

Name _____

Charles Darwin: The Father of Evolutionary Theory

Open-Ended Response Answer Key

1. Charles Darwin's family's background in science and medicine exposed him to scientific thinking from an early age. His father's wish for him to become a physician initially influenced his education. However, his family's interest in natural history and the outdoors nurtured his passion for nature and scientific observation. This family environment played a significant role in shaping his interests and career as a naturalist.
2. In Darwin's theory, variation exists within populations, leading to differences in traits among individuals. Competition arises because resources are limited, and not all individuals can survive and reproduce. The fittest individuals, those with advantageous traits, are more likely to survive and pass on their traits to offspring through heredity. Over generations, populations gradually adapt to their environment as beneficial traits become more common, leading to an interconnected process of adaptation and evolution.
3. During his voyage, Darwin observed variations in the beak shapes of finches on the Galápagos Islands, suggesting adaptations to different diets. He also noted the similarities between fossils and living species in South America, providing evidence for evolution. Additionally, he observed the geographical distribution of species, such as marsupials in Australia, which supported the idea of evolution in isolation.
4. Darwin's theory challenged traditional beliefs about the origins of species, suggesting that they evolve over time through natural processes rather than being created in their current forms. This idea transformed scientific thinking, emphasizing the role of adaptation and common ancestry. It also led to a better understanding of the interconnectedness of all living organisms and the concept of a dynamic, changing Earth. Darwin's work sparked debates but ultimately revolutionized our understanding of the natural world and our place within it.

