

Evolution in primary schools



For details about free CPD and free posters
email Sciencebox@reading.ac.uk

Year 6: Evolution and Inheritance

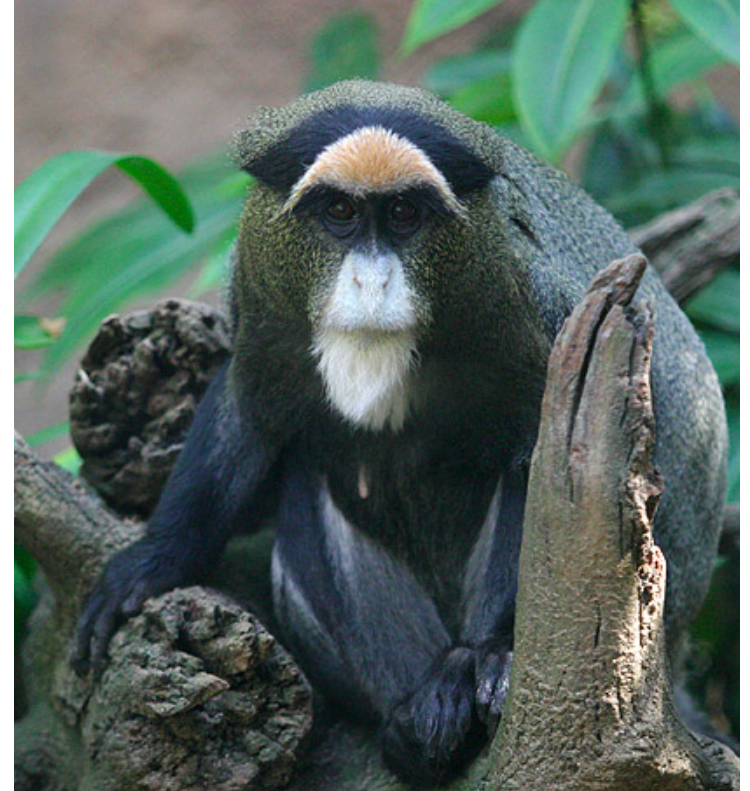
National Curriculum Outlines:

- recognise that **living things** have **changed over time** and that **fossils** provide information about living things that inhabited the Earth millions of years ago
- recognise that living things produce **offspring of the same kind**, but **normally offspring vary** and are not identical to their parents
- identify how animals and plants are **adapted to suit their environment** in different ways and that **adaptation** may lead to **evolution**.

Key ideas and addressing misconceptions

How long evolution takes

- Children say – I've never seen an animal change into a different type of animal!
- Teachers should be aware their students may struggle to realize that we see changes happen in populations of animals (not animals themselves) over many, many generations – taking thousands and millions of years.



https://commons.wikimedia.org/wiki/Monkey#/media/File:Lightmatter_guenon.jpg

Science and religion

- Children from religious and non-religious backgrounds can feel enthusiastic and positive about learning about evolution.
- Science and religion are not necessarily incompatible
- The Church of England and The Pope are comfortable that Christianity is compatible with evolution.
- Proponents of the view that evolution and religion are compatible can be found in all the major religions (Buddhism, Christianity, Hinduism, Islam, and Sikhism)
- The scientific community is diverse. Some scientists have a religious faith and some do not.

It's not anthropomorphic

Teachers should avoid emotive language that implies forward thinking or a decision to evolve. Evolution is the effect of natural pressures acting on a population.



