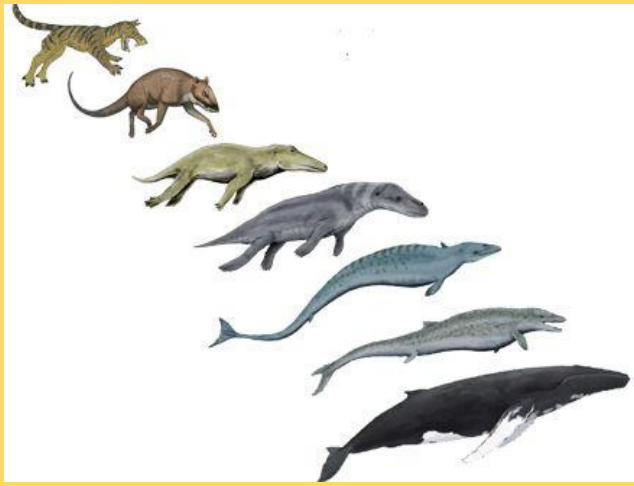


**AWE AND WONDER**  
**TOPIC: THE VOYAGE OF DISCOVERY**



**OVERVIEW:**

Join us on a journey of discovery, following Charles Darwin's voyage on the HMS Beagle around the world. This will be our vehicle in researching what Darwin saw, his findings throughout the voyage, evidence and how this ultimately ended up with his theory of evolution. During this topic, the children will build on geography knowledge to learn about the regions Darwin visited and how animals have adapted to live in these environments. To bring this topic to life we shall utilise the incredible footage from Planet Earth II and 7 Worlds, One Planet as well as visiting the rainforest biome at the Eden Project to imagine what it would have been like to enter the Venezuelan rainforest for the first time while also investigating first hand, how not only animals but plants too, have adapted in their environment.

**CULTURAL CAPITAL:**

**Climate Change**  
**Evolution**  
**Charles Darwin**  
**Mary Anning**

**Books:**  
**Malamander – Thomas Taylor**  
**Moth**

**KNOWLEDGE:**

**FOSSILS**

Fossils are the remains of living things which inhabited the world millions of years ago. They are formed in sedimentary rock (sand, mud and pebbles squashed under layers, after layer over time) and plants/animals get trapped in these layers, revealing their shape.

**HUMAN SKULL CHIMPANZEE SKULL**

When paleoanthropologists compare fossils to animals from today, they can sometimes identify relationships between them. These evidences of a species happens over such long periods of time, evidence is usually taken from fossils.

- Charles Darwin is an English scientist best known for his theory of evolution.
- He was a geologist who went travelling in 1831 on the HMS Beagle.
- He saw many animals and plants and came up with the idea of natural selection (the strongest survive and evolve).
- His book 'Origin of the Species' was released in 1859 and was controversial because it went against the creation story in the Bible.

**Evolution**

**Question:** What is adaptation?

**Answer:** A change in a plant or animal's body to suit its location which can evolve over thousands of years in the most efficient way, if they don't adapt, then they may not survive.

A camel has humps of fat storage to use up for energy in the dry desert when there is a shortage of food.

A polar bear has adapted to camouflage itself against white snow/ice so it can hunt without being seen.

A cactus stores water to help keep it alive in the desert. It also has spikes to protect itself from attack.

**Charles Darwin (1809 – 1882)**

**THE DODO**

The dodo was a flightless bird from Mauritius which failed to adapt to its new environment. Humans arrived, hunted it and introduced other animals and so became extinct in 1681.

**Evolution means change over time.** It is the reason we have so many species on earth. It happens when there is competition to survive (natural selection) and through inheritance and mutations.

**Inheritance** is when something is passed on to the next generation. Offspring are not identical to their parents and some characteristics are inherited (carried in offspring from parents) and other differences are new in the offspring – these are called mutations.

**The 7 Levels of Classification**

Today we use 7 different levels of classification. These are as follows:

Kingdom (Keeping)  
 Phylum (Precious)  
 Class (Creature)  
 Order (Organised)  
 Family (For)  
 Genus (Grumpy)  
 Species (scientists)

Here is an example of how humans are classified. You will see that our species is homo sapiens.

**Kingdoms**

Scientists have now divided living things into five larger groups called Kingdoms.

- 1.) Plants
- 2.) Animals
- 3.) Fungus (mushrooms, yeast, mould, mildew)
- 4.) Protist (protozoans, amoeba, slug)
- 5.) Prokaryote (blue-green algae, bacteria)

**Microorganisms**

If you can only see a living thing with a microscope, it means it is a microorganism. These are found everywhere. Some of them, like yeast are helpful whilst some of them are harmful and disease causing, like bacteria. It is important to know how to avoid spreading the bad ones. (Wash your hands!)

