

3. What damage can wind do?

4. Does your instrument give a measurement of wind speed that agrees with the measurement using your observations and the Beaufort wind scale? Can you suggest any improvements to the instrument?

Beaufort Wind Scale

Beaufort Number	Description	Wind Speed (km/h)	Effect
0	Calm	Less than 2	Smoke Rises Vertically
1	Light Air	2-5	Smoke drift shows wind direction, wind vanes don't move.
2	Light Breeze	6-12	Wind felt on face, wind vanes move.
3	Gentle Breeze	13-20	Leaves and small twigs in motion, hair disturbed, clothing
4	Moderate Breeze	21-30	Dust and loose paper moved, small branches move.
5	Fresh Breeze	31-40	Small trees with leaves begin to sway, wind force
6	Strong Breeze	41-51	Large branches move, umbrellas difficult to use,
7	Moderate Gale	52-63	Whole trees in motion, inconvenience felt

			when walking.
8	Gale	64-77	Twigs broken off trees, difficult to walk.
9	Strong Gale	78-86	People blown over, slight structural damage including tiles being blown off houses.
10	Whole Gale	88-101	Trees uprooted, considerable structural damage.
11	Storm	102-120	Widespread damage.
12	Hurricane	Greater than 120	Widespread devastation.

Explanation

Heat from the sun warms the air and makes it rise. This occurs mainly in tropical regions, near the equator, where the sun's energy is most intense. As warm air rises, cool air rushes in to take its place. We feel this movement of air as wind.

During the day in summer, land is generally warmer than the sea. This temperature difference can set up cooling daytime sea breezes, which can penetrate many kilometres inland. At night, breezes may blow in the opposite direction, from the land to the sea.

Similar daily changes in temperature occur over irregular terrain and cause mountain and valley breezes. Other winds induced by local phenomena include whirlwinds and winds associated with thunderstorms.

Extension Activity

Can you devise another simple instrument for measuring wind speed?

Fact File

The strongest wind ever reliably measured on the surface of the Earth was 362 km/hr, recorded on Mt. Washington in the United States on 12 April, 1934. Much stronger winds, however, occur near the center of tropical cyclones.