

Name: Class Copy

Period:      Subject: Biology

## Explain: Explaining Evolution

Landmasses separate and come together again. The sea level rises and falls with each ice age and with the movement of the tectonic plates. Species of organisms live in one environment. They sometimes migrate to other environments and change gradually into related but physically distinct forms. Then they usually become extinct. You have explored much about the changes that occur across geologic time. Now you will have the opportunity to explain how biological changes take place.

To develop an explanation of evolution, you will assume the role of a newspaper reporter. You will answer the story behind the theory of evolution. For example, you may have heard of Charles Darwin. Darwin, a 19<sup>th</sup>-century naturalist, is famous for writing *On the Origin of Species by Means of Natural Selection*, first published in 1859. But do you really know who he was? What did he do, how did he do it, and why did it matter? The story you write will help answer some of the questions that you may have had about evolution. How does evolution take place? Why are biologists so interested in it?

### Analysis

Your editor is impressed with your work but doubts whether the story is important enough to print. “After all,” the editor argues, “we refer to it as the ‘theory’ of evolution. If it’s just a theory, it means that we aren’t sure about it. Why should we pay attention to it? What makes Darwin’s theory any more convincing than a theory that you or I might suggest?” You, of course, are horrified at the editor’s lack of understanding about the nature of scientific theories.

1. Work with your partner to prepare a rebuttal to the editor’s criticism. Your response should include
  - a. a definition of a scientific theory that demonstrates the error in the editor’s argument, and
  - b. an explanation of the importance of the theory of evolution to modern biology.(Information in the essay “Just a Theory?” on page 119 will help you develop your response.)
2. Choose one member of your team to offer the rebuttal orally to your editor (your teacher). Although one person should present the team’s response, both members should be prepared to answer further questions about the issue if your editor is not convinced by your initial comments.