hole in one end where it could drip into a bottle The exit and bottle were covered with plastic so the water wouldn't evaporate before it was stored. The top was covered with excess clear plastic, with a weight down the center so the water would run into the trough.

This still worked better than anything else I tried, was simple and quick to build. The basic lesson in all this is simply "Look around you, and think."