Avoid statements that promote anthropomorphic thinking

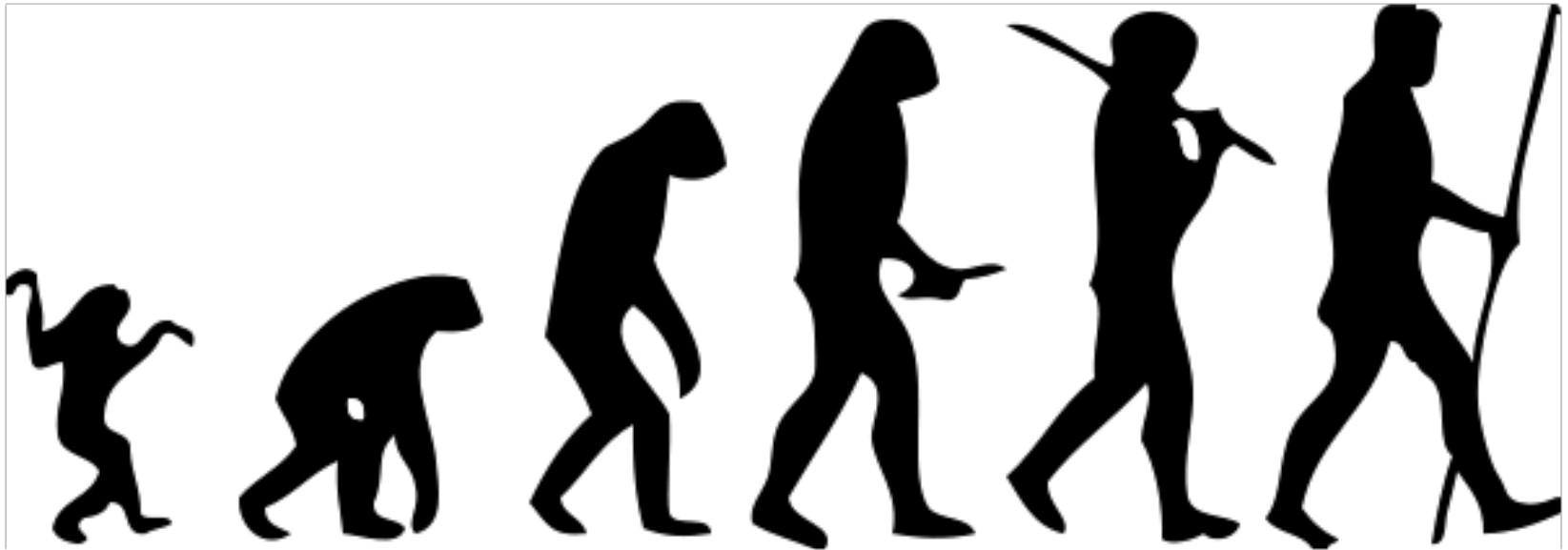
Any statements implying:

- thought or conscious intention
- goal-directed behavior
- ...evolved **to** reach food...
- ... needs ...
- ... wants ...
- *the plant seeks light,*
- *some plants prefer shade*
- *the roots try to find water*

A common graphic that encourages misconceptions

Misconception – Humans evolved from monkeys

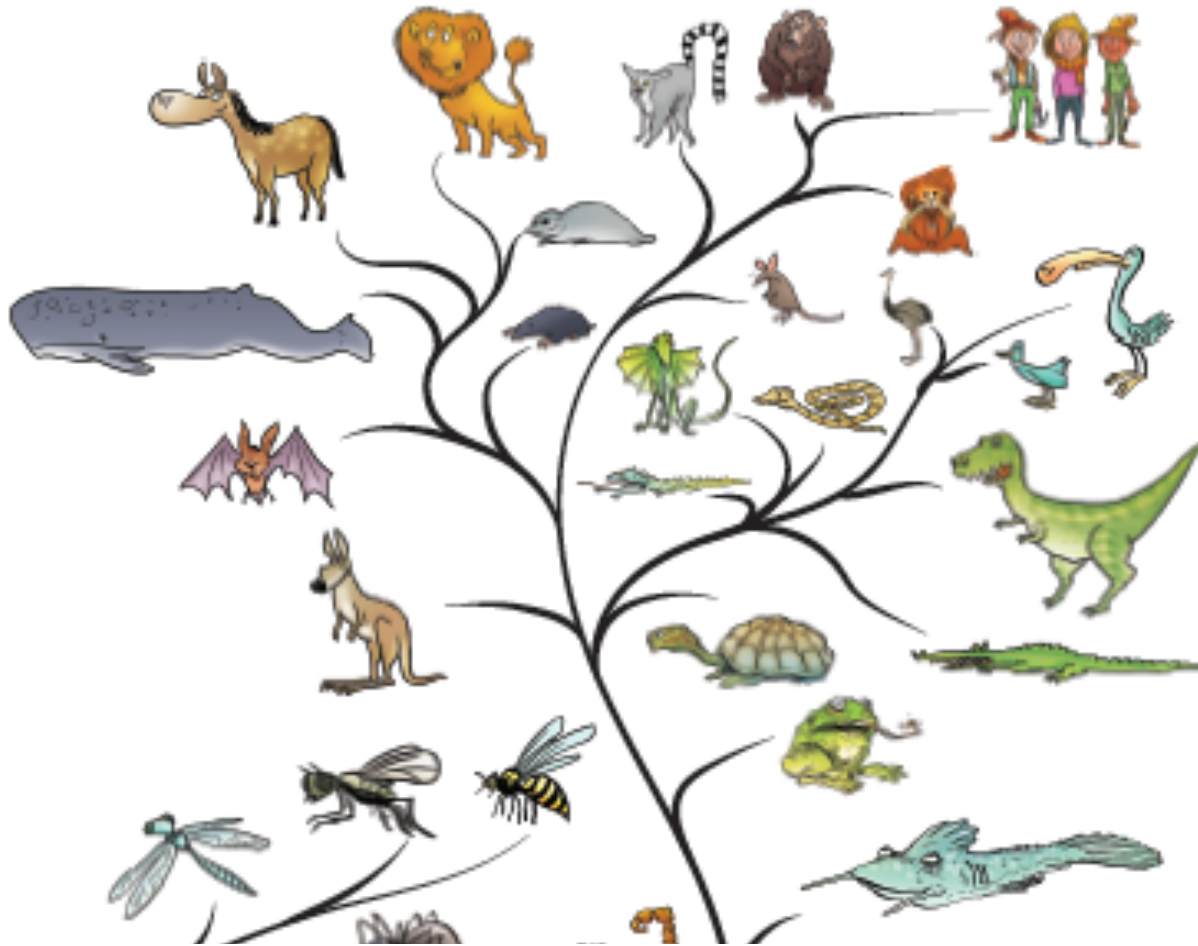
Reality – Humans and monkeys share a common ancestor. Humans evolved from ape-like ancestors



