

Evolution and Inheritance

Summer 1
Week 5 - 6



Chimpanzee teeth (bottom row)
This chimpanzee has large, broad incisor teeth associated with a largely vegetarian diet, eating mainly fruit and plants. Sharp, large canines are used for displays of aggression, either towards members of its own species, or other species.

Modern human teeth (top row)
This modern human jawbone has smaller, more blunt canine teeth compared with chimpanzees and other non-hominans. Modern humans do not have the gap that allows chimpanzees to sharpen their canines against premolars in the lower jaw. Our dental arch forms a more rounded shape.

Lesson 5 - 6

L.O: To identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. (K)

L.O: To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary (WS)

S.C.

- to recognise that living things have changed over time
- to begin to identifying scientific evidence that has been used to support or refute ideas or arguments
- To report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations (WS)

Vocabulary

Evolve
Chronological
Evolution
Inheritance

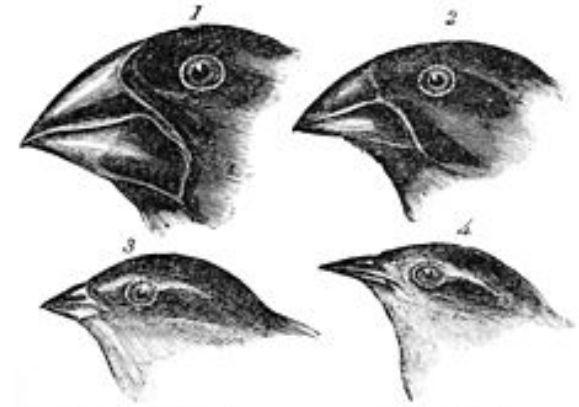
What is evolution?



Re-cap

Darwin believed that the finches started with a common ancestor, but evolved to suit the environmental conditions that they lived in (food sources, plants and insects) on the individual islands.

Darwin's finches



1. *Geospiza magnirostris*.
2. *Geospiza parvula*.

3. *Geospiza fortis*.
4. *Certhidea olivacea*.

Large ground finch, Medium ground finch

Small tree finch, Green warbler-finch

Scientific classification

Kingdom:	Animalia
Phylum:	Chordata
Class:	Aves
Order:	Passeriformes
Family:	Thraupidae

Genera

Geospiza

Camarhynchus

Platyspiza

Certhidea

Pinaroloxias

Task 1:

- *What human adaptation would help you be best fitted to your environment?* (E.g. extra fingers or thumbs to improve texting, bigger brains to process more information, larger more effective eyes to see in the dark, etc.) Write your ideas. Remember to justify!

Task 2:

- You must create a fact card about a plant or animal and how it has adapted to suit its environment. *What information might you need? Where might you find this?* To help you succeed, you will need to do some research, e.g. through the internet or books.

Task 3

Comparison of chimpanzee and human teeth.

Write about the similarities and differences between the two different types of teeth.

Questions to consider;

1. What are the similarities and differences between the two sets of teeth?
2. Why do you think the teeth are different?
3. What could the different type of teeth for each of the animals tell us about their diet?
4. What other information can you deduce from the two sets of teeth?



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Chimpanzee teeth



Human teeth

Extension; write HOW you believe the teeth have adapted and WHY.

Task 4:

L.O: To be able to infer and deduce what these creatures could have looked like.
Draw your deduction next to the skeleton.

A large empty rectangular box with a dashed border, intended for drawing a reconstruction of the dinosaur from the first image.A large empty rectangular box with a dashed border, intended for drawing a reconstruction of the dinosaur from the second image.A large empty rectangular box with a dashed border, intended for drawing a reconstruction of the dinosaur from the third image.

Evolution revolution!

Charles Darwin (1809-1882) was one of the world's greatest scientists. He had an amazing and exciting life studying nature and travelling all over the world. His ideas completely changed the way people thought about living things.



The voyage of the Beagle

Aged 22, Darwin sailed around the world on the ship HMS Beagle. When the ship docked, he would get off and explore!

On the Galapagos Islands in the Pacific Ocean, Darwin found some unusual animals like huge tortoises and lizards that could swim in the sea!



Darwin's big idea

Darwin thought that individual animals and plants competed with each other for food, water and space – the things they need to live. They were in competition with each other for these resources and struggled to survive. He thought those with features best fitted to survive in particular environments were naturally selected.

Did you know?

Darwin was not a good sailor and was horribly sea sick on the voyage of the Beagle.

Darwin's ideas caused a sensation! People used to think that species were completely separate from each other. Darwin explained how all living things, including humans, came originally from the same living things. He said that those living things had changed over time to form the millions of different species we see today.

find out

Many people think that a man called Alfred Russel Wallace is as important as Charles Darwin. Find out about Wallace and his ideas.



Alike, but different

Do you look a bit like your brother or sister? Does your mum look a bit like your grandmother? Families tend to share similar characteristics like skin colour, type of hair and face shape. They pass these features on to their children. We say that features are 'inherited'.



Gradual change

This happens in nature too. Every species (group of plants or animals which are similar and are able to produce young together) passes on characteristics to the next generation.



Not every baby is identical to its parents; they all vary slightly. Some variations give individuals an advantage.



We're all a bit different. I have the best eyesight and reaction time so I'll catch the most mice.

Successful variations give those animals a better chance to survive and pass on these helpful characteristics to future generations. Over many generations very noticeable changes or 'adaptations' can be seen. Eventually the accumulation of these small changes can result in an entirely new species. We call this process evolution.

Find out

Find out about selective breeding in dogs. Why are there so many different types of dog?

