



EVOLUTION AND ADAPTATION



Hybrid Polar/Grizzly bear



THIS TEACHERS' SHEET aims to let you know what is involved in your chosen activity so that you can prepare your class for the day and help them to get as much out of their visit as possible. Trips and visits away from school are expensive, but if planned carefully, a visit to the Park can provide a basis for a wide range of activities across all aspects of learning. Linking your visit to activities at school, before and afterwards, will really strengthen the learning experience for your class and will make the most of the time and money spent during your visit to Highland Wildlife Park.

PRIOR TO YOUR VISIT Teachers can visit the Park free of charge to help with lesson planning and to make sure you know the layout and facilities available at the Park. Please contact the education officer on [01540 651981](tel:01540651981) to arrange your free visit. If you require any help or more information prior to your visit also contact the Education Officer on hwpeducation@rzss.org.uk.

Remember that a visit to the Highland Wildlife Park can offer a great learning platform for many different subjects and topics such as English, Art and Current affairs—be flexible and imaginative in your approach to your visit and how you use your visit to develop the key capabilities in your class.

DURING YOUR VISIT your class will be introduced to the concept of Evolution and the Origin of Species. The workshop will illustrate Darwin's voyage on the Beagle and subsequent discoveries in the Galapagos Islands. The education officer will use examples from around the world and from the Highland Wildlife Park to illustrate biological concepts such as adaptive radiation and natural selection. The polar bear evolution and adaption workshop discusses the ecological niche that it has fulfilled and how it got there.

Things to encourage your class to think about to **HELP YOU GET THE MOST FROM YOUR VISIT.**

- Should international laws be passed to prevent hunting specific animals, even though certain cultures have traditional reliance upon these animals i.e. Inuit hunting whales, seals and polar bears?
- Conservation or preservation. If there is very little habitat left is it worth conserving the animals that lived there. Is it the natural order of life extinction?
- Look at the animals within the mountain and tundra regions and see how they have evolved and adapted to live within this environment. Are there any similar species in different environments such as the arctic fox and the red fox? What are their differences?
- Do we allow natural hybridisation (Grizzly X Polar Bear) or do we try to keep the species pure?
- Is this due to accident or evolution are these changes caused by the environmental upheaval?



Grizzly bear



Polar bear

VOCABULARY - encourage children to investigate what these words mean. They will then be able to understand and take in more on the day of their visit.

Evolution
 Natural selection
 Variation
 Natural selection
 Alleles
 Adaption
 Extinction
 Hybrid

OTHER TOPICS WHICH MAY BE OF INTEREST

- What are people perception of predators?
- What is the point of zoos?
- Zoos and conservation
- Animals at risk
- Skulls, teeth and diet
- Animal observation and enrichment
- Re-introduction
- Wildlife crime
- Enclosure design



ACTIVITIES FOR THE CLASSROOM - BEFORE OR AFTER YOUR VISIT

Social education / Art

- Look at the different ethnic groups within Scandinavia and the high Arctic and see how their cultures differ or how they cope living in such a harsh climate.
- What are the physical and cultural differences/similarities between different groups of people i.e. Inuit, Sami, Chukchi, Koyaki and Yakuts that live in the arctic?
- Research other animals from either the Park or Tundra environment and find out what their evolutionary path has been.
- Design your own animal like the Leucrocuta or the Opinicus.

Links

<http://www.arcticpeoples.org/>

<http://www.eaudrey.com/myth/>

GEOGRAPHY AND BIOLOGY

- Research the voyage of the HMS Beagle and where it visited. How have these regions changed over time?
- During the voyage Darwin started to formulate his ideas of the Origin of Species. What gave him the ideas of adaption to fit their environment?
- What are the limiting factors that separate the animals that live to breed and those that die before breeding?
- Look at the tree of life and the biodiversity that surrounds it.
- Research the last extinction and the possible 6th extinction.

Links

<http://www.aboutdarwin.com/index.html>

http://www.actionbioscience.org/newfrontiers/myers_knoll.html

<http://www.wellcometreeoflife.org/>

ENGLISH / RELIGIOUS EDUCATION

- Discuss the Evolution V's Intelligent Design.
- How did Darwin's theories affect the world around him , with regards to biology and religion?

RESOURCES

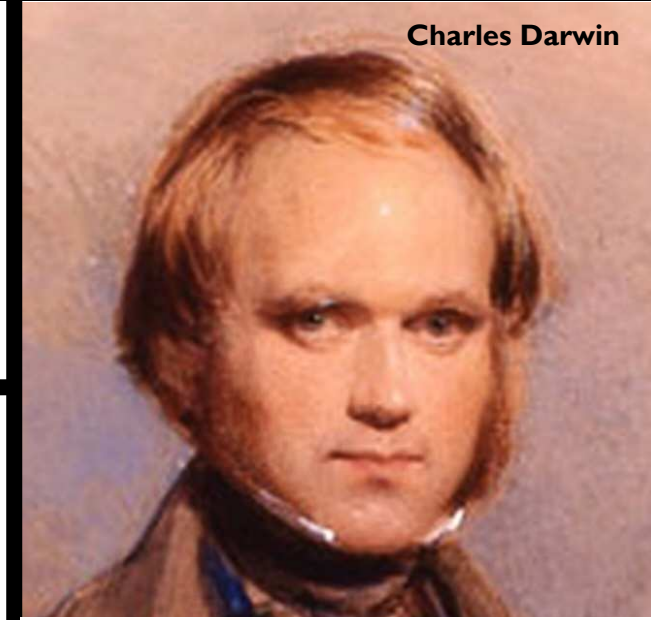
Links

<http://www.issr.org.uk/darwin-religion.asp>

<http://www.darwin200.org/info-for-schools.html>

<http://darwin-online.org.uk/>

<http://www.nhm.ac.uk/nature-online/evolution/index.html>



Charles Darwin

