Task 1 (P1) – Development of a Scientific Theory

The theory of evolution by survival of the fittest, first formulated in Darwin's book "On the Origin of Species" in 1859, is that the process by that organism's changes over time as a result of changes in heritable physical or behavioural traits. Changes that enable an organism to better adapt to its surroundings can help it survive and have a lot of offspring. Evolution by natural selection is one amongst the simplest substantiated theories within the history of science, supported by proof from a large variety of scientific disciplines, together with fossilology, geology, genetic science and biological process biology.

The theory has two main points, said Brian Richmond, curator of human origins at the American Museum of natural history in New York City. "All life on Earth is connected and associated with one another," and this diversity of life may be a product of "modifications of populations by natural selection, where some traits were favoured in and surroundings over others," he said.

More simply put, the theory can be described as "descent with modification," said Briana Pobiner, a social scientist and educator at the Smithsonian establishment National museum of natural history in Washington, D.C., who specializes in the study of human origins. The theory is typically represented as "survival of the fittest," however that can be deceptive, Pobiner aforementioned. Here, "fitness" refers to not an organism's strength or athletic ability, however rather the ability to survive and reproduce.

To understand the origin of whales, it's a necessity to possess a basic understanding of however natural selection works. natural selection will change a species in tiny ways that, inflicting a population to alter colour or size over the course of many generations. It is can be referred to as "micro-evolution."

But natural selection is additionally capable of far more. Given enclusive and enough accumulated changes, natural selection will produce entropy dew species, called "macroevolution." It will flip din service moto birds, amphibious mammals into whales and also the ancestor of acces into humans. Take the example of whales – using evolution as their fulle and knowing, however, natural selection works highers knew that the transition of early whales from land to water occurred form a series of foresee and as or s. The evolution of the blowhole, as an example, might have happened in the following way:

Random genetic changes resulted in a minimum of one whole having its nostrils placed farther back on its head. Those animals with this adaptation would are higher suited to a marine style since they'd not have had to fully surface to breath. Such animals would be more successful and had a lot of offspring. In later generations, a lot of genetic changes occurred, moving the nose farther back on the top.

Other body parts of early whales additionally modified. Front legs became flippers. Back legs disappeared. Their bodies became a lot of efficient and that they developed tail flukes to better propel themselves through the water.

Darwin additionally described a style of natural selection that depends on an organism's success in attracting a mate, a method called sexual selection.

The colourful plumage of peacocks and also the antlers of male deer are each example of traits that evolved beneath this sort of selection.

But Darwin wasn't the primary or only individual to develop a theory of evolution. The French scientist Jean-Baptiste Jean Baptiste de Lamarck came up with the concept that an organism may pass on traits to its offspring, though he was wrong about a number of the details. And around the same time as Darwin, British scientist Alfred, the Great Russel Wallace independently came up with the theory of evolution by natural selection. Darwin did not recognize anything about genetic science, Pobiner said. "He observed the pattern of evolution, however, he didn't really understand the mechanism." That came later, with the discovery of however genes encrypts totally different biological