

Ecology Introduction

What is Ecology?

- "eco" means "house" (greek)
- Ecology is the study of interactions that take place between organisms and their environment.
- It explains how living organisms affect each other and the world they live in.

Habitat & Niche

- *Habitat* is the place a plant or animal lives
- *Niche* is an organism's total way of life



The Nonliving Environment

- **Abiotic factors**- the nonliving parts of an organism's environment.
- **Examples** include air currents, temperature, moisture, light, and soil.
- Abiotic factors **affect an organism's life.**



The Living Environment

- **Biotic factors**- all the living organisms that inhabit an environment.
- **All organisms depend on others directly or indirectly for food, shelter, reproduction, or protection.**



Abiotic or Biotic?

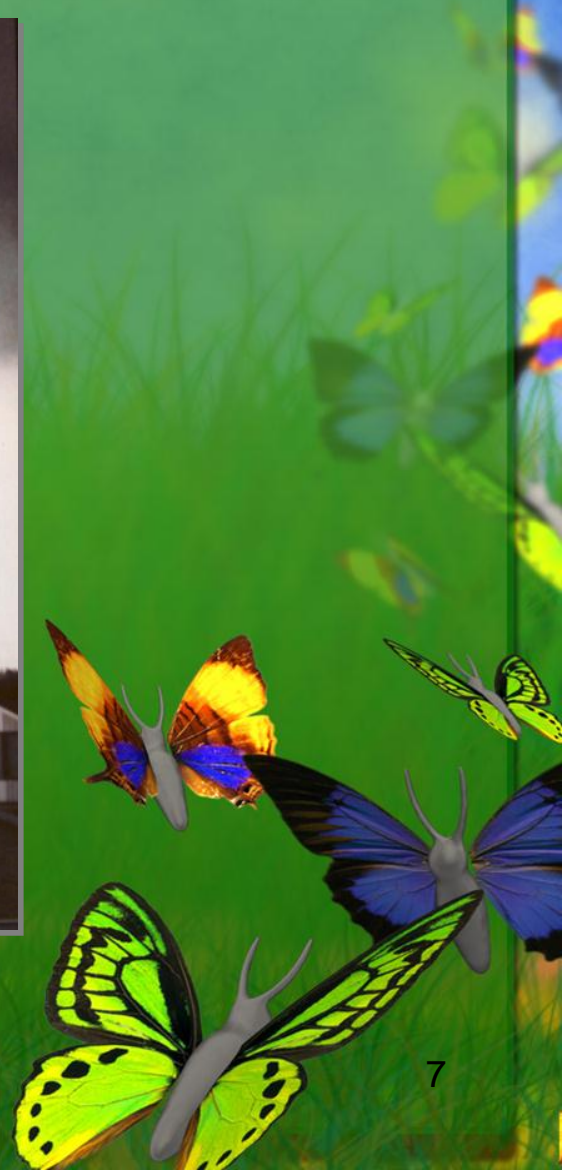


Biotic

Abiotic or Biotic?



Abiotic



Abiotic or Biotic?



