

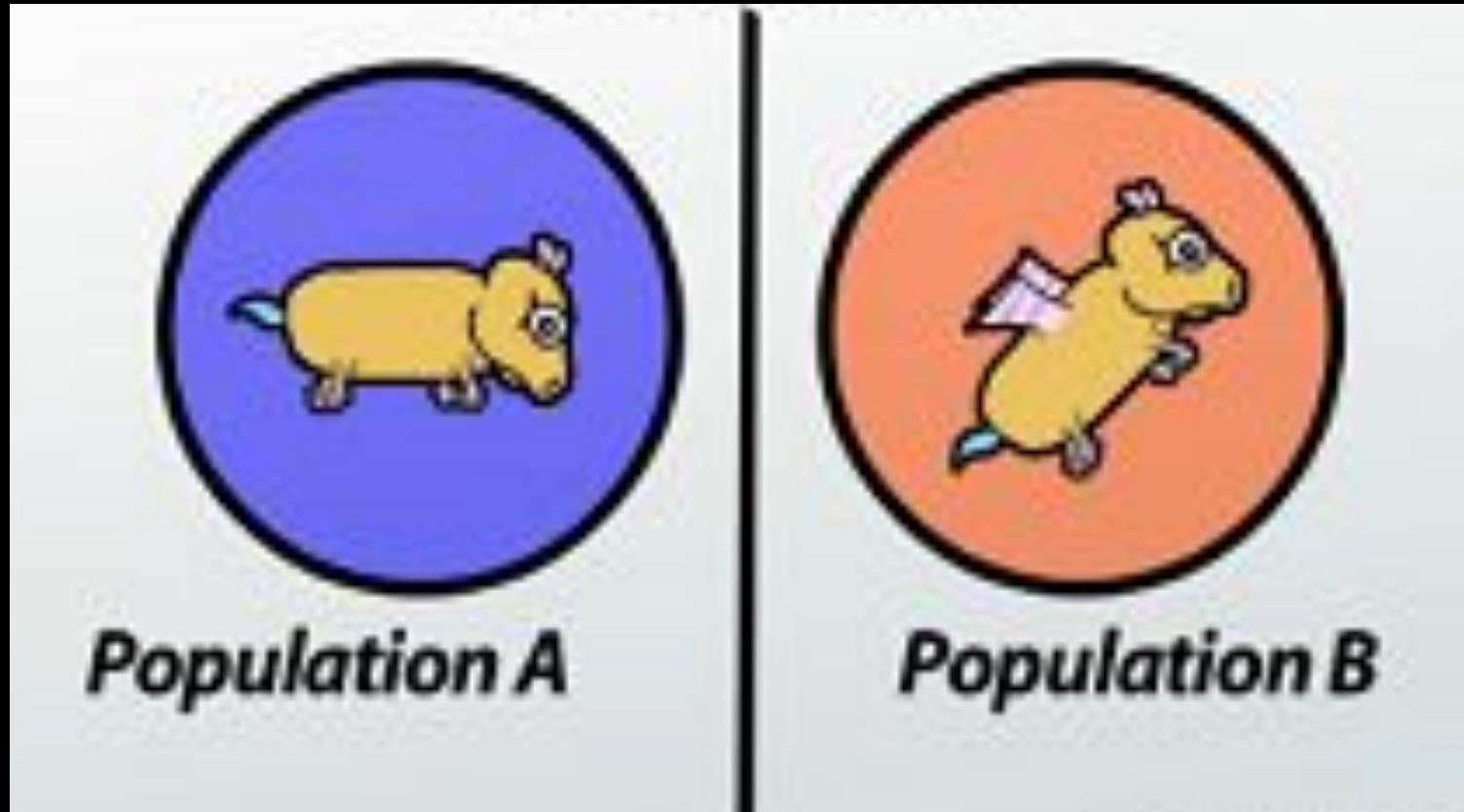
# Speciation



# Learning Objectives

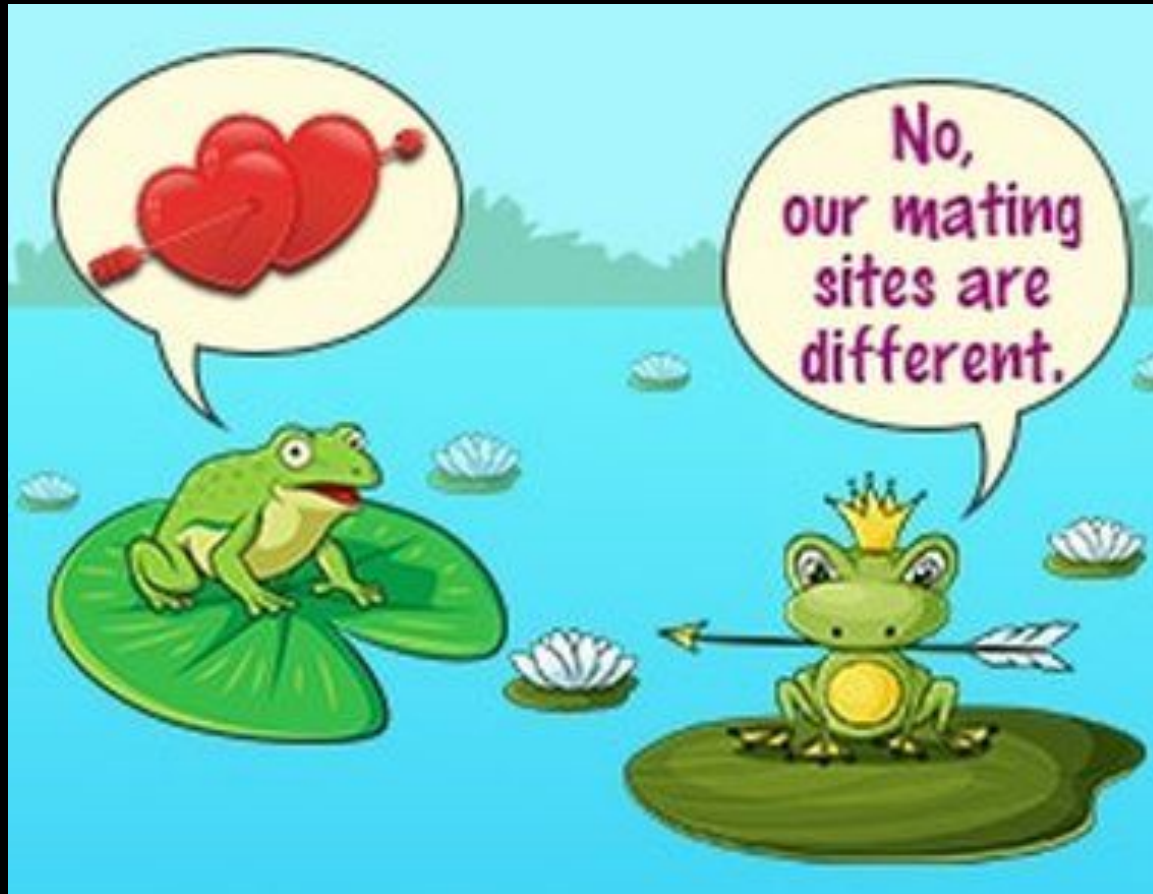
- Identify the conditions necessary for speciation to occur

# Speciation



**Speciation** - formation of a new species

# Reproductive Isolation



Occurs when the members