CONCEPT: SPECIATION

● **Speciation** is the formation of a new species through _____

□ **Reproductive isolation** is a collection of evolutionary mechanisms that block reproduction

- *Prezygotic* mechanism prevents zygote formation

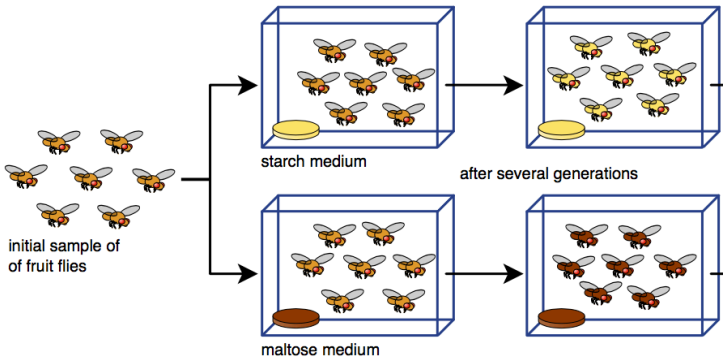
- Can be behavioral, temporal, mechanical, or gametic isolation

- *Postzygotic* mechanism prevents reproductive success of the offspring

- Can be offspring inviability, or sterility

□ **Biological species concept** describes the differences necessary to consider two organisms different species

EXAMPLE:



□ There are two types of _____

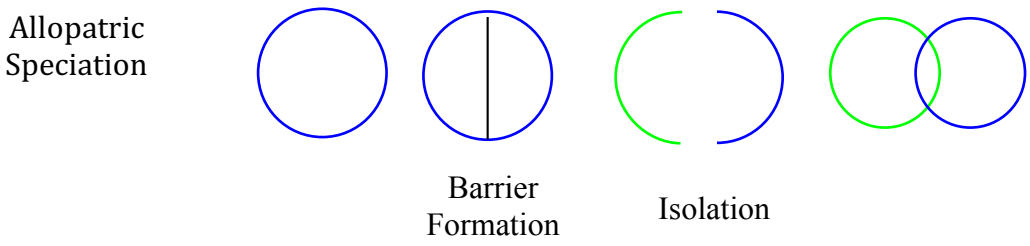
- **Allopatric speciation** is when a geographic barrier splits the population in two groups

- This prohibits the exchange of genes between the two populations

- **Sympatric speciation** is speciation in the absence of an external barrier

- Reproductive isolating mechanism evolve independent of a geographic barrier

EXAMPLE:



PRACTICE:

1. Which of the following is an example of a postzygotic reproductive isolation mechanism?
    a. Two organisms do not produce offspring because one is sleeping while the other is awake
    b. Two organisms do not produce offspring because one does not contain the appropriate body parts to mate with the other organisms
    c. Two organisms do not produce offspring because the fetus is always lost through miscarriage
    d. Two organisms do not produce offspring because one lives in water and the other lives on land

2. Which type of speciation occurs when a geographic barrier splits the population into two or more groups?
    a. Allopatric
    b. Sympatric
    c. Metapatric
    d. Geopatric