Abiotic



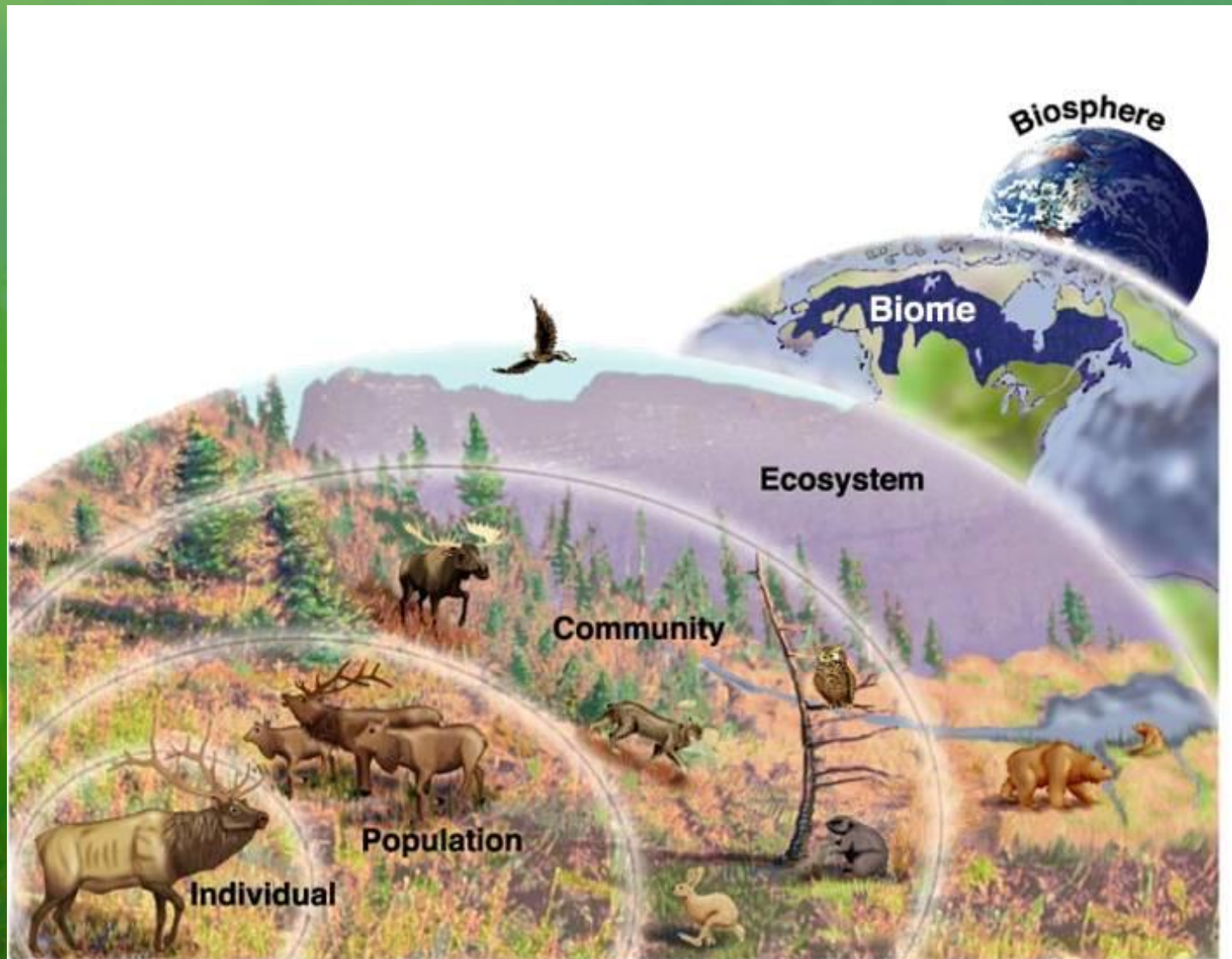
Abiotic or Biotic?



