

Experimental Procedure

1. Take four of the paper cups and use the paper punch to punch one hole in the side of each cup, about a half inch below the rim.
2. Take one of the four cups and push a soda straw through the hole. Fold the end of the straw and staple it to the side of the cup across from the hole. Repeat this procedure for another one-hole cup and the second straw.
3. Take the fifth cup and punch four equally spaced holes in the side of the cup, about a quarter inch below the rim. Then punch a hole in the center of the bottom of the cup.
4. Slide one cup and straw assembly through two opposite holes in the cup with four holes. Push another one-hole cup onto the end of the straw just pushed through the four-hole cup.
5. Bend the straw and staple it to the one-hole cup, making certain that the cup faces the opposite direction from the first cup. Repeat this procedure using the other cup and straw assembly and the remaining one-hole cup.
6. Align the four cups so that their open ends face in the same direction either clockwise or counter-clockwise around the center cup.
7. Carefully push the straight pin through the two straws where they intersect.
8. Push the eraser end of the pencil through the bottom hole in the center cup. Carefully push the pin into the end of the pencil eraser as far as it will go. You may need an adult to help you push the pin in.
9. Now your anemometer is ready for use! It should look like Figure 1:

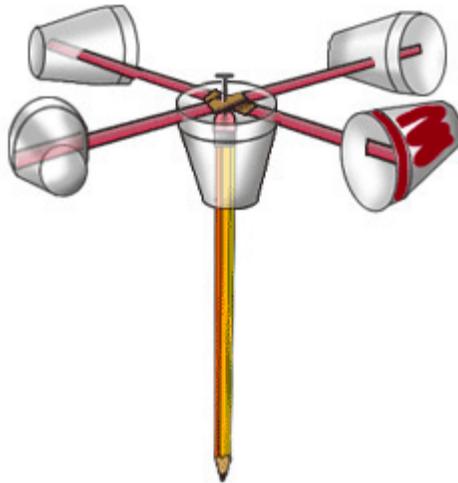


Figure 1. When your anemometer is completely assembled, it should look like the one in this picture.

10. Now set up the fan on one side of the room and mark a line with tape on the other side of the room from the fan, about 6–8 steps away.
11. Turn the fan on low speed and stand on the line across the room. Hold up your anemometer and count the number of turns your fan makes in a minute. This is its revolutions per minute (RPM). Get someone to help you time the minute with a kitchen timer so that you can do the counting.
12. If you find that the anemometer is moving too fast for you to count then you will need to increase your distance and try the experiment again. Remember, all of your data needs to be collected from the same distance for each speed, as a control.
13. Repeat step 11 for the other speeds of the fan (medium and high), each time taking at least three different readings and averaging the results. You can calculate the average by adding the three readings together for a fan speed and dividing the answer by three. You should keep your data organized in a data table like Table 1.

Fan Speed	Wind Speed in Revolutions per Minute (rpm)			
	1st Reading	2nd Reading	3rd Reading	Average
Low				
Medium				
High				

Table 1. You should write down your data in a table like this one.

14. Now you need to make a graph of your data so you can analyze your results. On the left side of the graph (y-axis) put a scale for your anemometer readings in revolutions per minute. On the bottom of the graph (x-axis), put a mark for each of the different fan speeds (low, medium, high). Then draw a bar for the average reading for each of the fan speeds.
15. How did your anemometer work? What happens to the number of turns of the anemometer in revolutions per minute as the wind speed increases?