How Windy Is It? A Weather Science Experiment

Weather is a common part of the second grade curriculum, and of any second grader's life, too! Here's a real-life science activity that explores wind speed. Your child can use it to learn about big winds that make the news, like those in hurricanes, or to become familiar with the concept behind wind power.

What You Need:

- Modified "Beaufort Scale" chart—see below
- Lightweight scarf or handkerchief
- Taper candle and matches
- Curious first grader

What You Do:

1. Explain to your child that those winds that whip their scarves or blow papers around affect lots of big stuff in our world. In history, for example, wind enabled explorers to go from one continent to another; today, it's still used to meet critical energy needs. And of course, you only need to check the news of hurricanes to understand that when it's out of control, wind can do very big damage, too. So how do we measure wind?
2. Share that for nearly two centuries, people have referred to a scale that was first developed by a British admiral named Sir Francis Beaufort. Scientists have tinkered with it a bit, but the basic idea is the same: an observant scientist can estimate, from regular clues, the speed of wind. From there, we can estimate its "force."

Here's a modified version of the Beaufort Scale:

What to Look For:	How we describe it:	Probable wind mph:	Force:
Smoke or vapors go straight up	Calm	less than 1	0
Smoke drifts slightly	Light air	1-3	1
Wind on face, leaves rustle	Light breeze	3-7	2
Paper blows around in wind; dust, leaves moved around	Moderate breeze	8-20	3-5
Wind moves tree branches; little waves form in lakes or open water	Strong breeze	25-38	6-7
Wind may break small branches off trees; hard for little kids to walk outside	Gale	39-54	8-9
Wind can blow down big trees and even buildings; cause major storm surges at sea	Hurricane	55-73+	10-12

3. Take your child outside, and bring a light scarf, matches, and candle. Start by lighting your candle, and watch what happens. Does it stay lit? Does the smoke rise vertically, or drift to the side? Use the data to start evaluating the wind outdoors according to Beaufort's scale. Then hold the scarf up. Does it dangle? Blow in the breeze? Finally, look all around. What are the trees doing? Grasses? Where does it all fall in the Beaufort scale today?

Note: You will obviously want to avoid taking your second grader outdoors for the last two categories, but we represent them here so that you will have a frame of reference the next time you hear a news report, or in case a big storm warning is forecast for your area.

4. Repeat this experiment, every day for a week if possible. Then try checking your results against the weather page in a newspaper. Forecasters usually offer reports of local wind speeds on land, and on water as well if you live near an ocean or lake. How close can you and your first grader get to these expert observations? No matter what, it's good science—and good fun, too.