Biotic

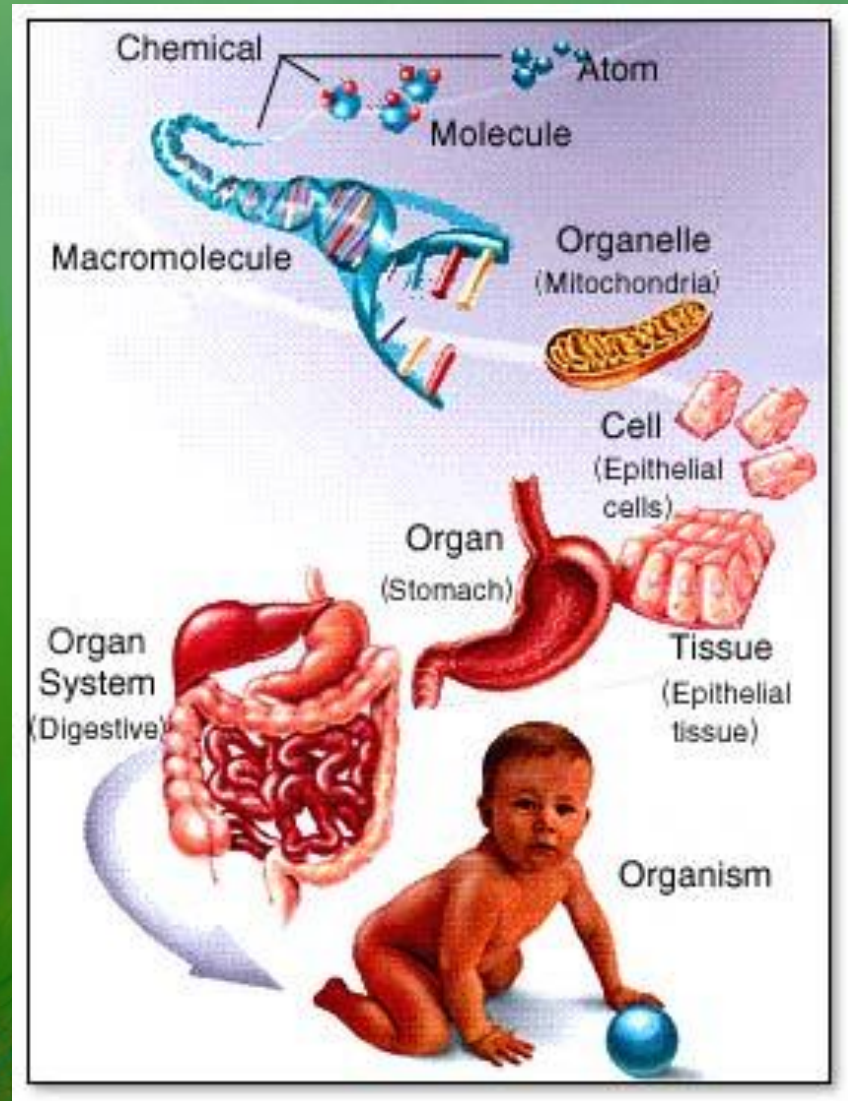


Levels of Organization



What are the Simplest Levels?

- Atom
- Molecule
- Organelle
- Cell
- Tissue
- Organ
- System



Levels of Organization

- Ecologists have organized the interactions an organism takes part in into different levels according to complexity.



1st Level of Organization

- **Organism:**
An individual living thing that is made of **cells**, **uses energy**, **reproduces**, **responds**, **grows**, and **adapts**.



2nd Level of Organization

- **Population:**
A group of organisms, all of the **same species**, which **interbreed** and live in the **same place at the same time.**



3rd Level of Organization

- **Biological Community:**
All the populations of different species that live in the same place at the same time.



4th Level of Organization

- **Ecosystem:**
Populations of plants and animals that interact with each other in a given area with the abiotic components of that area.
(terrestrial or aquatic)



