

Speciation and Genes

Speciation is a process where evolution leads to a **new species**.

Speciation happens when **populations** of the **same species** become so different that they **can't breed** together to produce **fertile offspring**. Speciation has two stages:

1. Isolation

During stage 1 the populations of the **same species** are **separated**. This happens when changes in the environment, caused by floods, earthquakes or formation of mountains, create a physical '**barrier**' that **geographically isolates** individuals from the main population.

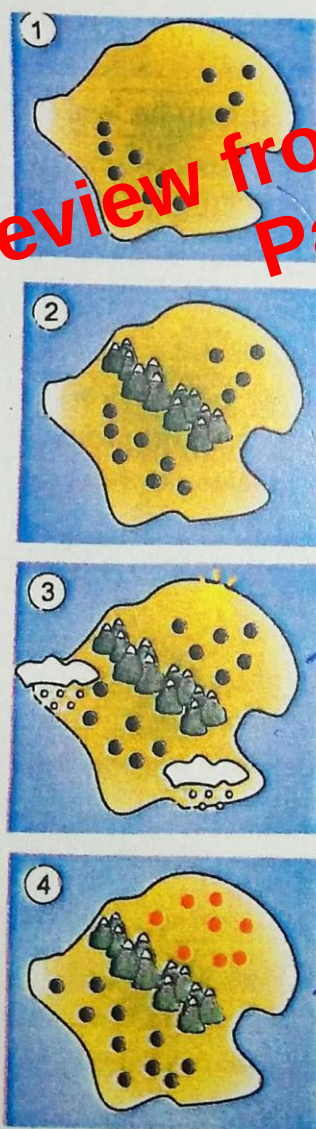
2. Conditions

On each side of the 'barrier' conditions are **slightly different**. For example they may have **different climates**.

Due to the different environments the **two separated populations** develop **different characteristics**, which become more common in each population, due to **natural selection**.

Eventually, the individuals from each population **change** so much that they are **unable to breed** with each other to produce fertile offspring. The two groups each side of the 'barrier' have become **separate species**.

- Q1. The diagrams below show the stages of speciation.
Draw lines to match the label to the correct diagrams.



A new species develops.

The populations adapt to new environments.

There are two populations of the same species.

Physical barriers separate the populations.