



## DIY Weather Station Part 1- The Rain Gauge:

**Humans have been measuring precipitation for thousands of years. Water is our most critical resource and keeping track of rainfall from year to year helps us plan everything from managing Nantucket's Sole Source Aquifer to managing our food crops and flower gardens. In this week's bACKyard Biologist, we build our own tool for measuring Nantucket's rainfall.**

Nantucket receives around 40 inches of precipitation each year, and it is evenly distributed throughout the year. This is vastly different from other places in the world, such as the red rock deserts of the Colorado Plateau, for instance, which receive under ten inches of rain each year. Not only do deserts receive much less rain, but they often get most of it during a brief period in spring or fall.

Plants and animals both rely on a supply of water to survive year to year, so it is useful and interesting to measure how much rain we get- The project below is based on millennia of human experimentation, and we're still improving the design of our rain gauges to this day! The Nantucket Land Council has a state-of-the-art rain gauge located off Eel Point Road which measures daily precipitation throughout the year. Not only that, but this solar powered marvel also collects precipitation to examine its chemistry, helping us better understand Nantucket's climate.

### **Materials:**

- Empty two-liter bottle, transparent
- Utility knife
- Sharpie
- Masking tape or duct tape
- Stones or gravel for ballast

**Instructions:**

1. Empty your two-liter bottle and peel any label-stickers off of it. Discard cap.
2. Cut the top off it, just before it begins to taper. The top of the bottle will serve as your rain gauge “funnel”
3. Place an inch or so of gravel or stones in bottom of bottle to provide some ballast so your DIY rain gauge is not blown over by wind
4. Invert bottle top, and tape in place on bottle to act as your rain funnel
5. Install a piece of masking or duct tape perfectly vertically on the side of the bottle. Use the ruler to mark the tape. Start at “0” just above your gravel or stones, and mark in inches or centimeters right up to the top of the bottle with your sharpie. (If you prefer, just tape your ruler to the side of the rain gauge!)
6. Fill the rain gauge with just enough water to be level with your “0” mark
7. Place your brand-new DIY rain gauge somewhere level outside and wait for rain!

**What to look for:**

Your rain gauge will capture precipitation via the funnel on top, and gravity will do the rest! The amount of rain received will be indicated by your marker tape along the side of the bottle. Between rain events, be sure to “reset” your rain gauge by either pouring out or adding water to keep the level at “0” for accurate precipitation measurements. You can keep a simple journal with dates and rainfall amounts to get an idea of how much rain you receive in each period of time.

**DIY Rain Gauge materials:**





Completed Rain Gauge:

