Unit 1: Ecology

Learning Targets:

- Distinguish between biotic and abiotic factors in the environment.
- Arrange the levels of organization within the biosphere.

What is the biosphere?

- The **biosphere** consists of all life on Earth and all parts of the Earth in which life exists.
  - Land
  - Water
  - Atmosphere
  - Every organism (bacteria → humans)
- Extends from about 8 kilometers above Earth's surface to as far as 11 kilometers below the surface of the ocean.

How is the biosphere organized?

- **Individual Organism**
  - A **species** is a group of similar organisms that can breed and produce fertile offspring.

How is the biosphere organized?

- **Population**
  - A **population** is a group of individuals that belong to the same species and live in the same area.

Bison herd

How is the biosphere organized?

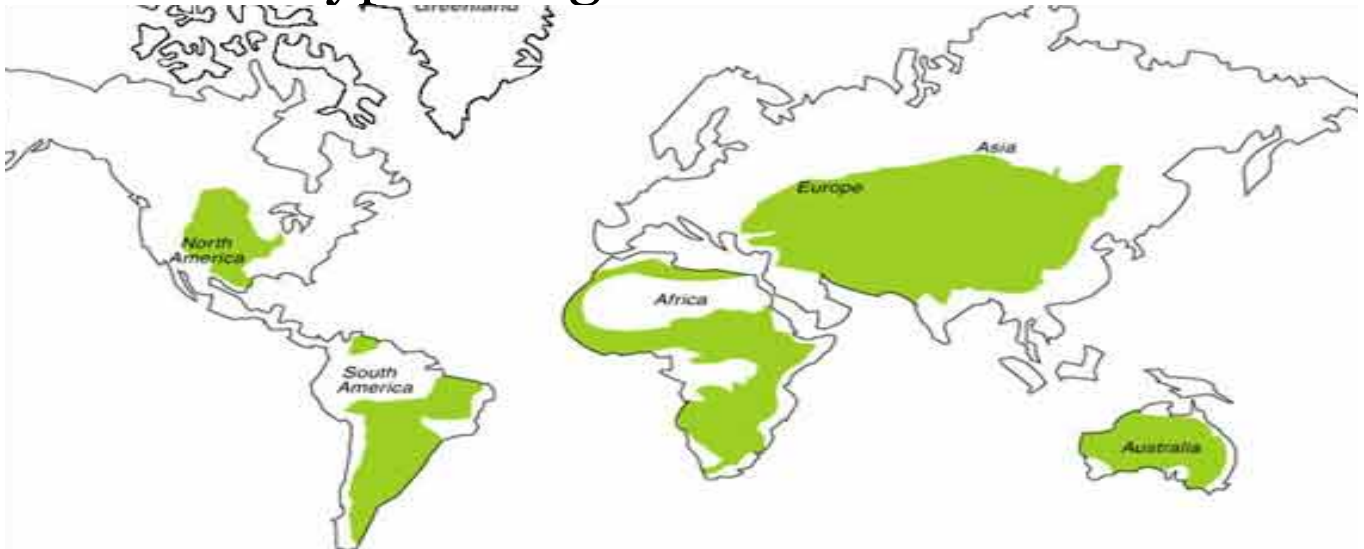
- **Community**
  - An assemblage of different populations that live together in a defined area is called a **community.**

How is the biosphere organized?

- **Ecosystem**
  - All the organisms that live in a place, together with their physical environment, is known as an **ecosystem**.

How is the biosphere organized?

- **Biome**
  - A **biome** is a group of ecosystems that share similar climates and typical organisms.



How is the biosphere organized?

- **Biosphere**
  - Our entire planet, with all its organisms and physical environments, is known as the **biosphere.**

What are biotic and abiotic factors?

- Ecologists use the word environment to refer to all conditions, or factors, surrounding an organism.
  - These factors include biotic and abiotic factors.

What are biotic and abiotic factors?

- **Biotic Factor**
  - Any living part of the environment with which an organism might interact.
    - animals
    - plants
    - mushrooms
    - bacteria

