

# Natural selection

[Science](#), [Biology](#)



Natural Selection, as defined, is the process by which traits become more or less common within a population due to the survival or reproductive abilities of their bearer. Natural Selection is a key component to evolution. Naturally, there is always variation between individuals of the same species. Basically, organisms may contain slightly different traits making them more or less suitable to their environment. Thus, some individuals survive and reproduce more successfully than others.

*Capaea nemoralis*, or commonly known as the “grove snail”, is a perfect example used in studying the concepts of evolution and natural selection. The grove snail can have shells in yellow, pink, or brown and at the same time, their shells can be banded or un-banded. The shell characteristics are genetically inherited and are not influenced by environmental factors. The characteristics are passed on from one generation to the other.

Whilst the shell color is controlled by a single gene with three alternative alleles, brown, pink, and yellow (in order of dominance), the presence of bands is determined by only two alleles. The variation between snails determined by these alleles leads to the process of natural selection; different traits amongst snails are beneficial in different environments. Through the study of thousands of snails, biologists observe a pattern between shell color and climate. In hotter areas, there will be an increase in the population of snails with yellow shells.

They are more suitable to the area as they are able to tolerate the heat. On the other hand, in cooler areas, more brown and pink-shelled snails will be found. This is so as snails with darker shells make the most from the minimal

amount of heat present around them. Relating this to the idea of natural selection, snails with more favorable characteristics for each environment has a higher chance of survival whilst ones with the less suitable traits will slowly die off. As an example, at first, there may be equal amounts of dark and light-colored shell snails in hot climates.

However, as darker-shelled snails would heat up too readily and die of heat, less of them will be able to survive and produce offspring containing the same characteristics. On the other hand, lighter-shelled snails will survive more as they are suitable for the environment. Through time, there will be more of the lighter-shelled snails than of the darker-shelled snails. This is the process of natural selection, where the fittest one survives. Apart from the large-scale climate, microclimatic selection can also promote the idea of evolution through natural selection.

Habitats such as woodland are shaded and are cooler than grasslands. Therefore, dark-shelled snails would be more suitable to the environment. More of the dark-shelled snails will live and reproduce whilst the light-shelled snails would slowly die off. Vice versa, in habitats such as grasslands, lighter-shelled snails would have a higher chance of surviving; they are more “fit” for the environment. Ultimately, natural selection explains evolution.