of two populations cannot interbreed and produce fertile offspring.

# Isolating Mechanisms

The gene pools of two populations must become separated for them to become new species

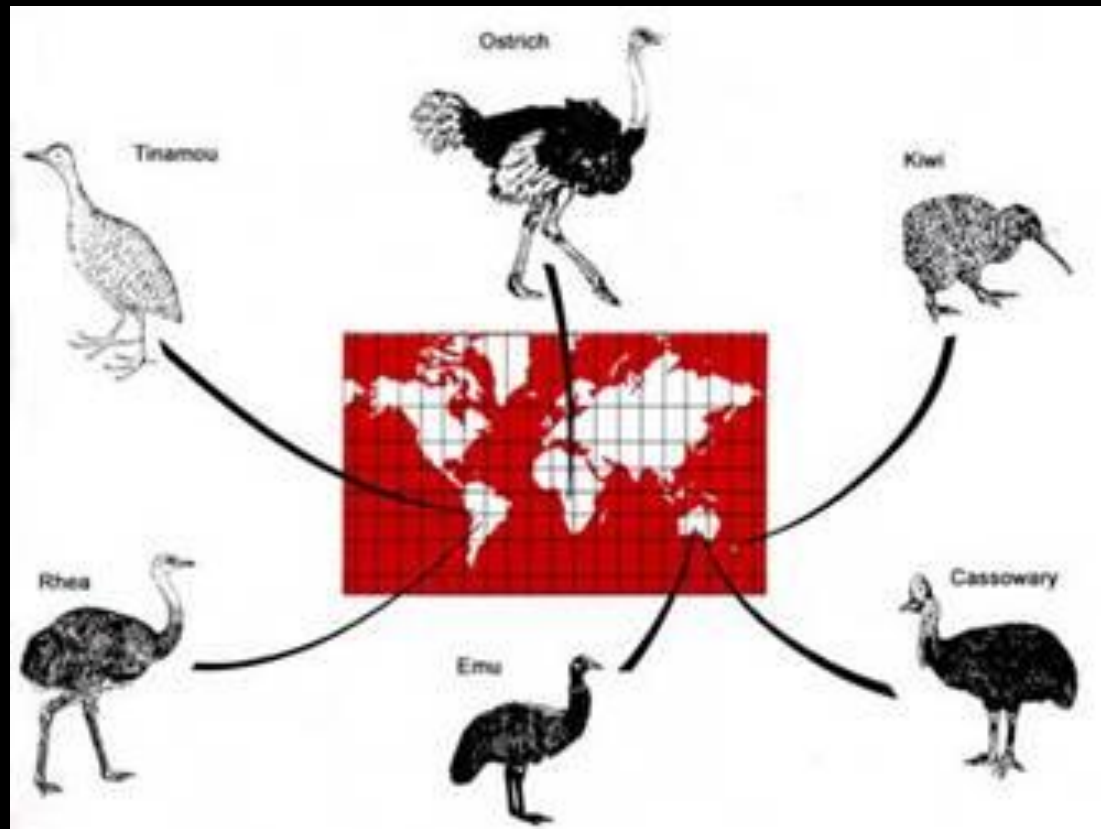
- Behavioral Isolation
- Geographic Isolation
- Temporal Isolation

