

# 21 Measuring and mapping the weather

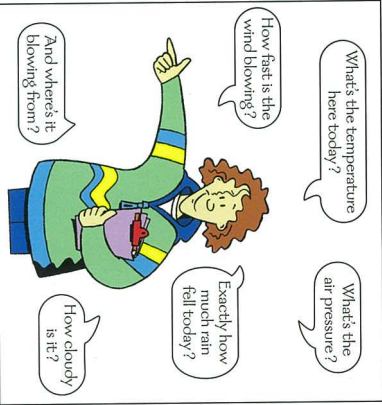
In this unit you will find out how the weather is measured – and how to read simple weather maps.

## Measuring the weather



**Weather** is the state of the atmosphere at a given time. You can tell a lot about it just by looking.

All around the world, night and day, the weather is continually monitored and measured. At weather stations on land, and by special equipment on planes, ships, weather balloons, and in satellites. Then **meteorologists** or weather scientists use the data to write weather reports, and draw weather maps, and make weather forecasts.



But to describe it fully, you need to ask questions like these. And answer them by measuring!

Weather term	Means ...	Usually given ...	Measured using ...
Temperature	exactly how hot or cold it is	in millibars (mb)	your eyes; satellite image
	how 'heavy' the air is		
	how much of the sky is hidden by clouds	as a compass bearing (N, NW, SW and so on)	
	how fast the wind is blowing		
	where the wind is blowing from		
	(a south west wind blows from the south west)		
	water falling from the sky in any form (rain, hail, sleet, snow)		
	how far ahead we can see, for example on a foggy day		

**4** This question is all about measuring the weather. You have to work out the answers for yourself, just like a detective. (The glossary will help.)

**a** First, make a copy of the table above.

**b** Write the words from list **A** below in the first column of your table, in the correct places.

**c** Complete the third column using list **B**. Start with the easiest units.

<p><b>A Weather terms</b></p> <ul style="list-style-type: none"> <li>wind direction</li> <li>visibility</li> <li>air pressure</li> <li>precipitation</li> <li>wind speed</li> <li>cloud cover</li> </ul>	<p><b>B Units</b></p> <ul style="list-style-type: none"> <li>kilometres or miles</li> <li>per hour (like a car)</li> <li>millilitres</li> <li>oktas</li> <li>degrees Centigrade (°C)</li> </ul>
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**5** Now look at box **C**. It shows equipment for measuring the weather. Look at each item in turn. What do you think it measures? Write its name in the correct place in the fourth column of your table.

**6 Cloud cover** means how much of the sky is covered in cloud. It is one thing you can measure just by looking. Cloud cover is measured in eighths or oktas, like this:

<p>1</p>	<p>2</p>	<p>3</p>	<p>4</p>
<p>5</p>	<p>6</p>	<p>7</p>	<p>8</p>

**Note!** They use more complex symbols for oktas on weather charts.

**a** Now look at the photo on page 24. As far as one can tell from a photo, what do you think the cloud cover was at Seaburn that day? Answer in oktas.

**b** Do the same for the photo on page 22.

**7 a** Look back at your table. Which of those aspects of the weather could you measure at home?  
**b** Choose one. Say how you would measure it, and when. Draw a diagram to show any equipment you'd use, and where you would place it.

**C Equipment for measuring the weather**

thermometer

The wind turns the cups ...

anemometer

... which turn a counter.

barometer

wind vane

rain gauge

visibility meter

A beam of light is sent out ...

... and a sensor measures how much arrives.

## Your turn

**1** First, look at the weather map on the right. It's the kind of map you see on TV and in the newspapers. Below are symbols it uses. Say what you think each means:

- |          |          |
|----------|----------|
| <b>a</b> | <b>b</b> |
| <b>c</b> | <b>d</b> |
| <b>e</b> | <b>f</b> |
| <b>g</b> | <b>h</b> |

**2** The photo above shows Seaburn on the day this weather map was drawn. Find it on the weather map. What can you say about the weather there? Describe it as fully as you can, giving some figures.

**3** Now say what you think the weather was like at:  
**a** X on the weather map    **b** Y on the weather map

