




# 4.1 Studying Ecology

## Key Concepts

-  Ecologists study life at many levels, from individual organisms to the entire biosphere.
-  Ecosystems include both biotic and abiotic factors.
-  Organisms depend on resources provided by their habitat for survival.

## SKILL BUILDER Vocabulary Preview

Define each vocabulary term in your own words. Then, write yourself a quick note on how you will remember each. One term has been done for you.

Term	Definition	How I Remember
Ecology		
Species		
Population		
Community		
Ecosystem		
Biosphere	All parts of planet Earth that host life, with all of its organisms and environments	I think of <i>bio</i> , which means “life” and <i>sphere</i> , which is a round object, such as Earth.
Biotic factor		



Term	Definition	How I Remember
Abiotic factor		
Habitat		
Resource		

## Levels of Ecological Organization

*For Questions 1 and 2, circle the letter of the correct answer.*

- The most basic level of ecological organization is a(n)
  - biosphere.
  - individual.
  - ecosystem.
  - population.
- The study of living and nonliving components of a system can best be described as a(n)
  - abiotic factor.
  - level hierarchy.
  - ecosystem ecology.
  - organism interaction.
- Describe how a species is commonly defined. Explain why the common definition for species may be problematic for some organisms, such as bacteria.
- What is community ecology? Give examples.


\_\_\_\_\_

Name

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## Biotic and Abiotic Factors

5.  **Organize Information** Fill in the T-chart with examples of abiotic and biotic factors in an ecosystem.

Abiotic Factors	Biotic Factors

6. Is a fallen, rotting tree considered an abiotic or biotic factor? Explain.

## Habitat

*For Questions 7 and 8, complete each statement by writing in the correct word.*

7. A cloud forest's soil, rocks, leaf litter, humidity, plant life, and seasonal pools of water are all part of a toad's \_\_\_\_\_.
8. Habitats provide organisms with the \_\_\_\_\_ they need to live, such as food, shelter, breeding sites, and mates.
9. Compare and contrast an ecosystem and a habitat.
10. Explain the importance of resources and suitable habitats to an organism.
11. Name at least two specific elements of the golden toad's cloud forest habitat.

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## SKILL BUILDER Organize Information

12. Fill in the table to explain how each concept applies to the golden toad.

Concept	The Golden Toad
Population	
Community	
Ecosystem	
Habitat	
Resource	

**Extension** On a separate sheet of paper, create another table like the one above. Use the same headings for the left column, but choose a different organism. Write the name of the organism at the top of the table and then complete the rest of the table as it applies to the organism you chose.

4.1



SELF-CHECK

*Answer the questions to test your knowledge of lesson concepts. You can check your work using the answers on the bottom of the page.*

13. Explain why organization is important to the study of ecology.
14. Why are dead or decaying organisms still considered important parts of an ecosystem?
15. What makes up an organism's habitat?

13. Ecologists use levels of organization to study how organisms interact with each other and their environment. 14. They are taken in and used as essential materials for living organisms. 15. The specific environment including biotic and abiotic elements, around an organism makes up its habitat.