5th Level of Organization

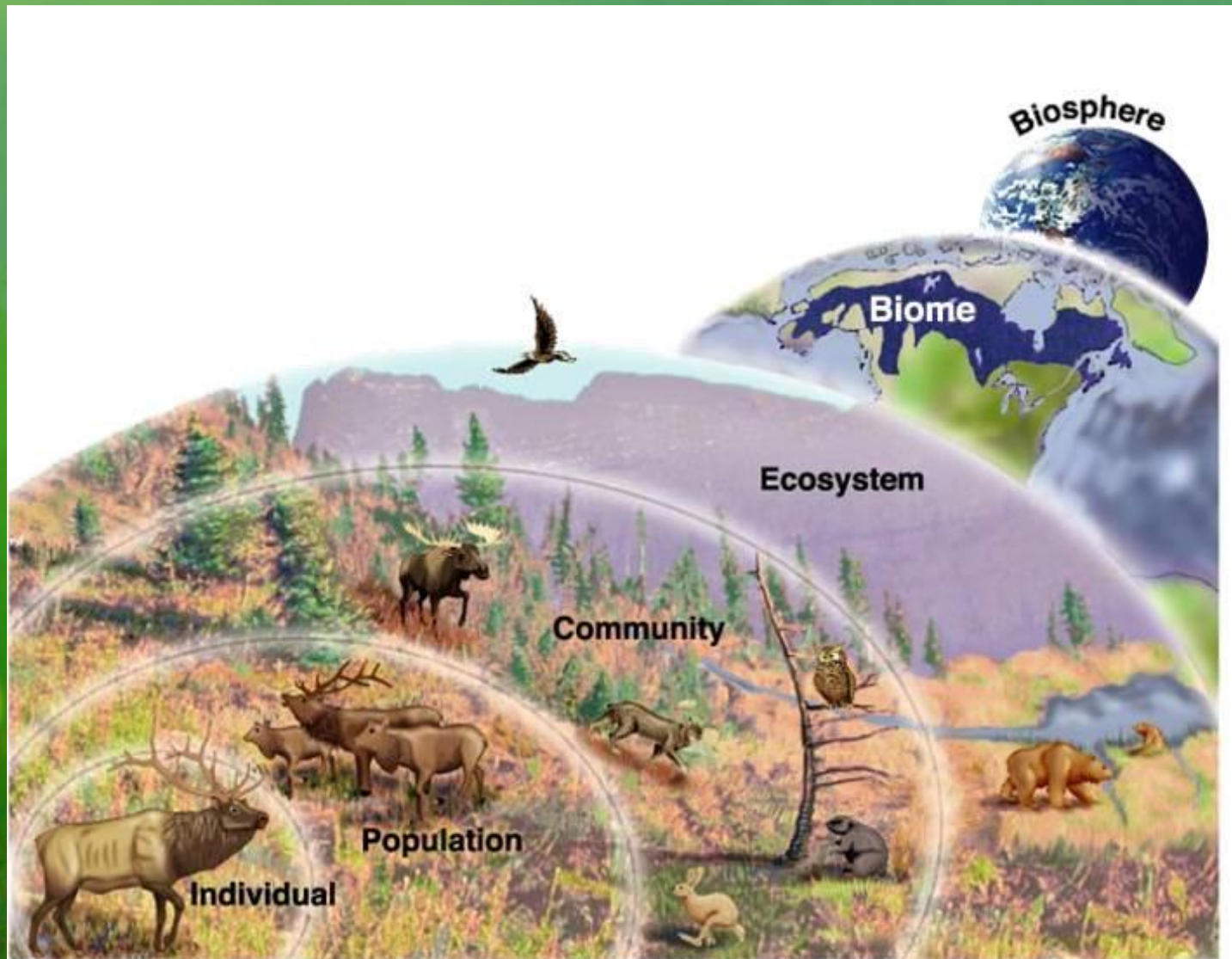
- **Biosphere:**
Life is found in
air, on land,
and in fresh
and salt water.



The **BIOSPHERE** is the
portion of Earth that
supports living things.



