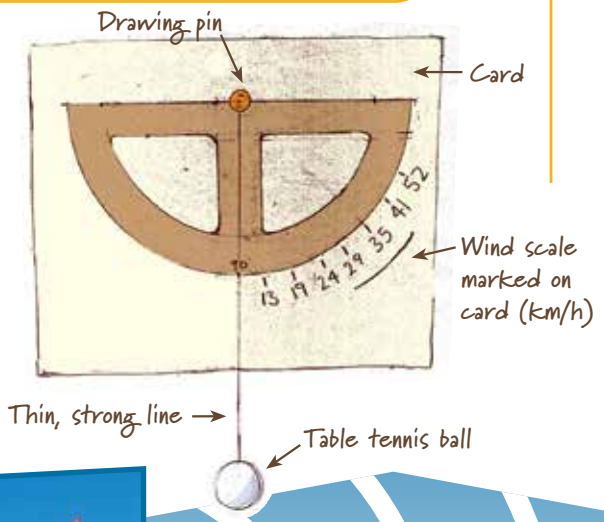
Chilling Out

You need: a large protractor, nylon line, a table tennis ball, an OHT pen, glue or a glue gun, cardboard, windy days

ACTIVITY

1. Here is a way to make a simple anemometer for measuring wind speed:
   - Stick the protractor to the card with tape or glue, or trace its outline onto the card.
   - Mark the wind scale, using the values from the table below.
   - Attach a table tennis ball to about 40 centimetres of line and pin or tape the other end to the centre of the protractor.



Angle	90	85	80	75	70	65	60	55	50	45	40	35	30	25	20
Wind speed (km/h)	0	9	13	16	19	22	24	26	29	32	35	38	41	46	52

2. Use your anemometer in different places and on 4 different days to estimate the speed of the wind. Keep the flat side of the protractor horizontal. Record your readings.

INVESTIGATION

The wind makes us lose body heat, which is why we feel cool on a bright but windy summer's day. When air temperatures are low, this heat loss is known as the *wind chill factor*, and can be dangerous. The chart shows that when the wind speed is 20 kilometres per hour, the air temperature feels like ⁻18°C, even though it is really ⁻10°C.

Use the Internet to find out more, using these questions as starters:

- How is the wind chill factor measured?
- What happens to it as the wind increases beyond 40 kilometres per hour?
- Why can it be dangerous?
- How does it affect non-living things?

Wind speed	Air temperature				
	⁻15°C	⁻10°C	⁻5°C	0°C	5°C
10 km/h	⁻21	⁻15	⁻9	⁻3	3
20 km/h	⁻24	⁻18	⁻12	⁻5	1
30 km/h	⁻26	⁻19	⁻13	⁻6	0
40 km/h	⁻27	⁻21	⁻14	⁻7	⁻1