

British Science Week 2024 Time - Genetics



National Curriculum links

Y6 Pupils should:

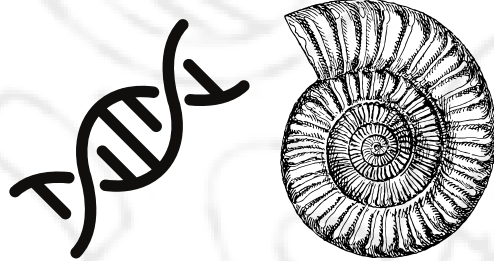
- Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago
- Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents
- Identify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

Resources/equipment

- Pack of gummy bears/gold bears/jelly babies
- Scissors

Key Vocabulary

- fossils
- Charles Darwin - evolution
- genetics
- DNA - (Deoxyribonucleic acid)
- Francis Crick
- inheritance



Video link



Teacher knowledge

- Fossils are the preserved remains of animals and plants who have been buried in sediment such as sand and mud
- Charles Darwin discovered many fossils and many of these led to his early theories regarding evolution. Many of the animals he discovered were clearly extinct but related to living species, providing clear evidence to the evolution of species
- Darwin developed his theories through exploration of places such as the Galapagos Islands. The species he found there were often unique to the islands, and he concluded 'one species had been taken and modified for different ends'
- Genetic information is carried in families in the molecule called DNA, which determines every inherited physical characteristic
- If you unravelled all DNA molecules in your body and placed them end to end it would stretch over 110 billion miles and be able to stretch to the Sun and back over 600 times
- DNA was discovered in 1869 but its role in genetics was not properly understood until scientists Francis Crick, Maurice Wilkins and Rosalind Franklin presented the double helix structure and the method of its replication. This earned the Nobel Prize in 1962

Suggested practical tasks

- How do we know about animals and plants that were alive thousands of years ago? Discuss the discovery of fossils and how these imprints in sediment have left a permanent record in time of some living things. There may be some actual fossils you could show the children - alternatively, examine some examples online
- Share some of the discoveries of Charles Darwin. There are a number of really good picture books that could support this - for example 'Darwin's Dragons.' Discuss how his explorations led him to the Evolution of the Species which showed adaptations over time
- Explore DNA and discuss how humans share much of our genetic code with some strange things - for example 25% of our DNA is the same as that of a banana! 'You are 25% banana' is a great book to explore this concept. Take some mashed soft fruit, add some washing-up liquid and salt, filter and add ethanol. The white strings which are created are the DNA of the banana
- Think about the inherited genetic code which children get from their parents. A good practical way to demonstrate this is to use gummy bears - see Atomic Tom's video!

Talk time

- What evidence do we have for the existence of living things thousands of years ago? If we can't invent a time-machine, how could we find out?
- What did Charles Darwin notice? What was his important theory? What did people at the time think about this?
- What physical characteristics have you inherited from your parents? Grandparents?