Levels of Organization



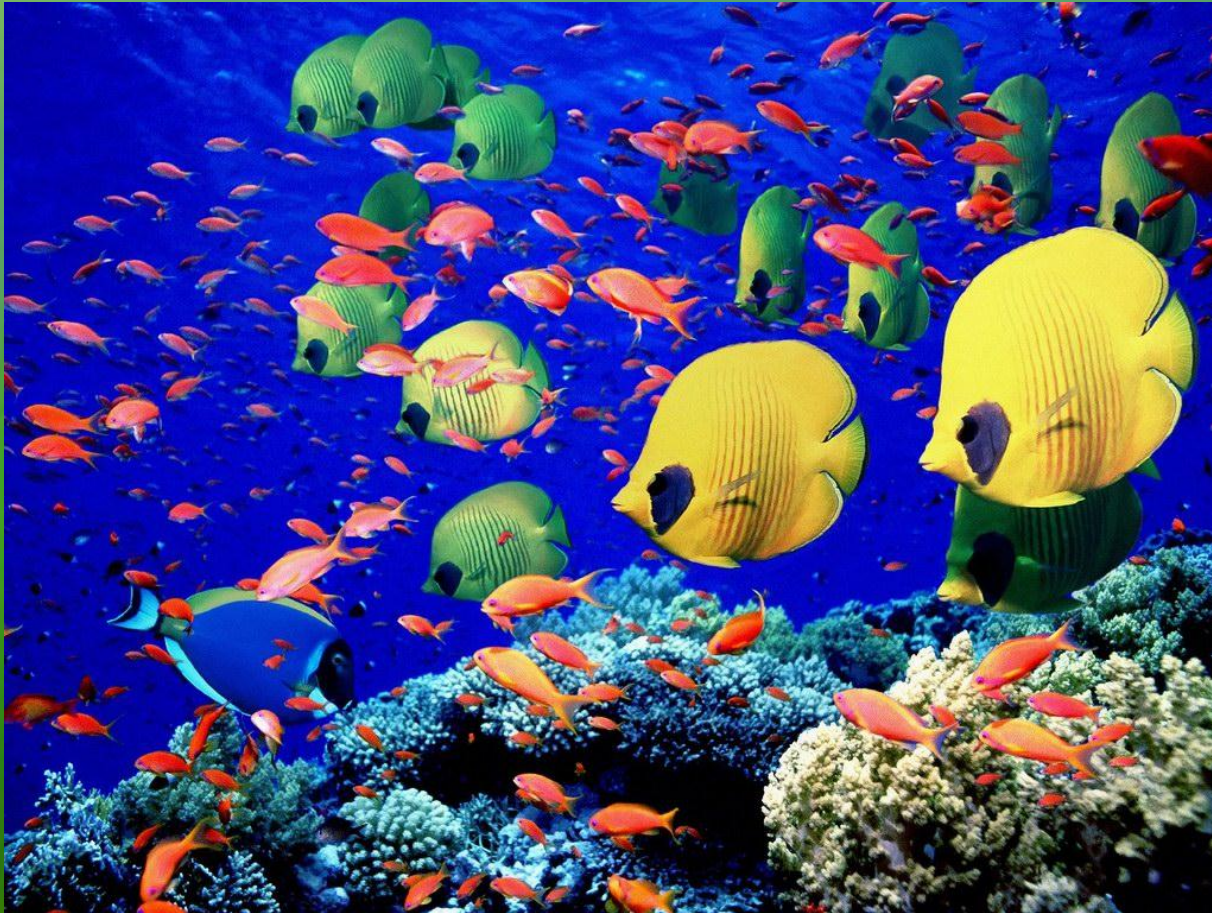
What level of organization?



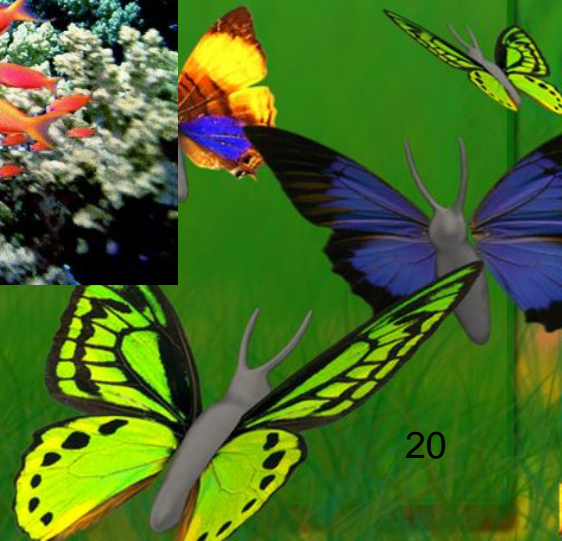
Organism



What level of Organization?



Community



What level of Organization?