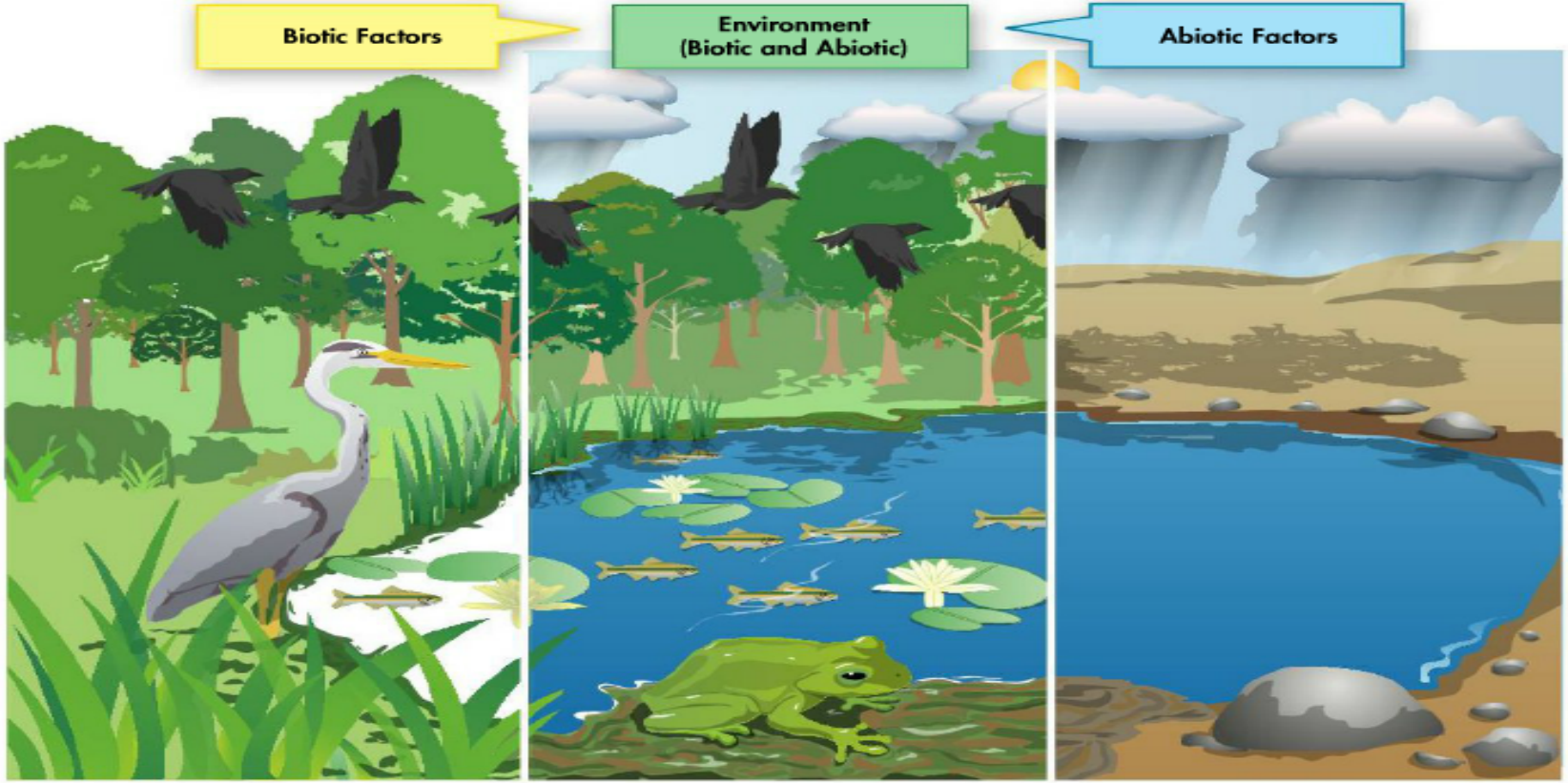
What are biotic and abiotic factors?

- **Abiotic Factor**
  - Any nonliving part of the environment.
    - sunlight
    - heat
    - precipitation
    - humidity
    - wind
    - water currents
    - soil type

Recall: What are the characteristics of life?

- **What are the 8 characteristics that all living things have in common?**
  - Based on a universal genetic code
  - Grow and Develop
  - Respond to their environment
  - Reproduce
  - Maintain a stable internal environment
  - Obtain and use materials and energy
  - Are made up of more or more cells
  - Taken as a group, living things evolve.

What are biotic and abiotic factors?



Observing Abiotic and Biotic Factors?

- **Make two tables in your notebook:**

  Site #1:

Abiotic Factors	Biotic Factors
1. 2. 3. 4. 5. 6. 7. 8.	1. 2. 3. 4. 5. 6. 7. 8.

Summarize

- Make sure you include answers to the following questions in your summary.
  - What are the six different major levels of organization, from smallest to largest, that ecologists commonly study?
  - How are biotic and abiotic factors related? What is the difference between them?

Reinforcing Biosphere Organization

Label each of the concentric circles below with the appropriate level of organization. Draw and color each level.

****Each person should select a different organism.**

****These will get taped into your notebook.**