# Behavioral Isolation



Occurs when two populations are capable of interbreeding but have differences in courtship rituals or other behavioral strategies.

# Geographic Isolation



Two populations are separated by geographical barriers such as rivers, mountains or bodies of water.

# Temporal Isolation

Fowler's Toad



Mates late summer

American Toad



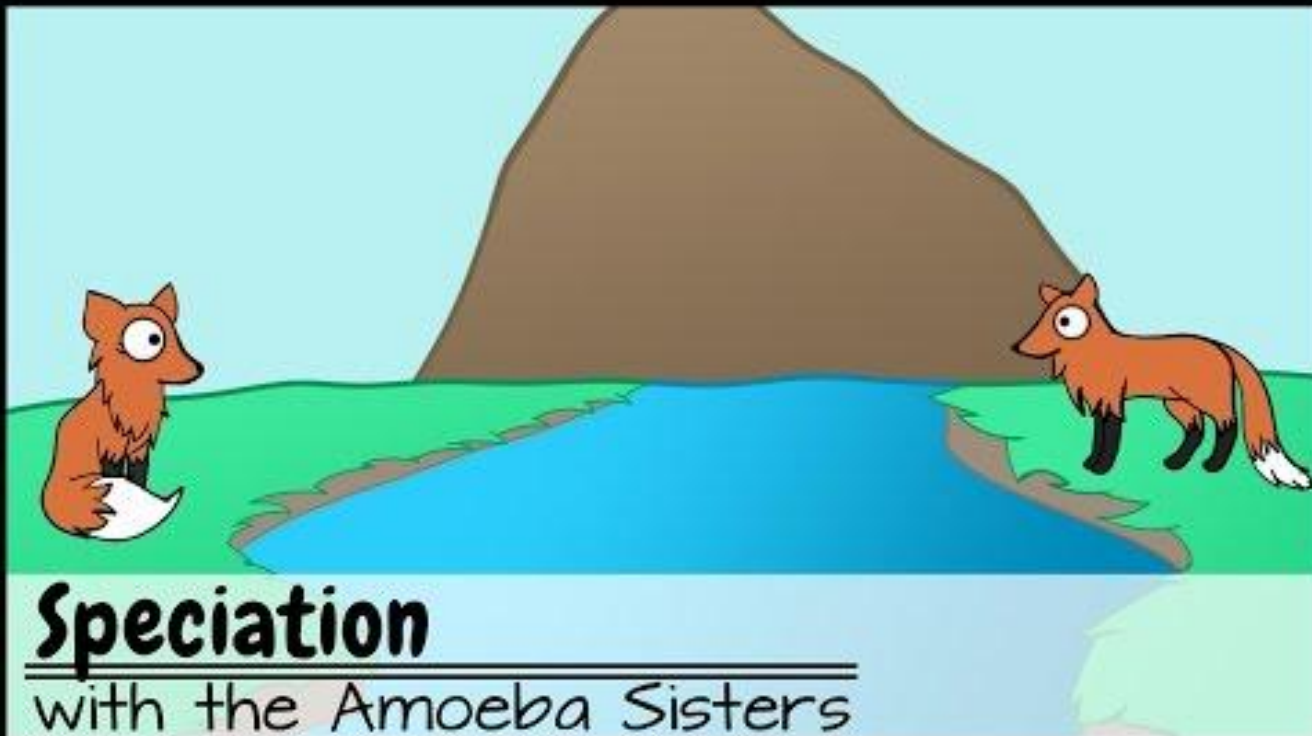
Mates early summer

Two or more species reproduce at different times.

