

Darwin's Delights

Spring 1: 2022—2023

Year 5



Key Learning Area - SCIENCE

We're off on an exciting expedition with Charles Darwin and his crew on HMS *Beagle*. We will visit the magical Galápagos Islands to see the amazing species that helped Charles Darwin to develop his theory of evolution by natural selection. We will collect specimens and investigate what we find, as well as delving into much of Darwin's own research. Do you know what's so special about a lava lizard, or why the blue-footed booby has blue feet? We will see how animals adapt to their environments over time and meet some of the world's greatest explorers and naturalists. This will then be linked to the evolution of humans and how inheritance and selective breeding works. Ready to trace the origin of species? Let's set sail.

ENGLISH

In English, we will use our class text *Darwin's Dragons* by Lindsay Galvin as a basis for writing a Conquering the Monster Tale and through our topic—and enjoying *Darwin's Tree of Life* by Michael Bright—we will be researching and writing non-chronological reports about animals from the Galapagos Islands which Darwin saw. To achieve this we will practice using bullet points and colons for lists; embedding the passive voice; using relative clauses and including expanded noun phrases. Our Whole Class Reading will cover chapters from our class books as well as other texts linking to Charles Darwin to back up our writing.

MATHEMATICS

In Maths we will be learning about:

- Multiplication and Division: Multiply a 4-digit number by a 1- or 2-digit number; divide a 4-digit number by a 1-digit number; interpret remainders.
- Fractions (3): Multiply proper and mixed fractions by whole numbers; find a fraction of an amount; fractions as operators; problem solving.
- Decimals and Percentages: Read/write decimals up to 3DP; round decimals to nearest whole number and to 1DP; order/compare decimals; write % as fractions and decimals.

HISTORY

Through our topic we will learn about Charles Darwin and his importance in the history of Science—particularly in relation to classification, natural selection and evolution. We will also look at fossils, their contribution to Darwin's understanding and the work of Mary Anning.

ART & DESIGN

In Art and Design, we continue to make detailed scientific drawings of plants in the style of Walter Hood Finch – a famous botanical illustrator (1817 – 1892) - developing our work from last half term.

MUSIC

Using Charanga, we will be learning *Make You Feel My Love* by Bob Dylan and sung by Adele. The material presents an integrated approach where games, pulse, rhythm, pitch and singing are all linked.

We will continue to appreciate a variety of music drawn from different traditions and from great composers through our daily Morning Music sessions.

RE

The question we will be considering is: What does it mean if God is holy and loving? We will understand that Christians believe that God is omnipotent, omniscient and eternal and that means that God is worth worshipping. Also, that God is holy and loving but have to balance this with sin and injustice. We learn that Christians do not all agree about what God is like, but follow his path and get to know him as a person.

PSHE

In PSHE Y5 will using Jigsaw to think about *Dreams and Goals*. We begin considering what our personal learning goals are and what steps we need to take for success, then we look wider to the world and making a differences.

In Financial Education we will be learning about Saving and Borrowing—considering the reasons for doing so and understand what Interest is and how it may affect decisions made.

COMPUTING

In Computing we will be learning about Computer Systems and Networks. We will develop an understanding of how information is transferred between systems/devices. We will consider small and large scale systems and we will explain the input, output, and process aspects of a variety of different real-world systems. Pupils will take part in a project with other pupils and develop their skills in working together online.

GEOGRAPHY

In Geography, we will begin our topic by tracing Darwin's route to the Galapagos islands using maps and geographical directions. We will also consider the landscape and climate of these very special islands and how this contributes to their biodiversity and interest to Darwin.

PE

In PE we will use realPE and realGym to continue to develop our Fundamental Movement Skills of Balance Co-ordination. We will also developing our Cognitive skills: understand simple tactics of attacking and defending; identify when I am doing well and how to improve; use awareness of space to make good decisions; develop strategies to outwit opponents and increase success.

FRENCH

In French we will use *Twinkl Planit* 'That's tasty'. We will look at topic areas such as I'm thirsty, open and closed, breakfast, sandwiches, I like to eat and pizzas through speaking, listening, reading and writing. Bilingual dictionaries will be used to translate and increase their vocabulary.

SMSC & VALUES

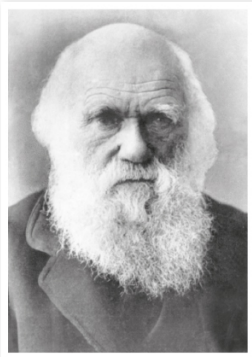
The values we will be covering are Thankfulness and Friendship.

To develop our SMSC awareness we will be discussing the moral issues behind selective breeding and genetic engineering in our topic and be encouraging the children to reflect on their involvement in World Book Day and the value of reading a wide range—including texts from different cultures and countries.

Darwin's Delights

Charles Darwin

Charles Darwin (1809–1882) was an expert in natural history who put forward a theory of evolution by natural selection. He went on a famous sea voyage in 1831 on a ship called HMS *Beagle* and visited many places around the world, collecting animal and plant samples. The observations he made led him to his theory of evolution. When Darwin's book *On the Origin of Species by Means of Natural Selection* was published in 1859, some religious people were very shocked that he was suggesting animals and humans shared a common ancestry.

