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## Evolution and Optimization – Solution

1. The film points out, that the process of evolution is sometimes called a “billion-year optimization process”. Illustrate what this statement could mean.

*Evolution is a long lasting process of adjusting characteristics of living organisms to their environment. Through natural selection, individuals with characteristics most adapted to their environment are more likely to survive and reproduce.*

2. Three students compare “optimization processes”. They compare evolution in nature and optimization processes like those made by scientists for the development of technologies. But not all their opinions are correct. Evaluate their opinions briefly.

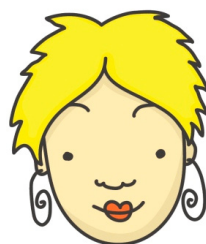
“Natural evolution and the optimization of technology both have similar goals: to push the advancement of creatures or things.”

“Researchers develop technical devices that are as usable as possible, similar to nature, which develops living beings so that they are best adapted to their environment.”

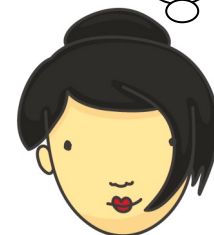


Tim

“Technical optimization processes are similar to the evolution of living things, because the actual result, which will ultimately be achieved, is not known in advance.”



Lena



Emily

*Tim and Lena’s statements are factual incorrect. Biological evolution is not making a concrete effort to improve living things. Which individuals are better adapted to certain environmental conditions can only be determined afterwards, based on the number of offspring produced. Evolution is not acting according to a “predetermined plan”, but through random processes that generate variation. This is where the selection begins.*