SPECIATION

the process by which one species splits into 2 or more species

-focal point of evolutionary theory because the appearance of new species is the source of biological diversity

-it forms the bridge between microevolution and macroevolution

PREZYGOTIC BARRIERS

impede mating or hinder fertilization if mating does occur

- habitat isolation

-temporal isolation

-behavior isolation

-mechanical isolation

-gametic isolation

HOW FAST DOES SPECIATION OCCUR?

-the time interval between speciation events varies considerable, from a few thousand years to tens of millions of years

- punctuated equillibrium: isolated episodes of rapid speciation between long periods of little to no change

gradualism: accumulation of gradual changes over time

WHAT IS A SPECIES

a group of populations whose members can interbreed in nature and produce viable, fertile offspring, but cannot produce viable, fertile offspring with other such groups

POSTZYGOTIC BARRIERS

barriers that prevent the hybrid zygote from developing into a viable, fertile adult

-reduced hybrid viability

-reduced hybrid fertility

-hybrid breakdown

TYPES OF SPECIATION

Allopatric Speciation

geographic barrier between the 2 populations

Sympatric Speciation

populations that live in the same geographic area

-polyploidy

-habitat differentiation

-sexual selection

WHY DOES SPECIATION OCCUR

reproductive isolation

the existence of biological barriers that impede members of 2 species from interbreeding and producing viable offspring

HOW DOES SPECIATION OCCUR?

- speciation can occur in 2 main ways depending on how gene flow is interrupted between populations of the existing species

- **allopatric speciation-geographic isolation**

-**sympatric speciation- no geographic isolation**

By **katiefocht25** (katiefocht)
cheatography.com/katiefocht/

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