



3.1

What Is Ecology?

Key Questions

- 🔑 **What is ecology?**
- 🔑 **What are biotic and abiotic factors?**
- 🔑 **What methods are used in ecological studies?**

Vocabulary

- biosphere • species • population • community • ecology • ecosystem • biome • biotic factor • abiotic factor

Taking Notes

Venn Diagram Make a Venn diagram that shows how the environment consists of biotic factors, abiotic factors, and some components that are truly a mixture of both. Use examples from the lesson.

THINK ABOUT IT Lewis Thomas, a twentieth-century science writer, was sufficiently inspired by astronauts' photographs of Earth to write: "Viewed from the distance of the moon, the astonishing thing about the earth ... is that it is alive." Sounds good. But what does it mean? Was Thomas reacting to how green Earth is? Was he talking about how you can see moving clouds from space? How is Earth, in a scientific sense, a "living planet"? And how do we study it?

Studying Our Living Planet

🔑 **What is ecology?**

When biologists want to talk about life on a global scale, they use the term *biosphere*. The **biosphere** consists of all life on Earth and all parts of the Earth in which life exists, including land, water, and the atmosphere. The biosphere contains every organism, from bacteria living underground to giant trees in rain forests, whales in polar seas, mold spores drifting through the air—and, of course, humans. The biosphere extends from about 8 kilometers above Earth's surface to as far as 11 kilometers below the surface of the ocean.



Individual Organism

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



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



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

