



# suggested activities

The following scenarios give you ideas about how the weather instruments might be incorporated in a learning program. Various real-life situations are listed first. Others scenarios are then listed by subject.

## In real life

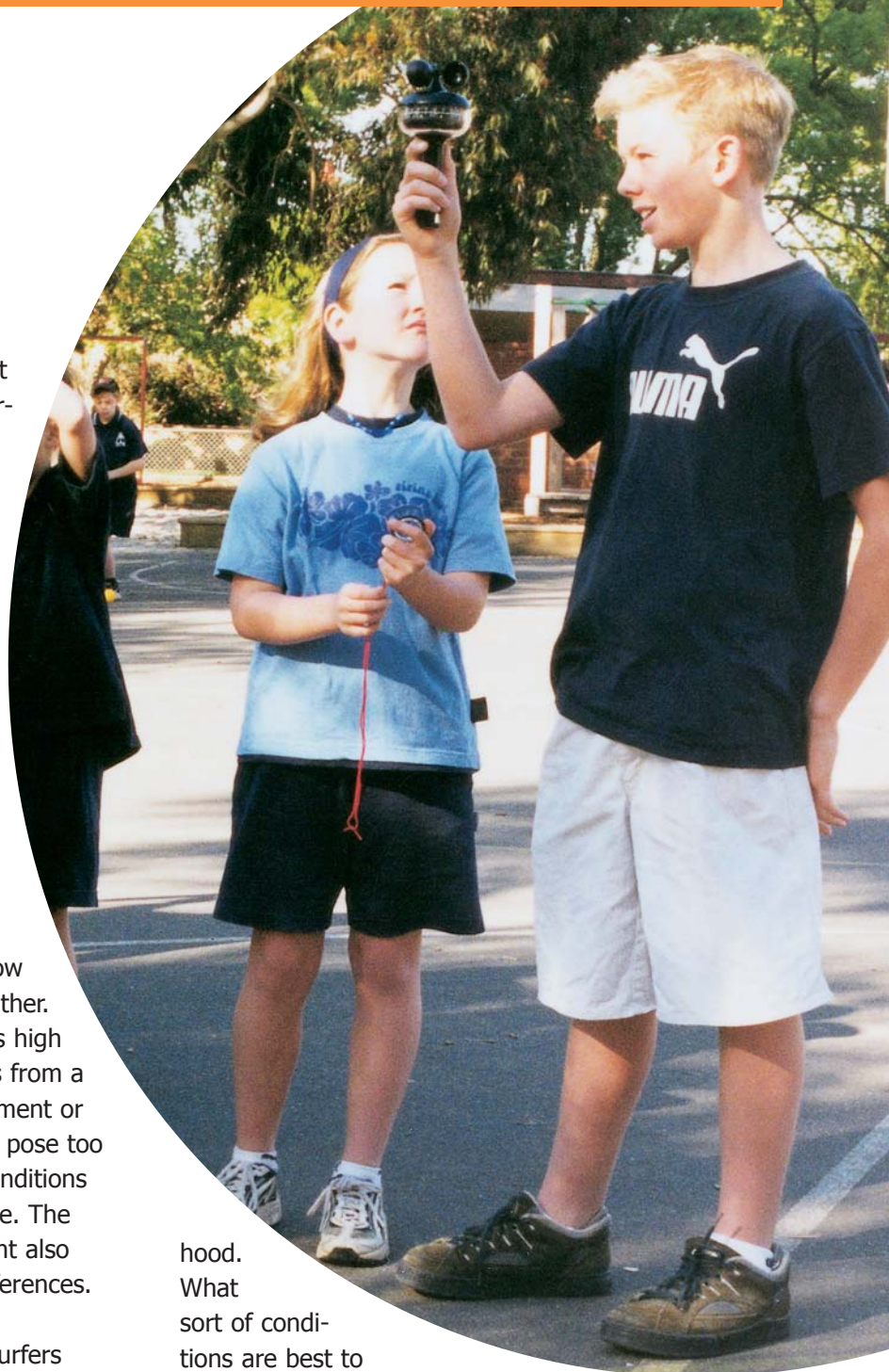
**Fishing and the weather:** Can the fishing fleet go out to sea? Consider the wind speed and direction, swell and currents, and how long the conditions are likely to last. Think about how the weather might affect the catch. Is it worth taking the boat and crew out?