**2 Types**

- Viruses
- Bacteria
- Fungus

**ASSESSMENT:**

**EVOLUTION**

**Mini-Quiz #1** Name: \_\_\_\_\_ Date: \_\_\_\_\_

- 1) What type of rock are fossils formed in?
  - a) sedimentary
  - b) igneous
  - c) metamorphic
- 2) What are differences in new offspring called?
  - a) evolutions
  - b) mutations
  - c) inheritances
- 3) What means a change over time?
  - a) adaptation
  - b) natural selection
  - c) evolution
- 4) How has a cactus adapted to suit its environment?
  - a) it grows broad leaves
  - b) it stores water
  - c) it has fur
- 5) What was the name of Charles Darwin's ship?
  - a) HMS Beaver
  - b) HMS Eagle
  - c) HMS Beagle
- 6) What animal did Darwin say humans evolved from?
  - a) ape
  - b) dolphin
  - c) dodo
- 7) What term is used to describe when something is passed on to the next generation?
  - a) adaptation
  - b) evolution
  - c) inheritance
- 8) What was the name of Charles Darwin's famous book published in 1859?
  - a) Origin of the Species
  - b) The Natural Selection
  - c) Evolution
- 9) What is used as evidence for evolution?
  - a) bones
  - b) fossils
  - c) books
- 10) When did the dodo become extinct?
  - a) 1661
  - b) 1581
  - c) 1681

**Total Score**  
 \_\_\_\_\_ out of 10

**CLASSIFICATION**

**Mini-Quiz #1** Name: \_\_\_\_\_ Date: \_\_\_\_\_

- 1) Which one is not a microorganism?
  - a) virus
  - b) bacteria
  - c) invertebrates
- 2) What does the 'F' stand for in the 7 levels of classification?
  - a) Function
  - b) Family
  - c) Fungus
- 3) When did Aristotle classify things into 4 main groups?
  - a) 350 BC
  - b) 350 B.C.
  - c) 350 AD
- 4) How did Carl Linnaeus simplify the names of living things?
  - a) by using genus and species
  - b) by using genus and family
  - c) by using species and kingdom
- 5) Which creature is an invertebrate?
  - a) snake
  - b) fish
  - c) worm
- 6) What does the 'P' stand for in the 7 levels of classification?
  - a) plant
  - b) phylum
  - c) protist
- 7) What is meant by the term vertebrate?
  - a) has a backbone
  - b) has no backbone
  - c) has an evolution
- 8) What is the name of the kingdom green to blue/green algae and bacteria?
  - a) prokaryote
  - b) protist
  - c) phylum
- 9) When did Carl Linnaeus simplify the names of living things?
  - a) 1520
  - b) 1675
  - c) 1735
- 10) Which is not a type of fungus?
  - a) mould
  - b) mushroom
  - c) bacteria

**Total Score**  
 \_\_\_\_\_ out of 10

<p><b>New Knowledge: Science</b></p>	<p><b>Vocabulary</b></p>
<p><u>Inheritance</u></p> <ul style="list-style-type: none"> <li>- Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents in the context of inheritance.</li> </ul> <p><u>Adaptation</u></p> <ul style="list-style-type: none"> <li>- Identify how animals and plants are adapted to suit their environment in different ways in the context of environmental variation.</li> </ul> <p><u>Theory of Evolution</u></p> <ul style="list-style-type: none"> <li>- Identifying scientific evidence that has been used to support or refute ideas or arguments; Identify how adaptation may lead to evolution by examining the theories of evolution constructed by Darwin and Wallace.</li> <li>-</li> </ul> <p><u>Evidence for Evolution</u></p> <ul style="list-style-type: none"> <li>- Identifying scientific evidence that has been used to support or refute ideas or arguments; Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago in the context of the evolution of plants and animals.</li> <li>-</li> </ul> <p><u>Evidence for Evolution: Humans</u></p> <ul style="list-style-type: none"> <li>- Evidence for Evolution: Humans Identifying scientific evidence that has been used to support or refute ideas or arguments; Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago in the context of the evolution of human beings.</li> </ul> <p><u>Adaptation, Evolution and Human Intervention</u></p> <ul style="list-style-type: none"> <li>- Identify how adaptation may lead to evolution by examining the advantages and disadvantages of specific adaptations and the role of human intervention in the process of evolution. • I can explain how adaptations can result in both advantages and disadvantages.</li> </ul>	<p>Classify, classification, omnivore, herbivore, carnivore, invertebrate, insect, reptile, bird, amphibian, mammal, fish, habitat, species, extinct,</p> <p>Food chain, producer, predator, prey,</p> <p>Fossils, Adaptation, Evolution, Characteristics, Reproduction, Genetics Random genetic mutation, Fossils, Adaptation, Evolution, Characteristics, Reproduction, Genetics</p>

<p><b>Knowledge: Geography</b></p>	
<p><u>Locational knowledge</u></p> <ul style="list-style-type: none"> <li>• identify the position and significance of latitude, longitude, Equator, Northern Hemisphere, Southern Hemisphere, the Tropics of Cancer and Capricorn, Arctic and Antarctic Circle, the Prime/Greenwich Meridian and time zones (including day and night)</li> </ul> <p><u>Place knowledge</u></p> <ul style="list-style-type: none"> <li>• understand geographical similarities and differences through the study of human and physical geography of a region of the United Kingdom and a region in North or South America</li> </ul> <p><u>Human and physical geography</u></p> <ul style="list-style-type: none"> <li>• identify seasonal and daily weather patterns in the United Kingdom and the location of hot and cold areas of the world in relation to the Equator and the North and South Poles</li> <li>• describe and understand key aspects of: <ul style="list-style-type: none"> <li>• Physical geography, including: climate zones, biomes and vegetation belts.</li> </ul> </li> </ul>	<p>Continents, oceans, Pangaea, equator, equatorial belt, Axis, tilt, rotate, overhead, hemisphere, north, east, south, west, tropical, tropics of cancer and Capricorn, Climate, Climate zone, meridian, time zones, longitude,</p>

Geographical skills and fieldwork

- use maps, atlases, globes and digital/computer mapping to locate countries and describe features studied
- use simple compass directions (North, South, East and West) and locational and directional language [for example, near and far; left and right], to describe the location of features and routes on a map

latitude, biomes,  
aquatic, desert, forest,  
grassland, and tundra.