



# THE CASE OF THE MYSTERIOUS ROCKS

**SUBJECTS:** Science, Language Arts, and Art

**GRADES:** 4-5

**KERA GOALS:** Meets KERA goals 1, 2, 3, 4, 5 and 6

**ACADEMIC EXPECTATIONS:** Make sense of various messages in which they listen; organize information and use of classification rules and systems; write using appropriate forms for different audiences and purposes; make sense of and communicate ideas with the visual arts; understand scientific ways of thinking and working; understand conditions of nature; create works of art to make presentations; analyze their own and others' artistic products; show their abilities to become self-sufficient individuals; show their abilities to become responsible members of a family, work group, or community; use creative thinking skills to develop ideas or products; organize information to develop or change their understanding of a concept; connect knowledge and experiences from different subject areas; and expand their understanding of existing knowledge.

**DURATION:** One class period of 30-45 minutes

**GROUP SIZE:** One or two classes of 15-60 students

**SETTING:** Indoors or outside with tables or clipboards

**KEY VOCABULARY:** habitat, resource management, geologist, biologist, casings, environment

**ANTICIPATORY SET:** Look what's been found! Does anyone know what these are? Does anyone know where they came from?

**OBJECTIVES:** The students will be able to: 1) think critically and creatively to develop a habitat for their "animal;" 2) expand their existing knowledge and develop new knowledge pertaining to habitats.

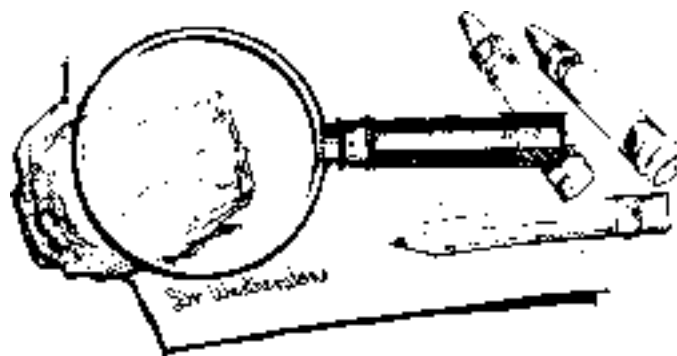
**MATERIALS:**

- ◆ Pencils
- ◆ Crayons
- ◆ Dr. Weatherstone's letter
- ◆ Rock data sheets
- ◆ "Mysterious rocks" (see instruction sheet)

**BACKGROUND:** A habitat is the place a plant or animal lives and grows. It is "home" to a specific species. All plants and animals have certain requirements to exist. The most important requirements include: food, clean water, clean air, shelter, and living space.

Science and Resource Management is a division of the Mammoth Cave National Park staff. Their job is to record information pertaining to our cultural and scientific past as well as speculating what the future holds. These scientists monitor and record changes in the habitats of plants and animals and the causes of these changes.

Habitats found within Mammoth Cave National Park include: the forest, ponds, areas near a pond, the Green River, fields and meadows, springs, sinking streams, sinkholes, caves, and the underground river systems inside the caves.



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# THE CASE OF THE MYSTERIOUS ROCKS

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## PROCEDURE:

1. The teacher explains how these mysterious “rocks” were found on the doorstep of the Science and Resource Management office at Mammoth Cave National Park. The scientists were not sure where they came from, but a note was found with the “rocks”. The author of the letter, Dr. Weatherstone, has asked for help from other scientists. The teacher reads the letter to further explain the situation.
2. The teacher asks the students what the word habitat means and writes their answers on the blackboard. Make certain the list includes the requirements for a habitat: food, clean air, clean water, shelter, and living space. The teacher asks the students what habitats are found in Mammoth Cave National Park. Habitats are also listed on the board. The teacher reminds the class that the habitats were listed in Dr. Weatherstone’s letter.
3. The teacher passes out a “rock” to each student. The students can work individually or in small groups. The students take a few minutes to examine their “rock.” They might want to roll it or shake it. The students should take a few minutes to think about what animal might live in their “rock”. The teacher asks the students to pick a home their animal may inhabit within Mammoth Cave National Park: the river, the cave, a field, the forest or any other area.
4. The teacher passes out crayons, pencils, and rock data sheets. The students are asked to draw a picture of their animal and its habitat – remember it can be real or imaginary! If the students create an imaginary animal, they have made a new discovery within the park. After they have drawn their animal in its habitat they can begin to write a short story describing how and where the animal lives. Don’t forget to include how the animal obtains food, clean water, clean air, finds shelter and living space.
5. When the students are finished they can share their pictures and stories with each other. The teacher may wish to collect them and put them together in a class book for the students to read and share later.