**Comfort level in sport:** Athletic performance is affected by the weather. Consider how uncomfortable exercise is in hot, humid weather. Certain combinations of conditions – such as high temperature and humidity, and strong winds from a certain direction – can lead to the postponement or cancellation of events. The conditions might pose too high a risk or assist athletes unfairly. The conditions in a stadium can be quite different to outside. The structure might create extra shade, but might also trap heat. See if you can measure these differences.

**'Right' conditions for sport:** Skiers and surfers tend to be very aware of weather conditions. What combination of weather elements, such as temperature and wind speed and direction, are "right" for your favourite sport?

**Emergency services:** Firefighters and other emergency services staff are aware that the weather is an important influence on the severity of natural disasters such as bushfires, floods, tropical cyclones and gale force winds. What are the main weather factors that determine the severity of these events, and what can you do to prepare?

**Agriculture:** Farmers are generally aware of the profound effect that the weather has on their liveli-



hood. What sort of conditions are best to plant a crop, to spray for insects or fungal outbreaks, to cut and bale hay, or to shear sheep? What are the upper and lower limits of temperature, wind speed or rainfall for different farming activities?

**Urban environment:** People living in metropolitan areas are affected by weather in different ways to those in rural and regional Australia. Town planners need to be aware of rainwater drainage where concrete and tarmac cover the ground, of wind loads on buildings, and of heat trapped in big cities. Forecasts of smog, which is more likely in certain weath-





er conditions, need to be issued so asthmatics can take precautions. Warnings of black ice, snow and fog must also be issued for drivers and pilots.

**Human physiology:** Changes in the season can have an impact on our moods. Some people suffer from seasonal affective disorder, SAD, which has been linked to long, dark winters. This is important for those planning to work in Antarctica, for instance, where winter is one long night with little daylight.

## By subject

The following suggestions are grouped according to subject area, and are intended only as a guide.

### Science

- ◆ Describe simply the use of scientific instruments.
- ◆ Examine the effects of weather on the playground.
- ◆ Use the equipment to collect data about weather patterns.
- ◆ Using the instruments provided as a starting point, design your own weather instruments.
- ◆ Compare your weather data with that of the Bureau of Meteorology. Refer to newspapers, television, radio and the Internet.

### Science – Biology

- ◆ Measure the weather in various locations outside, noting the differences. This introduces the concept of microhabitats: sheltered areas, sunny exposed areas, close to the ground, higher in the air, burrows, etc.

### Science – Physics

- ◆ Investigate how water, wind and temperature affect each other (ie: evaporation and latent heat).
- ◆ Devise experiments to monitor meteorological conditions over time.

### Geography

- ◆ Think about the association between the weather and farmers and gardeners. Think about soil temperature, and the differences in growing habitats for plants and animals. How does the weather affect plants on the small and large scale?
- ◆ Use the Bureau guidelines for issuing a farmers and graziers warning and a dry rot warning (see Section 3: Notes and information for activities). Compare your measurements with the guidelines.

### Technology

- ◆ Write a program to calculate the averages of col-

lected weather data and present the information graphically.

### Mathematics

- ◆ Learn how to read different scales on the equipment and associated charts while collecting data.
- ◆ Complete statistical analyses of collected data.
- ◆ Compare measured temperatures with Bureau readings reported in newspapers and on television, radio and the Internet. Find out where your closest Bureau observation point is, and try to work out why there might be differences. Are the Bureau's real-time observations reported on the Internet?
- ◆ Compare the forecast maximum and minimum temperatures with those actually measured. Think about the accuracy of the forecasts and the measurements. Does the accuracy of the forecasts improve as you get closer to the actual day?
- ◆ Collect and compile observations over a period of time and create tables, graphs and charts. Use the information to make your own predictions, and compare them to what actually happens.

### Outdoor education / physical education

- ◆ Measure the wind speed and direction and the temperature in both goal areas, and in the grandstands. This can be applied to a variety of sports such as football, soccer and basketball, both indoor and outdoor.
- ◆ Develop a general understanding of "reading" the weather, with and without equipment, for camps and field trips.

### Languages other than English

- ◆ Learn the language of weather and the equipment and use the language in conversation or writing.
- ◆ Collect readings using the equipment and compile a report on the findings in another language.
- ◆ Go to the Web pages of national meteorological organisations in other parts of the world (see Section 3) and see what you can use.

### English

- ◆ Write and present the collected data.
- ◆ Describe, in writing, the weather.
- ◆ Describe, in writing, how you used the equipment.

### Woodwork

- ◆ Build a weather instrument enclosure using plans in Section 3. Adapt the plans of the "home-made" screen to use what materials you have at hand. Or follow exactly the plans of the "official" enclosure.