

Challenge

- Try using your home-made anemometer to measure the wind speed outside. You can track the changes in wind speed over several days at your home. How often does the speed of the wind change where you live?
- You can also take your wind meter around town to find out if some parts of town are more windy than other parts of town. If you live near the ocean, is it windier at the beach or inland? If you live near the mountains or a tall hill, is it windier at the top or at the bottom?
- Try making other weather instruments to track weather patterns in your backyard. You can make a rain gauge to measure precipitation and a wind vane to measure wind direction. Track the weather over several days. How does your data compare to the local news forecast?
- For a more advanced project, you can calculate the speed of the wind in miles per hour (mph). Calculate the circumference of the circle made by the rotating paper cups and convert this to miles. Multiply your RPM value by the circumference of the circle in miles, multiply by 60, and you will have an approximation of the speed at which your anemometer spins (in mph). Winds of 5 mph cause leaves to rustle, while a 20 mph breeze can sway small trees. The highest wind speed ever recorded was in the Tropical Cyclone Olivia in 1996; it reached 253 mph. Your anemometer doesn't need to be pointed in the wind for use. You should be aware that some forces are being ignored including drag and friction for this elementary anemometer design, so the velocity at which your anemometer spins is not going to be exactly the same as the wind speed.