
A humanist perspective on...how the earth began

- Scientists think the universe just happened. It began with a big bang and it is still getting bigger.
- After the big bang there were lots of stars and planets. The Earth is one planet and it goes around a star, the Sun.
- After millions of years, life began in the sea. At first living things were tiny.
- Very slowly living things changed. Some became bigger and more complicated. There were plants and fish and other animals. The ones that were stronger or cleverer or found the most food did best.
- Others changed, or died out.
- Today, living things go on changing – some do well and others do not. Humans have done well because our brains grew very big, and we use our brains.

Questions to think or talk about

- Why do polar bears have thick white coats?
- What are fish good at?
- What are birds best at?
- Can we run as fast as horses?
- Can we make webs like a spiders?
- Could we live in the Arctic?
- Could we live under water?
- Can we fly like birds?
- What are human beings good at?

Teacher's Notes

Some background

How do we know all this? Fossil record, looking at the stars, theory of expanding universe, how life could have begun.

Many of the reference books written for older children (below) are good introductions to the subject and contain excellent illustrations (especially books from Dorling Kindersley, who also make videos (*Eye Witness* series: *Life, Fossils, Earth, Early People*).

Also recommended for teachers, the BBC DVDs *Life on Earth* and *The Story of Life*.

The Natural History Museum, London, is worth a visit and has an excellent bookshop. Local museums may display fossils.

School Science co-ordinators or teachers' centres may be able to provide fossils and other materials.

Further reading:

How Life Began (Wayland), KS2-ish, but useful for pictures.

Evolution (Dorling Kindersley *Eyewitness Guides*), sound science and excellent illustrations, a very comprehensive guide to the subject, for junior level. A very good series.

Prehistoric Life (Dorling Kindersley *Windows on the World*).

Visual Dictionary of Prehistoric Life (Dorling Kindersley), intended as a reference book for adults as well as children.

Living World Encyclopaedia (Usborne)

Worldwise: Our Planet (Watts)

I wonder why the dodo is dead (Kingfisher), suitable for younger pupils.

Origin of Species (British Museum/Cambridge University Press)

Man's Place in Evolution (Natural History Museum/Cambridge University Press)

First book of long ago, Neil Morris (Dempsey Parr)

Follow-up work and questions

On change and evolution:

- What evidence can children see of things that have changed, even in their short lives?
 - What has changed since their parents were at school? Family photos, old photos of schoolrooms and classes can be useful.
 - Looking at fossils – species that once existed and no longer do.
 - Which things around us are living things and which aren't?
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- Looking at all the different breeds of e.g. dog – how selective breeding can create new varieties.
- The peppered moth – its camouflage evolved very quickly as response to pollution / clean air (see DK *Evolution*, p 36, 58 or British Museum *Origin of Species* pp 74-76)). Children could be shown pictures of moth and environment and asked to speculate on reasons for change.
- Dinosaurs died out (perhaps because of a natural disaster) but reptiles and birds are quite close descendants, e.g. iguanas.

On adaptation:

- What are human beings good at? How do we use our brains to help us survive?
- What are [any appropriate animal that the class knows something about] good at? How do they use their ... to help them survive?
- Some living things are so well adapted that they haven't changed much, e.g. coelacanths.

A good subject to provoke awe and wonder:

- At the scale of the universe.
 - At the immensity of time involved in evolution.
 - At the variety of life, and the fact that it all shares the same ancestry (look at some of the living things around the classroom – people, trees, spiders, flowers, grass, hamsters, fish etc – all related!).
 - At the mystery of how life began, something scientists are still thinking about.
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