## Writing the abstract

**6 a** **In pairs, discuss the following questions.**

1 What is the purpose of an abstract?
2 How can an abstract help a researcher choose which papers to read?
3 What information does the abstract usually include?
4 Why do some people think a good abstract is even more important in the internet age than it was before?

**b** **An abstract usually contains one or two key sentences from each section of a paper. Read the following extracts from Mya's draft abstract. Match a section (1–4) to an extract (A–D).**

1 Introduction _____ 3 Results _____
2 Method _____ 4 Discussion _____

A

With the aim of evaluating this possibility two microorganisms, *Acidithiobacillus ferrooxidans*, an acidophile, and *Deinococcus radiodurans*, a radiation-resistant microorganism, were exposed to simulated Mars conditions; that is, 95% $CO_2$, 2.7% $N_2$, 1.6% Ar and 0.6% $H_2O$ with a pressure of 7 mbars. Temperature was set at 150 K and ultraviolet radiation was in the wavelength range of 200–400 nmat. Exposure was for different times under the protection of 2 and 5 mm layers of oxidised iron minerals. Survival was evaluated by growing the organisms on fresh media.

B

The resistance of organisms to extreme conditions like the conditions which exist on the surface of Mars under the protection of a thin material layer increases the possibility that life could exist on Mars.

C

Here we report that both the 2 and 5 mm thick layers provided enough protection against radiation and Mars environmental conditions for the bacteria to survive (Figs. 2 & 3).

D

Current surface conditions on Mars are extremely challenging for life. However, Nicholson and Schuerger (2005) reported that *Bacillus subtilis* was able to survive for 19 days under Mars atmospheric pressure and composition. The question is whether there are any features on Mars that could provide protection against the surface conditions. One possibility is that the surface material plays a protective role due to the fact that it is composed of iron oxides and hydroxides.

**c** **In pairs, decide on the best order for the extracts (A–D) in the abstract. Give reasons for your answer.**

**7 a** ▶ 9.1 **Svenja, Mya's supervisor, is commenting on the draft abstract in Exercise 6b. Listen to part of the conversation and say which section (A–D) Svenja does *not* comment on.**

**b** ▶ 9.1 **Listen again and mark the following statements true (T) or false (F).**

1 Svenja thinks the reference to Nicholson and Schuerger (2005) is useful. _____
2 Mya should remove the information on iron oxides and hydroxides. _____
3 Mya needs to include more information about the method in his abstract. _____
4 Svenja advises Mya to refer to the visuals (figures, tables etc.) in the abstract. _____
5 Overall, Svenja thinks the abstract is well written. _____

**c** **Look at Audioscript 9.1 on page 101. Use Svenja's advice to Mya to improve the three sections of the text of the abstract in Exercise 6b. Then compare your corrected text with the Answer key on page 115.**

**8 a** **Mya uses particular phrases to signal the purpose of each part of the abstract (A–D) in Exercise 6b. Underline a phrase in the extracts which Mya uses to:**

1 state the research question
2 present the hypothesis
3 introduce the method
4 introduce key results

**b** **The following phrases can also be used to signal the purpose of each part of an abstract. Divide the phrases (a–l) into four groups according to the functions in Exercise 8a (1–4).**

a An investigation was undertaken to explore ...
b It seems likely that ...
c Results show that ...
d The aim of the study was to ...
e The data suggest that ...
f The present study investigates ...
g The study provides strong evidence that ...
h We demonstrate that ...
i We expected that ...
j We investigated a new method of VERB-*ing*
k The method involved VERB-*ing*
l ... was found to ...

**c** **The text of an abstract must be concise. Replace the underlined words in extracts 1–5 below with *that* or *those*.**

1 The hormone increased the power output of healthy volunteers by 16 per cent after four weeks of taking the drug. Healthy volunteers who took the drug could also exercise 50 per cent longer than control subjects.
2 We compare photographic exposure from scattered light with light from direct light.
3 The target yield is the yield which can be produced in 'perfect' conditions.
4 Structures like the structures described in this paper are not known in glyptodonts recorded before the Great American Biotic Interchange (GABI).
5 The lithology of failed carbonate strata differs from the lithology of their basal shear surfaces.