For more examples of common misconceptions and FAQs visit

www.PrimaryEvolution.com

Show an evolutionary tree



Evolution by natural selection – Scientific framework

1. Individuals in a population show variation.
2. In certain conditions, some pre-existing variations are favourable .
3. Individuals with those variations are reproductively more successful
4. Those variations become more frequent in the population
5. Over many generations the population evolves
6. As conditions change, other pre-existing variations are favoured

Building understanding – through activities

Activities

- Evolutionary history of life – timeline
- Fossils - a way to find out about things that existed in the past
- Adaptations – dinosaurs, cacti, Venus flytrap
- Evolution by natural selection - bird beaks

Evolutionary timeline of life



- Link to video

<https://www.youtube.com/watch?v=pTTOFLyV-o8>

- Script provided on website www.PrimaryEvolution.com
- In pairs or small groups the students re-enact the news story

Fossils jelly



Organisms of modern history

Colonisation of land plants

First aquatic organisms

Multicellular organisms

Single celled organisms

Dinosaur adaptations

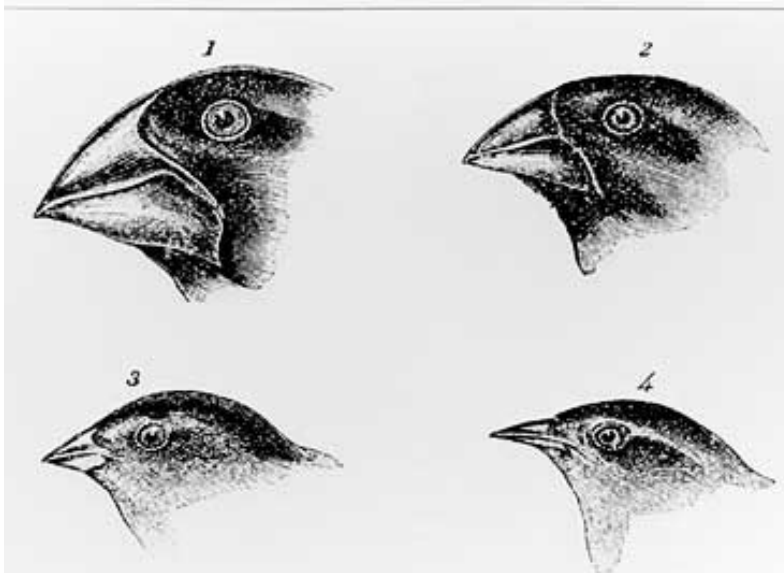


- Video:

https://www.youtube.com/watch?v=_eBvDYyakOQ

- Dinosaurs
- Cactus & Venus flytrap

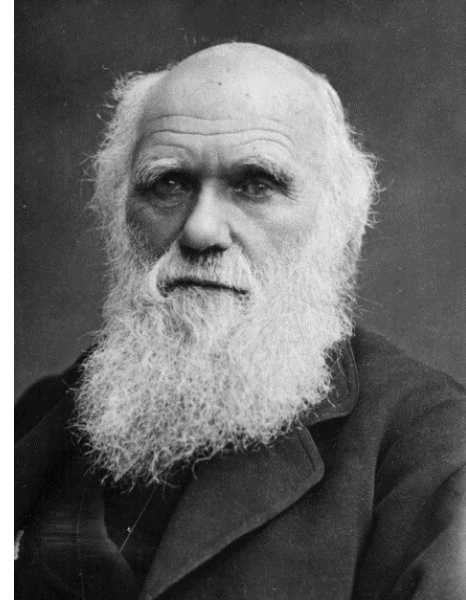
Bird Beak Investigation



Bird beak investigation is a hands on activity where children use tools to pick up 'food' and discover which beaks are effective for which foods.

