

### 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 equilibrium:** 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**

