

Student's Instructions

The sheer diversity and number of multicellular animals is impressive, and new animals are being identified all the time. Some evolutionists believe that the number of species named so far make up less than 20% of all living animals and perhaps less than 1% of all those that have existed in the past.

The success of an animal or of a phylum can be measured by the length of time it has persisted on this planet. Animals existing today have successfully adapted to their environment. A new species may arise as an animal is confronted with a changing environment and through genetic mutation produces an offspring better adapted to the new environment. Thus through the process of natural selection a new species emerges. (Species is defined as a group of interbreeding individuals of common ancestry that are reproductively isolated from all other groups.)

In nature, the evolution of a new species is a slow process. With a little imagination and a grasp of an animal's requirements for survival this process could be speeded up. This exercise allows you to design an animal species of your own.

Before designing your animal, there are a few basic requirements that must be observed. The animal must live in a marine environment: that is in salt water. But it can be a benthic (bottom dweller), a demersal (close to the bottom), or a pelagic (open water) species.

It must be a multicellular invertebrate. That is more than one cell thick, even if it is a loose arrangement of cells such as is exemplified by the sponges. Also when designing your marine animal ensure that it is not structured so as to require a backbone - no fish or marine mammals.

The final requirement is that the animal be able to survive and reproduce. Do not forget you are designing a living animal, which amongst other things must be able to feed and respire, and in turn compete with, and protect itself from other animals.

Good luck with you designer animal!!