

Questions

Explain how cellular respiration and photosynthesis are interrelated in the carbon cycle.

The first mode of breathing, the cellular one, is present in the carbon cycle because through its different and complex mechanisms, it produces it. In synthesis, this mode of breathing requires oxygen to produce energy and ends up expelling carbon dioxide. On the other hand, photosynthesis interacts in a different way. It absorbs carbon dioxide and transforms it into oxygen.

Why is it that many top predators such as lions, tigers, bears, and wolves have extremely large territories and are relatively rare compared with primary consumers and producers?

Mainly because predators' prey on living organisms. They also move around in search of food. So, these predators must search for them. While producers like plants produce their own food and these cannot move from the place where they germinated.

Explain why decomposers are a necessary and important part of ecosystems. Relate it with Guayaquil city waste management.

In the food chain, they are the link that connects the last level with the first again. Without them producers could not receive the nutrients to grow. Waste in Guayaquil is often processed by these organisms that return nutrients to the soil from the waste they processed.

Compare the roles of bacteria in the nitrogen and phosphorus cycles.

Bacteria in both cycles play a fixing role. Through their transformation processes, they absorb either phosphorus or nitrogen and transform them into other chemical compounds that are required mainly by producing organisms.

Explain why genetic variation is necessary for evolution to take place.

In the DNA is present the genotype that will be manifested in the phenotype of each organism. If the genetic material does not vary between species, it is likely that this species cannot survive natural selection. With much more variety in the genetic pool, the genes that ensure survival will endure, giving way to changes in the organism that evidence the evolution of the species.

How are geographic isolation and reproductive isolation related? Relate it with one Galapagos endemic specie.

Geographical isolation is when members of a species are separated from their counterparts by physical aspects such as great distance or live on different continents. This can give rise to reproductive isolation, which is the set of characteristics or behaviours that prevent members of two species from interbreeding.