Year 6 Summer Term

Evolution and inheritance

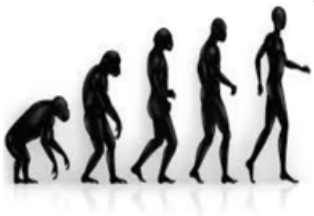
Prior knowledge

Not covered – new learning

National Curriculum for year 6

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

Overview



-Evolution is a change over time. It occurs when there is competition to survive (natural selection).

-Characteristics are passed from parents to their offspring. This is called inheritance.

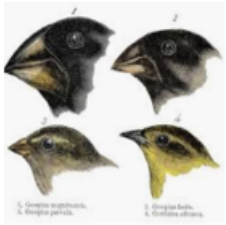
-Offspring are not identical to their parents. Some characteristics are inherited, but some are new in the offspring – these are called mutations.

-Fossils are remains of living things, and provide evidence about living things from the past.

-Animals and plants are suited to their environments, and adaptation leads to advantageous changes.

Evidence for Evolution

Fossils are the remains of living things, found in sedimentary rocks.



-When paleontologists compare animals in fossils to animals today, they can see similarities and differences between them.

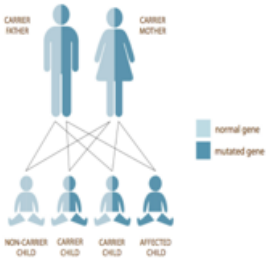
-e.g. Fossils show that giraffes necks did not used to be as long. They have developed over time to reach high branches.

-Living things also provide evidence of natural selection and evolution.

-e.g. On the Galapagos Islands, Charles Darwin found differences between finches from island to island. They had adapted for the different foods that they eat.

Inheritance and Mutation

Evolution is the name given for changes to a species over time.



-Living things produce offspring of the same kind.

-Some of a parent's characteristics are passed down to the offspring – this is called inheritance.

-This is why we often share similar features with our parents, and some conditions are shared (see image).

-Inheritance is genetic, not environmental. E.g. If two blonde-haired parents dye their hair black, this does not mean they will have a black-haired child.

-Some features are new to the offspring. These are called mutations. This is why we are not exact copies of our parents.

-These changes in offspring over time allow evolution to take place.

Adaptation

Evolution & natural selection have enabled living things to adapt to their environments.

-Sometimes, changes that offspring have from their parents are advantageous – they allow the offspring to cope better in their environment.

-However, often the changes are not advantageous (called maladaptations). When this is the case, the offspring will find it more difficult to thrive.

-Natural selection can ensure that, over time, the advantageous characteristics survive in the species.

-For example, many polar animals have adapted to possess layers of blubber and/or fur (for warmth) and white outer coats (for camouflage).

-The dodo, with no predators on its island, had adapted in a number of ways that made it unable to survive when humans arrived (maladaptations).

Key vocabulary

Adaptation, Evolution, Characteristics, Reproduction,

Suggested texts

(Foxton) prehistoric life

Evolution and inheritance

Scientists

- Hippocrates -The Father of Medicine
- Charles Darwin- Evolution
- Alfred Russell Wallace – naturalist
- Rosalind Franklin – DNA
- Nettie Stevens – Geneticist

What does evolution mean?

What is the difference between evolution and

What does inheritance mean?

Can you explain adaptation?