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Category	Mid
Topic	Biodiversity & Ecosystem
Sub-topic	Habitats & Adaptations

Habitat and Adaptations

Media

Video of the Activity: <https://www.youtube.com/watch?v=wTN8P6Nu6PO>



Representation of a Horse Hoof



Representation of a Camel Hoof

Description

Thanks to evolution and natural selection, postulated most profoundly by Sir Charles Darwin 160 years ago, animals undergo all sorts of adaptations to deal with the surroundings they live in. A simple comparison has been shown above.

Horses are animals that have evolved on the steppes and plateaus of Central Asia. Cold, harsh winters, desolate, hard and arid land, filled with grass in the summer and snow in the winter, these regions require the local wildlife to travel hundreds of km every day in search of food and water. Speed is of the essence. So the horse evolved to have powerful legs, and most importantly, small surface area and strong hard hooves, which allow it to run at high speeds over the prairie. Here, we have used a bottle cap to simulate this hard and small "foot"!

Camels, which roam the world's deserts, also travel enormous distances in search of food and water, but on land that is soft, sandy and usually very hot. So the camel hoof has evolved to be large in surface area and spongy soft, both features ensuring that it doesn't sink into the sand on each step it takes. Here, we have modelled that by using a cut bottle, stuffed with paper, which compresses like a cushion on each step and simulates a camel hoof on the desert sand. And make no mistake, the camel can run pretty darn fast on the desert sand too!

Humans, very cleverly, have used these adaptations to their advantage by widely domesticating these animals in these respective habitats and thereby surviving in these harsh conditions; something that may not have been possible without the help of the marvellous adaptations of these wonderful hooved mammals.

Materials Used

1. 10cm bolt with nut
2. Plastic bottle with cap
3. Newspaper
4. Sand