ScienceCraft

Ecology

What is Ecology?



- Study of how living things on Earth interact with other living things and nonliving things in their environment
 - Studied at many levels
- **Environment**: Refers to the surroundings; area where living organisms live
- **Ecosystem**: Refers to the interaction between the environment and the living organisms
- **Abiotic**: Non-living physical and chemical elements in an ecosystem
- ✗ Biotic: Any living component that affects another organism



Biomes



- A biome is a **large community** of plants and animals that live in the same **major habitat** and share common characteristics
 - X Characterized by its vegetation, soil, climate, and wildlife
 - X Can be divided into more specific categories





Levels of Ecological Organization





Ecosystems are organized into several different levels

Organism/Individual/Species: Individual living thing

Can breed with others of the same species to produce fertile offspring

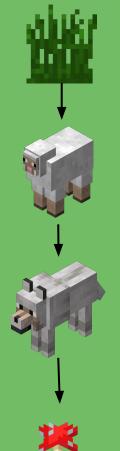
X Population: Group of organisms belonging to the same species that live in the same area and interact

Community: All of the populations of different species that live in the same area and interact

Ecosystem: Includes the living and nonliving aspects of an environment

Biosphere: Part of the planet with living organisms

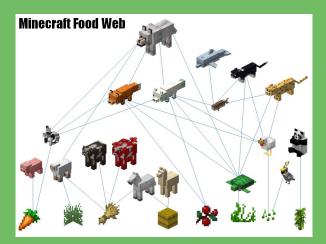
Food Chains

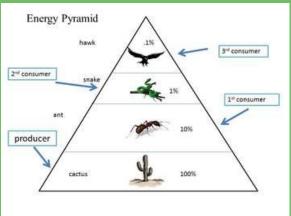


- A food chain describes how different organisms consume energy from one another
- Every ecosystem, or community of living things, has one or more food chains
- Most food chains start with organisms that make their own food
 - **X** Producers
- **X** Decomposers are often the final link in a food chain
 - X Fungi, worms, bacteria, etc.



Food Webs







- **X** Food chains **overlap** and **connect**
- Organisms in food webs are grouped into categories called trophic levels
 - X Producers (first trophic level)
 - X Consumers
 - Primary
 - Secondary
 - Tertiary
 - X Decomposers and detritivores (last trophic level)
 - X Ten percent energy law/rule



Build Challenge: Design an Ecosystem



- ✗ Use player heads to represent animals in your ecosystem
 - X Please avoid using actual mobs
 - You can get heads by killing the animal whose head you want
- Create whatever environment you want, real or fantasy
- Keep in mind that you need animals at every level of the food chain



Kahoot Time!