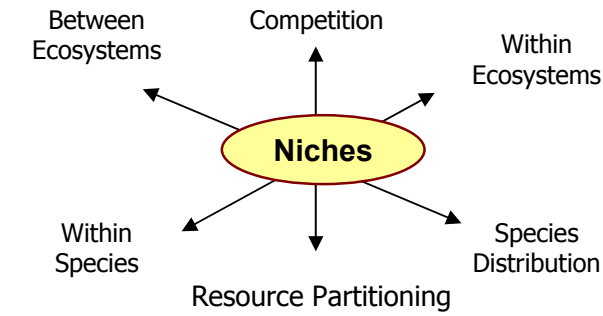


# Biological Diversity Concepts



**Natural Selection**  
Occurs when the environment 'selects' which individuals within a species will survive to reproduce

**Artificial Selection**  
Occurs when humans intervene using biotechnologies to select desirable characteristics

**Interdependence (Symbiosis)**

**Commensalism**  
One Benefits, the other is not affected

**Mutualism**  
Both benefit

**Parasitism**  
One benefits, the other is harmed

**Biotechnology**  
Cloning  
Artificial insemination  
In vitro fertilization  
Genetic engineering

**Classification System**

Kingdom  
Phylum  
Class  
Order  
Family  
Genus  
Species

**Asexual**  
Binary Fission  
Budding  
Spore Production

Vegetative Reproduction

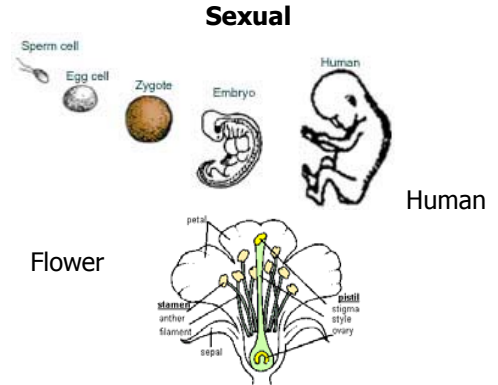
- cutting
- tuber
- runner
- sucker

**Variation**

**Heritable**  
Discrete  
Continuous

**Non-heritable**

**R E P R O D U C T I O N**



**Science of Genetics** is the study of how heritable characteristics are passed on from generation to generation.

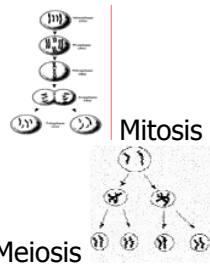
## DNA



Genetic Code

Chromosomes (46 in humans)

Genes (alleles)



**Traits**

**Dominant**  
Always show when they are present

**Recessive**  
Show only when dominant traits are not present

Incomplete dominance  
Offspring unlike either parent

Environmental Factors

## Impacts on Biodiversity

**Natural causes**  
(earthquakes, volcanoes, floods, fires, lack of food, disease, overspecialization)

<b>Endangered</b>
<b>Extinction</b> <b>COSIWIC</b> <b>Extirpation</b>
<b>Threatened</b>

**Human causes**  
(habitat destruction, introduced species, over-hunting, pollution)

## Biodiversity Conservation Strategies

- Protected Areas
- Restoration Programs
- Regulations and Restrictions
- Controlling Exotic Species
- Genetic Resources Conservation