**CLOSURE:** Every living creature has basically the same requirements to survive. The animals from our “rocks” need the same things that plants need to grow and the same things that people need to live a healthy life. We find these things in the habitats we call home.

**EVALUATION:** The teacher is able to evaluate the student’s understanding of habitat and creativity by reviewing their story and drawing. Their knowledge is revealed by sharing their stories with their classmates.

## EXTENSIONS:

1. This same activity could be done with “seeds” and the students would then develop a habitat for plants.
2. The students could write a short story on the important things they need to survive in their own habitat.
3. The students could pick another habitat, such as a desert, the ice cap, or the moon and describe how their rock animal would be able to survive there.

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# ROCK DATA SHEET

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Name \_\_\_\_\_

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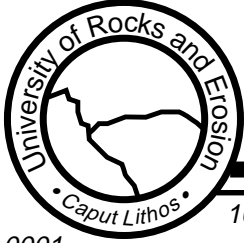
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School Year

Mammoth Cave National Park  
Science and Resource Management Office  
Mammoth Cave, Kentucky 42259

Dear Mammoth Cave National Park Rangers:

I have been very excited about my research project in the park. Our agreement was that I could obtain a permit to collect and study unusual rocks found within Mammoth Cave National Park. After I had studied them, all of my samples had to be returned to the Science and Resource Management Division of the park, where they could be put in a museum display.

Well, last night a very strange thing happened – I had my rock samples sitting in my collection basket. I was relaxing and reading Journey to the Center of the Earth when I heard a loud crack. I jumped up only to discover a strange little creature that took off under my bed. On my way to investigate something in the basket caught my eye. One of the rocks – or as I had thought, rocks – had cracked open. The pieces were everywhere. That little creature had come from the broken casing.

I am sorry to inform you that I am giving up my research for the time being. I am a geologist who studies rocks; NOT a biologist who studies living things. I do hope you are able to find someone to help you with these samples. Please remember that I collected them from all over the park; in the forest, near the pond, in the pond, from the Green River, from some of the fields and meadows, in a spring, from a sinking stream, from a sinkhole, in the cave, and even from the underground river inside the cave. I had notes on each rock, but that creature gobbled down my notebook and all my notes.

I hope to see your results. I will contact you soon about other possible work. But for now, I need to rest after last night's ordeal.

*B. G. Weatherstone*

Dr. Beauregard G. Weatherstone  
University of Rocks and Erosion

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# MAKING THE MYSTERIOUS ROCKS

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P.S. I would check bunkhouse number two before allowing anyone else to stay in it.

**MATERIALS:**

- ◆ Plastic Easter eggs or Leggs eggs
- ◆ Masking tape
- ◆ White glue
- ◆ Brown paper towels
  
- ◆ Popcorn kernels
- ◆ Rice
- ◆ Screws
- ◆ Marbles
- ◆ Macaroni
- ◆ Nuts
- ◆ Washers
- ◆ Paper clips

- ◆ Other small items

**PROCEDURE:**

1. Fill each egg with a different item or combination of items from the list at left.
2. Seal each egg with masking tape.
3. Mix white glue with a little water to dilute.
4. Tear paper towels into small pieces. Dip the paper into the glue and water mixture and cover the eggs, just like papier mâché. Completely coat the egg with paper. Set the eggs on a plastic bag overnight to dry.
5. You can paint the new rocks if you desire.

