How New Species Develop from Existing Ones

KS4 BIOLOGY EVOLUTION GENETICS Ages 11-16 ⏰ 4 min read

What Does It Mean for a New Species to Develop?

A **species** is a group of living things that can breed together and make babies. When scientists talk about **new species developing**, they mean that over a very long time — often millions of years — a population of animals or plants slowly changes so much that it becomes completely different from its ancestors. Eventually, it becomes so different that it can no longer breed with the original group. That's when we say a new species has been born.

Think of it like a family tree: your great-great-grandparents were very different people from you, but you're still the same species. Now imagine that instead of hundreds of years, we go back millions of years. The changes become so big that the creatures at the top of the tree can't have babies with the creatures at the bottom anymore.

How Does Evolution Create New Species?

Evolution is the process of change over time. It happens because of something called **natural selection**. Here's how it works: in every population of animals or plants, individuals have slightly different features. Some might be faster, stronger, or better at finding food. When life is tough — when there's not enough food or the climate changes — the creatures best suited to survive will have more babies. Those babies inherit the helpful features from their parents, so they're also good at surviving.

Over thousands of generations, these small advantages add up. Slowly, the whole population becomes better adapted to its environment. If a group becomes isolated — maybe cut off by a mountain or ocean — it will develop differently from other groups of the same species. Eventually, after enough time and change, it becomes a completely new species.

Think of it like a recipe that keeps getting tweaked. Each generation adds a tiny change, and after a hundred recipes, the dish is completely different from the original.

A Real Example: Darwin's Finches

The most famous example comes from **Charles Darwin**, a scientist who studied birds called finches on the **Galápagos Islands**. All these finches came from the same ancestor, but living on different islands, they developed different beak shapes. Birds with bigger beaks ate hard seeds; birds with smaller beaks ate tiny seeds. Over millions of years, they changed so much that they became separate species. They couldn't breed together anymore, even though they shared a common ancestor.

How Long Does It Take?

Speciation — the creation of new species — is incredibly slow. It usually takes **millions of years**. The smallest changes happen every generation, but you only notice them across vast stretches of time. This is why we see new species developing in the fossil record: rocks from different ages show us different creatures, giving us a snapshot of evolution in progress.