

What is a species?

Species - primary classification group with most closely related members

Binomial (two-part) names:

Assigned by carolus linnaeus to each species

- Man attributed to modern- day scientific racism. Classified people into hierachal based on looks
- Linnaeus and race I The Linnaen Society

Genus

(different races of people into the classification of other species)

Quick genetic lesson

- DNA contains all the information in your cells that make you the way you are
 - This comes from genes (short segments of DNA)
 - This is inherited

Genes have multiple forms - called alleles

- Think about eye color: allele for brown eye, green, eye, ect.

Allele frequencies shift when populations evolve (adapt).

What is a species?

The biological species concept: a group of individuals that can interbreed and produce fertile offspring

- Cannot reproduce fertile offspring with members of other species
- Difficult to apply to fossil or organism with a

What's within a species?

- Gene pool:sum total of the alleles found in all individuals of a species
- Example
 - Lions and leopards are separate species and cannot interbreed
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- Gene flow: the spread of an allele throughout a species' gene pool
 - moves from one population to another

Reproductive isolation is needed to maintain a species

Reproductive isolation: prevention of fene flow between species

Two forms of reproductive barriers:

- Prefertilization: prevents fertilization from occurring
- Postfertilization: fertilization occurs, but the hybrid cannot reproduce

Pre-fertilization barriers

1. Spatial reproductive isolation -
2. Behavioral reproductive isolation -
3. Mechanical reproductive isolation -
4. Temporal reproductive isolation -
5. Gamete incompatibility

How to maintain reproductive isolation

Postfertilization barriers

- hybrid inviability
- hybrid sterility

How to make a new species

Three steps for a new species:

1. Isolation of gene pools of populations of species
2. Evolutionary changes in gene pools of populations
3. Evolution of reproductive isolation between populations

Speciation in action

Speciation: the evolution of one or more species from an ancestral form

Isolation and divergence of gene pools

May occur due to:

Migration

Example: island bird, reptile, plant, and insect species seem to descend with

Gradual or sudden speciation?

Why species differ

Genetic drift: change in allele frequency that occurs due to chance

Human populations travel

Small group colonize new areas

- prone to evolution by genetic drift

