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## Science Unit | Grades 9-12 | Lesson 5: Ecology of Marvel Cave

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### Lesson Description

Welcome to Marvel Cave at Silver Dollar City! In order to complete this lesson, you must go on the guided Marvel Cave tour. Believe it or not, Missouri is currently home to over 5,000 caves. Caves have extremely fascinating and unique ecosystems that include many biotic and abiotic factors. Both factors are needed to understand Ecology, which is the study of relationships among organisms and their environment. On your excursion you are to list the biotic and abiotic factors that you encounter. Be sure to ask your tour guide questions if you are unsure of what is in Marvel cave. Good luck and have fun!

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### Concepts

Ecology  
Ecosystems

Biotic  
Abiotic

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### Objectives

Students will:

- Be able to differentiate between biotic and abiotic factors.
- Give examples of creatures living in Marvel Cave.
- Understand the effect of geography and climate on plant and animal life inside the cave.
- Learn how human activity impacts the ecology of the cave.

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### Content Standards

**GLE: 4.B.1.b**

#### National Standards in Science

- **Standard 6:** Understands relationships among organisms and their physical environment.
  - Benchmark 2, Grades 6-8: Knows factors that affect the number and types of organisms in an ecosystem can support (e.g., available resources; abiotic factors such as quantity of light and water, range of temperatures, and soil



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- composition; disease; competition from other organisms within the ecosystem; predation).
- Benchmark 1, Grades 9-12: Knows how the interrelationships and interdependencies among organisms generate stable ecosystems that fluctuate around a state of rough equilibrium for hundreds or thousands of years.

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### Time Required

Up to 60 minutes

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### Materials

- Guided tour through Marvel Cave at Silver Dollar City
  - Student activity sheet from Silver Dollar City website & writing utensil
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### Procedures

1. Follow the tour guide as he/she tells the history of Marvel Cave and emphasizes points of interest throughout the tour.
  2. Fill out the student activity sheet that goes along with the tour.
  3. Turn in the activity sheet to the teacher for a participation or completion grade.
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### Closure

Review the key points of this lesson by discussing the following:

- What is the difference between abiotic and biotic factors?
  - Give an example of an abiotic and a biotic factor.
  - List 3 facts you learned about the cave.
  - Name one of the creatures that lives in Marvel Cave and why the cave environment is ideal for its survival.
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### Assessment/Independent Practice

Give an assignment or test of your choice.

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Name/Date: \_\_\_\_\_

## Ecology of Marvel Cave

Welcome to Marvel Cave at Silver Dollar City! In order to complete this lesson, you must go on the guided Marvel Cave tour. Believe it or not, Missouri is currently home to over 5,000 caves. Caves have extremely fascinating and unique ecosystems. Caves have many biotic and abiotic factors. Biotic factors consist of living organisms (plants and animals) and abiotic consists of nonliving factors (water, soil/rock, temperature, air, etc.). Both factors are needed to understand Ecology, which is the study of relationships among organisms and their environment. On your excursion you are to list the biotic and abiotic factors that you encounter. Be sure to ask your tour guide questions if you are unsure of what is in Marvel cave. Good luck and have fun!

Biotic	Abiotic