

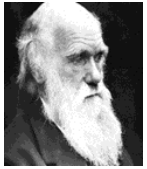


# Evolution and Inheritance Science Knowledge Organiser



Biology

## Evolutionary Pioneers



### Charles Darwin (1809-1882)

Charles Robert Darwin was an English born evolutionary biologist, naturalist and geologist who was best known for his contributions to the science of evolution. He first formulated his theory in his book "On the Origin of Species" in 1859.



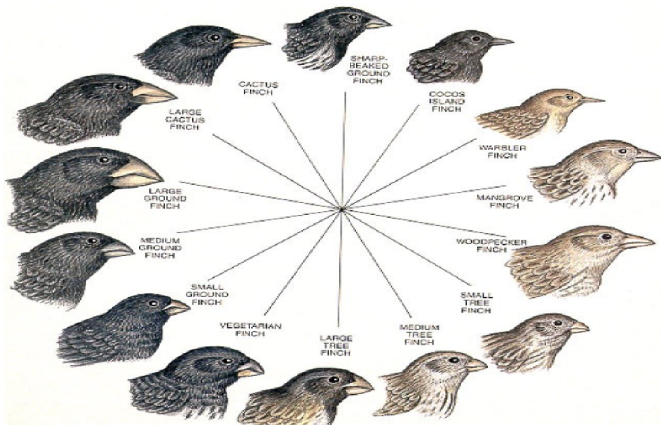
### Mary Anning (1799 - 1847)

Mary Anning was an English fossil collector, dealer, and palaeontologist who became known around the world for important finds she made in Jurassic marine fossil beds in the cliffs along the English Channel at Lyme Regis in the county of Dorset in Southwest England.

## Evolution and natural selection

Natural selection is the process whereby living things that are better adapted to their environment tend to survive and produce more offspring. The theory of its action was first fully expounded by Charles Darwin, and it is now regarded as be the main process that brings about evolution.

Darwin studied finches on the Galapagos Islands and when looking at diet and beak shape, along with more research, thought about natural selection.



## Key Vocabulary

|                          |                                                                                                                                            |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>adaptation</b>        | the process of change by which an organism or species becomes better suited to its environment                                             |
| <b>biology</b>           | the study of living organisms                                                                                                              |
| <b>breeding</b>          | the mating and production of offspring by animals                                                                                          |
| <b>characteristics</b>   | the distinguishing features of qualities that are specific to a species.                                                                   |
| <b>environment</b>       | An environment contains many habitats and includes areas where there are both living and non-living things                                 |
| <b>evolution</b>         | the process by which different kinds of living organisms are believed to have developed from earlier forms during the history of the earth |
| <b>fossil</b>            | the remains or impression of a prehistoric plant or animal embedded in rock and preserved in petrified form                                |
| <b>geology</b>           | the science which deals with the physical structure and substance of the earth, their history, and the processes which act on them         |
| <b>inherit</b>           | This is when characteristics are passed on to offspring from their parents.                                                                |
| <b>natural selection</b> | The process where organisms that are better adapted to their environment tend to survive and produce more offspring.                       |
| <b>offspring</b>         | the young animal or plant that is produced by the reproduction of that species                                                             |
| <b>organism</b>          | an individual animal, plant, or single-celled life form                                                                                    |
| <b>paleontology</b>      | the branch of science concerned with fossil animals and plants                                                                             |
| <b>theory</b>            | a system of ideas intended to explain something                                                                                            |
| <b>variation</b>         | the differences between individuals within a species                                                                                       |

## Fossils

Fossils are the remains of living things which are found in sedimentary rocks. These rocks form in layers so animals and plants can get trapped between the layers. They provide information about living things that inhabited the Earth millions of years ago and can show the evolution of species over time.



## Adaptations

Plants and animals have numerous adaptations which help them to survive in their habitats.

- Camels have humps to store food, two rows of eyelashes and small slits for nostrils
- Epiphytes are plants which can grow on the surface of another plant
- Some plants contain toxic minerals to protect themselves from predators
- Other plants can store water, trap insects and smother other plants