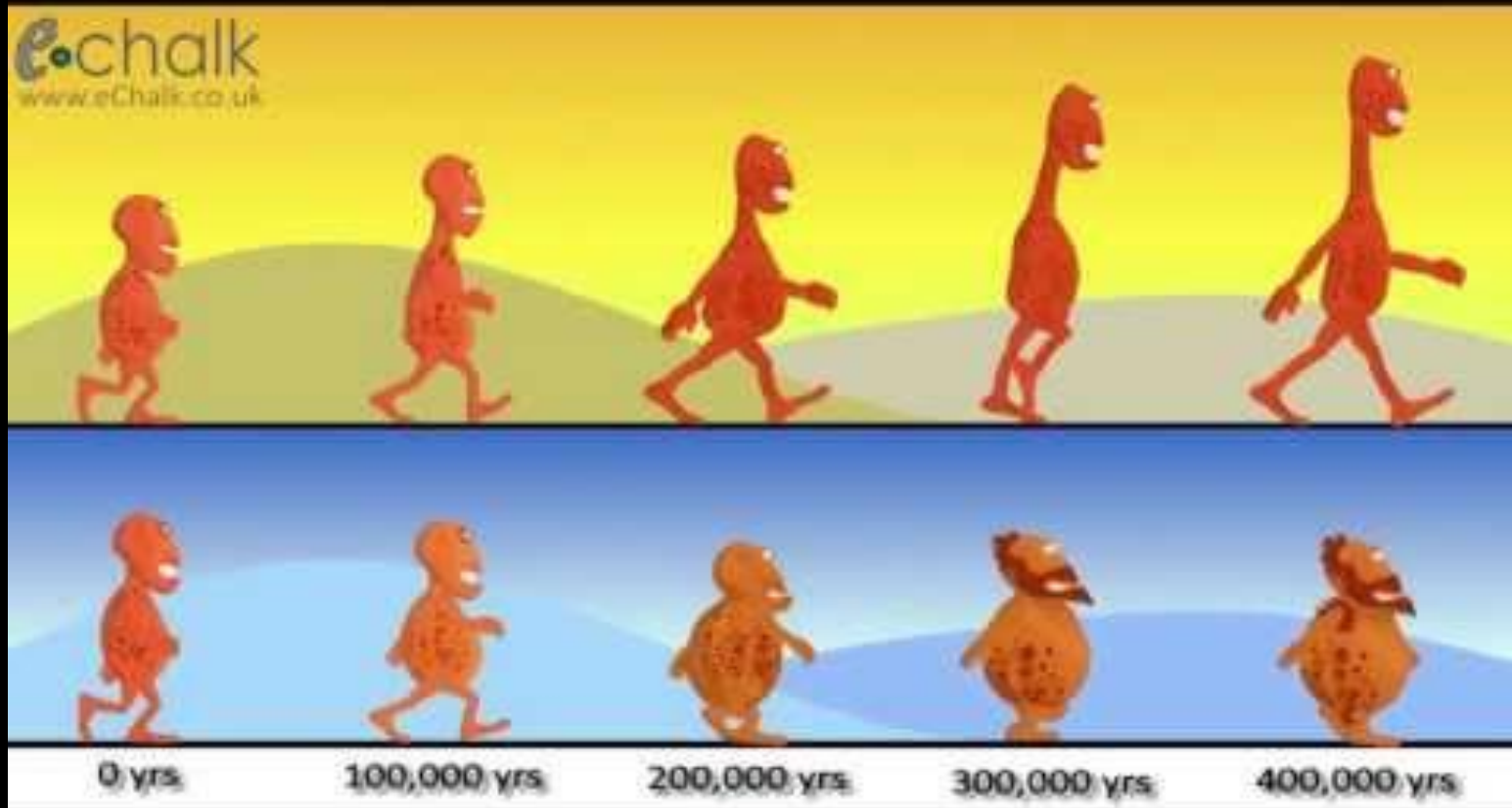


# Speciation

## Amoeba Sister



# Speciation



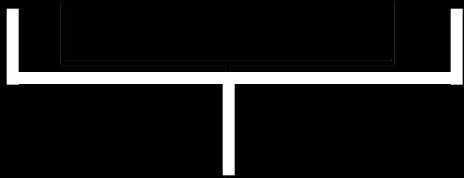
# Stop Here



# Reproductive Isolation



Occurs when the members of two populations **cannot interbreed** and produce fertile offspring.



# 3 Conditions Required for Natural Selection to Occur

- Variation
- Inheritance
- Competition

# Variation



Individuals in a population have different characteristics/traits (phenotypes)

# Inheritance



Offspring inherit a mixture of traits from their parents.

# Competition



This fish has the ability to push themselves along the sand on the shore with their fins to reach food sources that other fishes could not

Offspring with traits better matched to the environment will survive and reproduce.