

# Darwin and the theory of evolution

## Worksheet Teacher's notes

1. Who was Charles Darwin? Why is he famous? Do you know the title of his book or the theory he worked on?

students' own answers,

Charles Robert Darwin, (12 February 1809 – 19 April 1882) was an English naturalist and geologist, best known for his contributions to evolutionary theory. He established that all species of life have descended over time from common ancestors, and in a joint publication with Alfred Russel Wallace introduced his scientific theory that this branching pattern of evolution resulted from a process that he called natural selection, in which the struggle for existence has a similar effect to the artificial selection involved in selective breeding. Darwin published his theory of evolution with compelling evidence in his 1859 book *On the Origin of Species*.

2. In four groups go to

[http://darwin200.christs.cam.ac.uk/pages/index.php?page\\_id=j1](http://darwin200.christs.cam.ac.uk/pages/index.php?page_id=j1)

[http://darwin200.christs.cam.ac.uk/pages/index.php?page\\_id=b](http://darwin200.christs.cam.ac.uk/pages/index.php?page_id=b) and find information about:

- Charles Darwin's childhood
  - his student's years
  - his voyage on The Beagle
  - Galapagos
- then tell the class what you have learnt.

the answers are on the given web pages

3. On the contour map of the world mark the voyage of The Beagle.



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4. Charles Darwin has transformed the world of biology and science with his theory of evolution. What is evolution? Find out here:

[http://darwin200.christs.cam.ac.uk/pages/index.php?page\\_id=j2](http://darwin200.christs.cam.ac.uk/pages/index.php?page_id=j2)

Evolution is **the slow process that changes animals and plants and it's a great piece of science! It describes loads of things in nature like fossils, peacocks' tails, lions' teeth, birds' wings and human brains, just to name a few. It is also supported by lots and lots of evidence that has been collected by scientists for more than 150 years!**

A species is a group of animals or plants that are very similar. Members of a species share the same characteristics. For example the species pet cats belong to all have sharp teeth, retractable claws, fur, a tail and the same number of toes and nipples. Members of our own species, *Homo sapiens*, to give it its proper name all walk upright, have some sharp teeth and some flat ones, our eyes point forwards, we have some hair but not all over and we have pretty big brains.

**Species evolve:** All species are related to each other. If you trace your family tree back through your parents, grandparents etc. it will quite quickly join up with your cousin's family tree. So what makes all the species different? Charles Darwin had the answer! Animals and plants produce too many offspring. Think about how many tadpoles you see at the start of spring, and how few frogs you see at the end of spring. A lot of them die, because there is not enough food to go around. Of course they all try their best to get all the food they need, so they have to compete with each other. Now, since offspring inherit a lot of their characteristics from their parents birds with big beaks will have chicks that grow up to have big beaks too. So over many generations the average beak size in that group of birds which struggle to crack tough nuts will increase. Each generation changes by a really little bit, but all these changes can be added up over time to make a big difference: that's evolution!