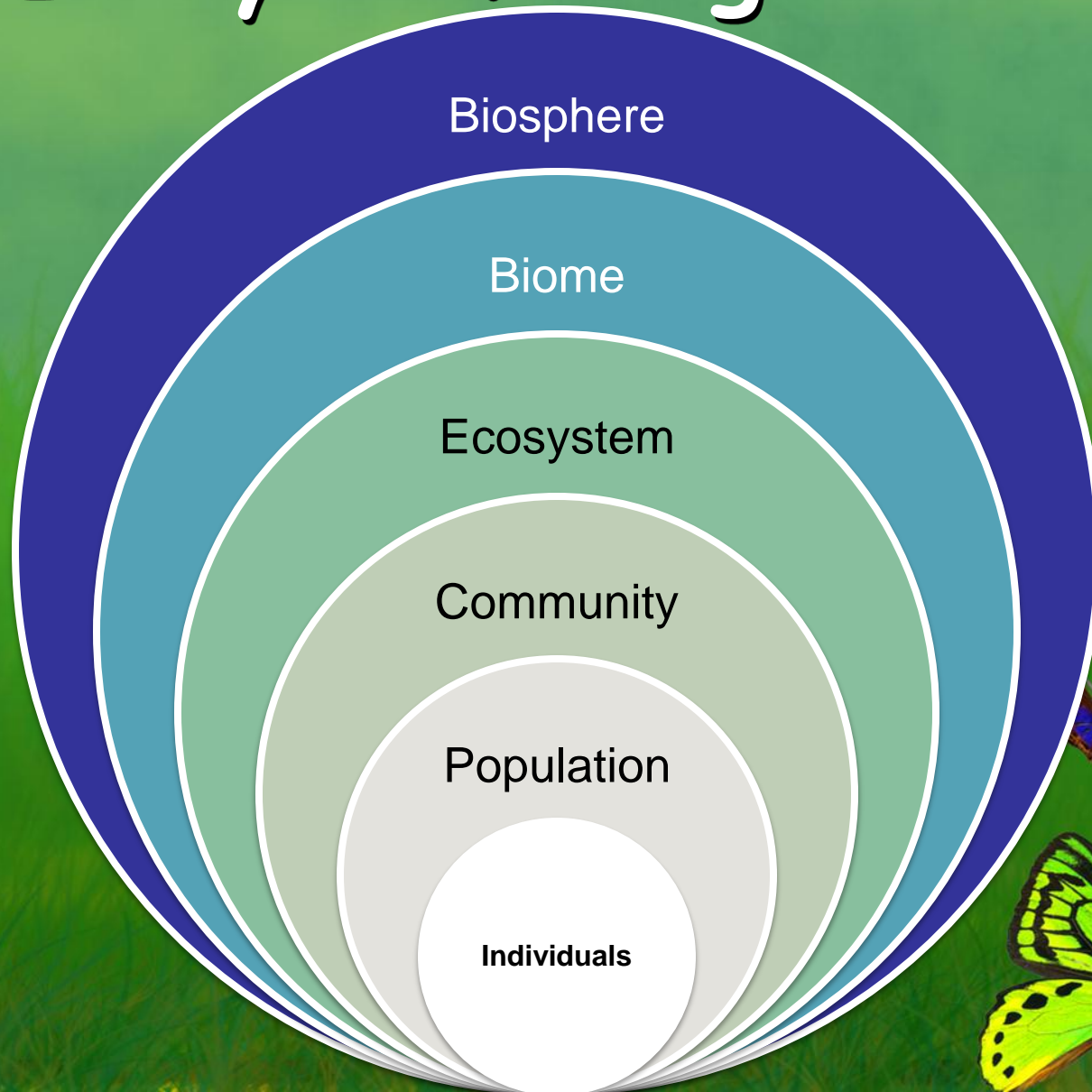
Population



Any Questions?



Ecosystem Organization



Nature Garden Observations

Abiotic Factors	How do they affect/interact with organisms?
Biotic Factors	How do they affect/interact with organisms?

- How many different items did you find? _____
- How many belong to the plant kingdom? _____
- How many belong to the animal kingdom? _____
- Summary: 3-5 sentences describing what you learned about the **STRUCTURE** of this ecosystem.

Resources

- www.biologyjunction.com