

## Lead-in

1 Do you read popular science articles? Why? On what occasions?

## Reading focus 1

2 The reading material below contains eight passages from two popular science articles. Read passages a–h quickly and match them to article titles 1 and 2.

1 Atheists turn to science during times of stress

2 Take a peek inside the brain's filing cabinet

- a Gradually, a map emerged showing which neurons each noun and verb activates. The neural activity seems to occur in logical groups. Voxels active for animals such as dogs and fish tend to cluster close to one another, for instance. Other links are less easy to interpret: vehicles and animals are grouped together, perhaps because both are capable of movement.
- b Farias speculates that a rationalist outlook would provide similar relief. 'Any kind of belief system helps you structure your perception of reality,' he says. 'It allows you to think of the universe in a particular meaningful way.' The researchers have begun a similar study using scientists who are religious to see how the two belief systems interact in response to stress.
- c Our brains are master organisers, able to make sense of the constant stream of visual information we encounter every day. A new map of the brain gives some insight into how it does this.
- d A team of psychologists led by Miguel Farias at the University of Oxford asked 52 rowers to fill in a 'belief in science' questionnaire just before taking part in a competitive regatta. They gave the same test – in which participants had to score statements such as 'science is the most valuable part of human culture' – to a similar number of rowers at a training session. The questionnaire also assessed self-reported stress levels and degree of religious belief
- e Recent studies have suggested that the brain organises the things we see into categories, such as animals or faces. To determine how this categorisation works, Jack Gallant at the University of California, Berkeley, and colleagues identified the 1,705 most commonly used nouns and verbs in the English language. They then showed video clips of these objects and actions to four people as each lay in an fMRI scanner, and recorded the brain responses. The team divided the fMRI images up into tiny squares, or voxels. When a video clip of an object such as a butterfly was played, the fMRI recorded which voxels – and hence which groups of neurons – were active.
- f Farias and colleagues discovered that those about to race were both more stressed, and rated their belief in science 14% higher than those who were simply training. Some caveats: the effect was modest, the team didn't measure whether the rowers' stress levels went down, and the subjects – competitive athletes who follow a rational training regime – are probably already scientifically minded. However, the findings reflect a growing body of psychological evidence that people find comfort in times of threat by moving closer to certain aspects of their world view – conservatives become more conservative, for example, liberals more liberal, religious believers more devout.

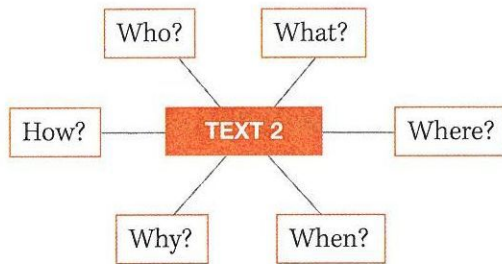
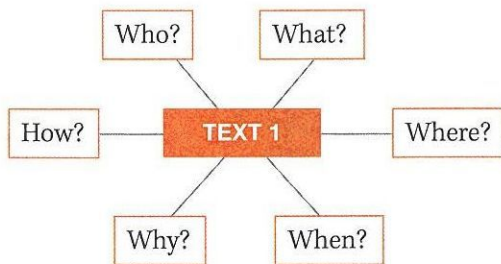
**g** It's well known that religious faith can help believers cope with stress and anxiety, by providing them with a sense of meaning and control at times of uncertainty. It now seems that a 'belief' in science and a rationalistic outlook might do the same for the non-religious.

**h** Gallant says the results suggest that the brain organises visual information by its relationship to other information. Each neuron appears to act as a 'filter' for placing data into multiple categories. The method opens a new door to looking at brain data, says John-Dylan Haynes of the Bernstein Center for Computational Neuroscience in Berlin, Germany.

**3** Read passages a–h again and match them to these sections of an article. What helps you decide?

- 1 introduction/general information
- 2 description of the experiment
- 3 findings
- 4 researchers' comments and prospects of future research

**4** Work in pairs. Note down the main points of each text from Activity 2 on the following spidergram. Student A: work with Text 1. Student B: work with Text 2.



**5** Ask your partner questions based on your spidergram. Check what they remember from your text.