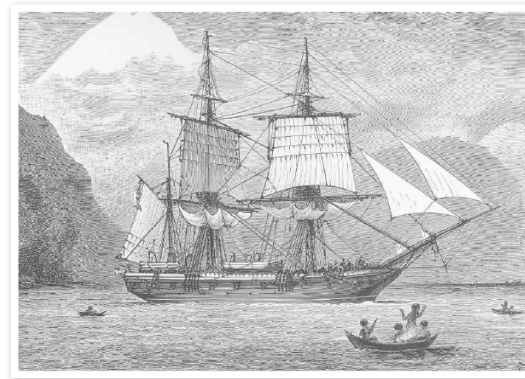


Darwin's investigations

Darwin was fascinated by the natural world and spent much of his time recording his observations and setting up experiments. During his time in the Galápagos Islands, Darwin made detailed observations about the finches, tortoises and mockingbirds he saw there. While living in Down House in Kent, Darwin continued his experiments in his 'outdoor laboratory' discovering much about plant growth, earthworm behaviour and bumblebee flight.

Route of HMS *Beagle*

On 27th December 1831, HMS *Beagle* set sail from Plymouth Harbour. It carried a crew of 73 men, including Captain Robert FitzRoy and Charles Darwin. It travelled across the Atlantic Ocean to South America where it stopped frequently, allowing Darwin to gather specimens. After spending five weeks in the Galápagos Islands, HMS *Beagle* travelled across the Pacific Ocean to New Zealand and Australia. The ship eventually arrived back in England on 2nd October 1836.

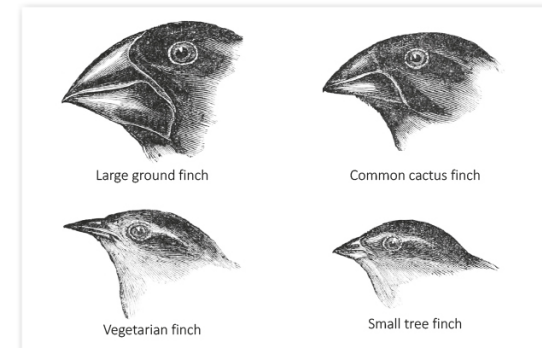


Galápagos Islands

The volcanic Galápagos islands lie 1000 km off the west coast of Ecuador in South America. There are 13 main islands, with several smaller islands and rocks. Darwin noticed that many species of animal, including land and marine iguanas, the blue-footed booby and the flightless cormorant, were only found on these islands. Darwin also noticed several different species of finch that all lived on the Galápagos Islands. Each had developed a different type of beak that best suited their diet.

Theory of natural selection

After studying the animals from the Galápagos Islands, Charles Darwin came up with the idea that animals evolve due to having the characteristics that make them best suited to their environment. He called this 'the survival of the fittest' or 'natural selection'. His idea was that in any environment, living things from the same species show natural differences in their characteristics. Darwin suggested that the living things that were best suited to their environment were most likely to survive and pass on their characteristics to their offspring. Over a long period of time, these characteristics can be seen in every animal.



Gregor Mendel

Gregor Mendel was an Austrian monk. In 1845, while working in the monastery garden, he experimented with pea plants. He discovered that particular features of each plant were passed on to their offspring. This supported Darwin's idea that characteristics were passed on from one generation to the next. Mendel put forward the idea that an offspring receives one unit of inheritance from each parent. These units are called genes, and Gregor Mendel became known as the father of genetics.

Darwin's timeline

- 1809** Born in Shrewsbury, Shropshire.
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- 1825** Attends University of Edinburgh Medical School but fails to become a doctor.
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- 1827** Attends Cambridge University in the hope of becoming an Anglican priest.
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- 1831** Sets sail on HMS *Beagle* for a voyage around the world.
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- 1835** Visits the Galápagos Islands, where he observes many species of plants and animals.
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- 1836** Returns to England on HMS *Beagle*.
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- 1839** **January** Elected a Fellow of the Royal Society, a group of the world's leading scientists.
May Publishes an account of his travels and discoveries on HMS *Beagle*.
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- 1842** Moves to Down House in Kent, where many of his observations and experiments are carried out.
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- 1859** Publishes his theory of evolution in *On the Origin of Species by Means of Natural Selection*.
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- 1871** Publishes *The Descent of Man* that describes the evolution of humans.
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- 1872** Publishes *The Expression of the Emotions in Man and Animals* that explains how humans and animals express their feelings in similar ways.
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- 1882** Dies at Down House and is later buried in Westminster Abbey.

Fossils

The only way information can be obtained about evolution and animals and plants that are now extinct, is to examine fossils. Fossils are the preserved remains or traces of ancient plants and animals. They develop over millions of years, as the soft tissues of a dead animal or plant are slowly replaced with minerals from underground water. These minerals gradually harden to stone and the mud and sand surrounding the body slowly turn to rock.



Mary Anning

Mary Anning (1799–1847) was an English fossil collector. She lived in Lyme Regis in Dorset, in an area known as the Jurassic Coast. Mary spent much of her time collecting fossils along the beach. Although she had very little formal education, she worked hard and taught herself about fossils. She became an expert at removing fossilised bones from rock to reconstruct skeletons. She made many important finds, including *Plesiosaur* skeletons, which contributed to the early development of palaeontology, the study of fossils.



Plesiosaurus skeleton

Glossary

- adaptation** A characteristic of a living thing that makes it suited to its environment.
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- ancestry** The line of relatives from which someone is descended.
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- evolution** The process by which living things gradually change over time.
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- extinct** An animal or plant species that has died out and is no longer present in the world population, such as dinosaurs.
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- fossil** The remains of a once-living organism preserved as rock.
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- inheritance** The process of passing on characteristics, such as eye colour, from parents to their offspring.
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- naturalist** A person who studies the natural world.
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- natural selection** The process where organisms that are most suited to their environment are more likely to reproduce, and in doing so, pass on these adaptations to the next generation.
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- natural world** The animals and plants that exist in nature and are not made or caused by people.
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- species** A group of organisms that have common characteristics and can breed.
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- variation** Natural differences between living things in a species.