

# Darwin's Finches

By: Colette & Omar

## Darwin and his journey

Darwin travelled to the Galapagos Islands on the HMS Beagle. The Galapagos Islands is 600 miles off the coast of Ecuador. He stayed there for 5 weeks, in which Darwin only collected a small number of finch samples, forgetting to record where he found them. Darwin was intrigued by the differing characteristics of the finches. According to Grant (1986) Darwin stated that, "the most curious fact is the perfect gradation in the size of the beaks of the different species of Geospiza—Seeing this gradation and diversity of structure in one small, intimately related group of birds, one might really fancy that, from an original paucity of birds in this archipelago, one species had been taken and modified for different ends." Darwin was the first person to record finches' habits, research their origin, evolution, and reason varying characteristics did not provide detailed explanation for evolution of the finches. He found 14 different types of finches.

Darwin used this as an example to formulate his theories of natural selection. The theory suggested that these individual isolated populations would diverge to such an extent that they would be unable to produce viable offspring if they bred, the main definition for becoming a new species. Whilst evolution is now believed to be a lot more complicated than a gradual accumulation of adaptations, Darwin's theories are still the basis of evolutionary biology and were a truly groundbreaking scientific breakthrough.



## History of the finches

The Galapagos Islands' isolation long ago ensured that none of the species found in South America were found here. However, wind and sea currents brought across many seeds, plants and insects which began to build up an ecosystem. South American ancestors of the [Darwin's Finches](#) were likely blown off course by strong winds.

Most of these birds would have been blown out to sea and died, but some must have managed to land on the Galapagos Islands, almost devoid of animal life. Here they began to spread out across all of the individual islands and breed.

The process did not end here, as competition began to dictate the course of development. Populations of birds on different islands became isolated from each other and a gradual accumulation of small adaptations to the particular environment led to the population's characteristics drifting apart. In the case of Darwin's Finches, the main adaptation was in the shape and type of beak, as the birds adapted to the local food sources on each island.

Their beaks have evolved over time to be best suited to their function. For example, the finches that eat grubs have a thin extended beak to poke into holes in the ground and extract the grubs. Finches that eat buds and fruit would be less successful at doing this, while their claw like beaks can grind down their food and thus give them a selective advantage in circumstances where buds are the only real food source for finches. Each small adaptation gave a competitive advantage and so the characteristic spread through the population.

