

## Darwin's birds

**Birds are truly amazing creatures** that come in all shapes, colours and sizes; from the smallest hummingbird, the bee hummingbird of Cuba, which only measures 5-6 cm and weighs less than 2g, to the enormous ostrich of Africa which reaches 2.8m in height and weighs up to 156Kg!



Bee hummingbird eggs in a nest



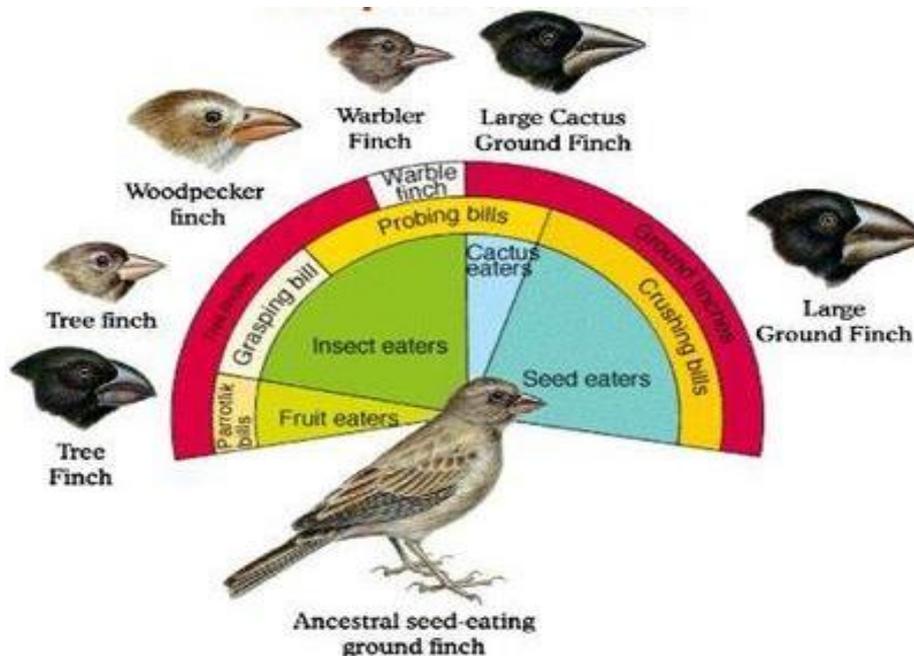
Ostrich

The reason why there is such a huge diversity (variety) of birds and animals in the world is due largely to **adaptation**. So, what is adaptation, and how does it happen?

The word **adaptation** means to change so you are better suited to do well and survive. Let me tell you a story to help explain how and why this happens.

Once upon a time, many, many years ago, well, about 185 years ago in 1835, a very famous man you may have heard of, Charles Darwin, was exploring the world on a ship called the HMS Beagle. He was sailing around the world, discovering countries and animals that the people in our country had no idea existed, how exciting! After a while, he came to some beautiful, tropical, volcanic islands off the coast of Ecuador in South America, called the Galapagos Islands, and set about exploring and collecting plants and animals. He discovered amazing creatures such as giant tortoises, marine iguanas and some very interesting birds. He noticed that on different islands he found slightly different looking birds. These birds were quite similar-looking, but often their beaks, feet, size, song and food were different, and the islands they lived on were also quite different. Why were there small differences between the birds? Darwin wondered if they had somehow adapted (changed) to be able to live better on their specific island.

The question he asked himself was ‘**how did the birds become different?**’ Darwin called these birds ‘Finches’ and what he and other scientists worked out is that a type of Finch, let’s call it the Common Ground Finch, must have flown to the Galapagos islands from the nearby mainland of Ecuador a long time ago, and gradually over millions of years they changed.



Now, imagine the same species of Common Ground Finch arrived on lots of different islands but the islands weren’t the same. For example, Island 1 is flat and wet, with lots of lovely seed-producing grasses, but not a lot of other things to eat. The finches on Island 1 with the thickest, strongest beaks would be the best at crushing seeds and getting lots of food. They would then have more babies than the finches with slightly smaller beaks. Some of the finches with smaller beaks might starve and die, others might only have a few babies and not be good at feeding them. Over hundreds, thousands and millions of years, the finches on that island would all end up having big thick strong beaks. They would become a new species of finch, the Large Ground Finch (see above) adapted to their island in this way. On other islands which have different types of food available, the same thing happened and other finch species evolved (see above). This was the beginning of **Darwin's theory of Evolution.**

This has happened with birds and other animals all over the world. Herons have long legs and neck, and a large bill to help them catch fish, birds of prey (such as eagles) have strong, sharp talons to catch and hold prey, ducks have webbed feet to help them paddle in water or walk over muddy ground etc.

Now, that you know all about adaptations, take a look at our **Birds and Beaks sheet** to see if you can name the birds using the clues about their beak adaptations!