



Credit: TopFoto

Wind-speed meter

This activity is in the form of an experiment to determine the approximate speed of the wind.

You will need

- Cardboard box approximately 18 x 18 x 25 cm
- Craft knife
- Plastic tape about 12 mm wide
- Self-adhesive shelf-lining paper (sticky-backed plastic)
- Wire coat hanger
- Wire cutters
- Piece of aluminium foil about 15 x 20 cm
- Scissors
- Sellotape
- Fine-point permanent marker pen
- Beaufort wind-force scale (see below)

Steps

1

Cut off both ends of the box. (Use tape to reinforce any pieces that become loose when the box is cut.) Cover the inside and outside of the box with self-adhesive shelf-lining paper.

2

Cut a straight piece of wire about 20 cm long from the coat hanger. Poke the piece of wire into the side of the box 12 mm in from the open end and 12 mm below the top. Push the wire straight across the opening and out the other side. Make sure the second hole is directly opposite the first, then bend the ends of the wire downwards.

3

Slide one of the 15-cm edges of the aluminium foil over the wire and make a fold about 25 mm deep all along the folded edge. Tape the fold with Sellotape so that the foil hangs down like a curtain. Be sure that the curtain can move freely on its rod.

4

Push on the bottom of the curtain with one finger so that you can see the curved path that the bottom of the curtain follows as it swings inward.

5

To calibrate the meter, place it outside so that the curtain faces the wind. Make a mark where the bottom of the curtain appears. Using the Beaufort wind-force scale (see below), estimate the wind speed and draw a symbol and/or mark showing the estimated speed (in miles per hour) that the wind is blowing when the curtain is in that position. It will take several days to completely calibrate the meter. You will have to observe it in many different kinds of wind conditions to fill in the chart. When it is calibrated, you will be able to place it in the wind and estimate the wind speed by reading the position of the bottom of the aluminium foil curtain.



The Beaufort wind-force scale

Force number	Wind description	Wind effects on land	Wind speed (miles per hour)	Wind speed (kilometres per hour)
0	Calm	Smoke rises vertically.	Less than 1	Less than 1
1	Light Air	Wind direction is shown by drift of smoke.	1–3	1–5
2	Slight Breeze	Wind is felt on face. Leaves and twigs rustle. Wind vanes move.	4–7	6–11
3	Gentle Breeze	Leaves and twigs are in constant motion. Light flags extend.	8–12	12–19
4	Moderate Breeze	Dust and loose paper blow about. Small branches sway.	13–18	20–28
5	Fresh Breeze	Small trees sway. Small waves develop on lakes and rivers.	19–24	29–38
6	Strong Breeze	Large branches sway. Umbrellas are hard to use.	25–31	39–49
7	Moderate Gale	Whole trees sway. It is difficult to walk against the wind.	32–38	50–61
8	Fresh Gale	Twigs break off trees. Walking becomes very difficult.	30–46	62–74
9	Strong Gale	Slight damage to buildings. Shingles may fly off roofs.	47–54	75–88
10	Whole Gale	Considerable damage to houses and other buildings. Whole trees are uprooted.	55–63	89–102
11	Storm	Widespread damage (winds this strong are very rare).	64–73	103–117
12	Hurricane	Violent destruction.	More than 74	More than 117