The Galapagos finches have different beak shapes on the various islands. Their beaks are adapted to the available food in each location. A great example of adaptations to the environment and evolution by natural selection.

Darwin



Display activity for your classroom. Follow Darwin on his voyage around the world on the Beagle. Divide your class into small groups and have them write about certain points on his voyage. Pin these pieces to the display at the location he visited!

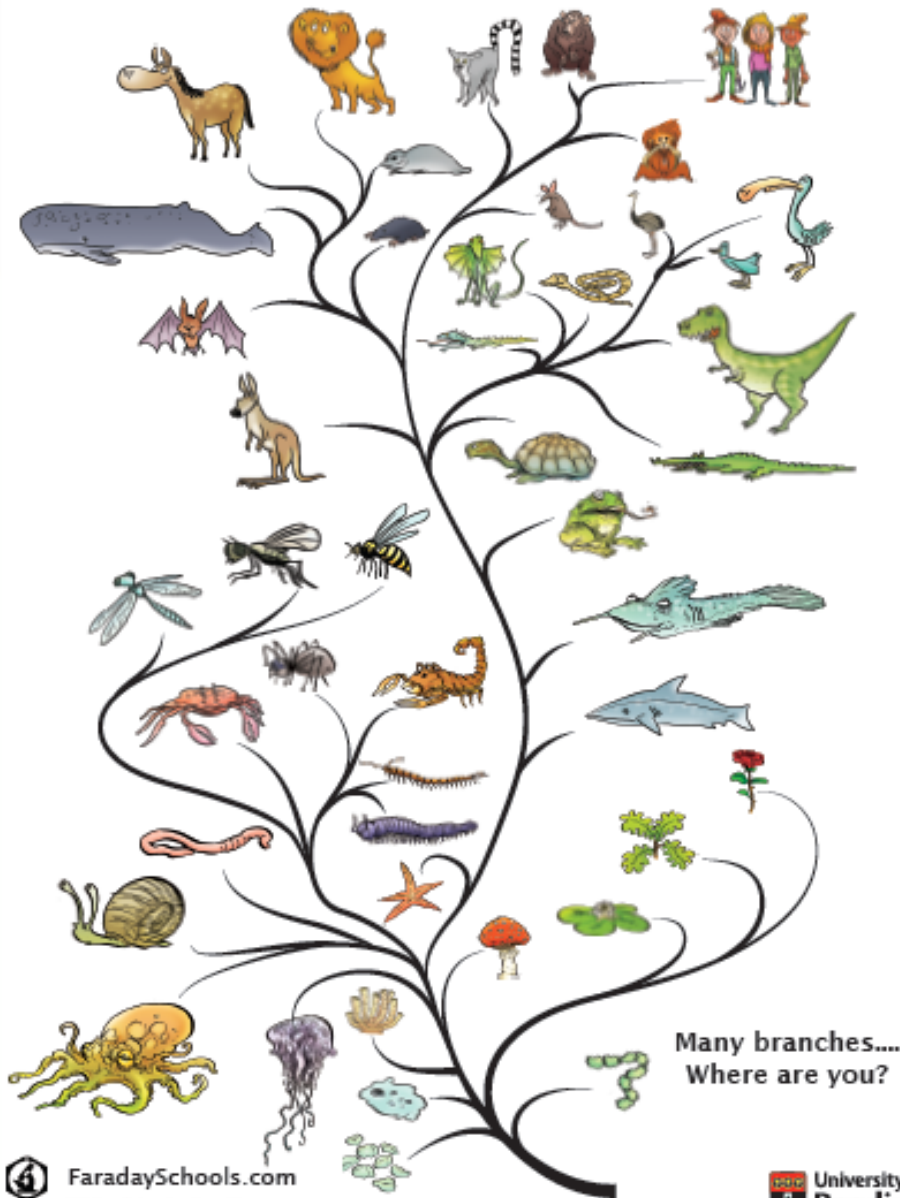
Toucan and Hummingbird

The toucan's beak **is adapted to** grabbing and crushing fruit and nuts. It is strong like a nutcracker.

Try to introduce these key words to your students!
Instead of saying 'a toucan's beak' use terms like adapted, adaptation, evolved!



Evolution



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More information

- www.PrimaryEvolution.com
for resources to teach evolution
- www.faradayschools.com
has cross-curricular resources
for RE lessons