Iowa Science Teachers Journal

Volume 19 | Number 2 Article 8

1982

Let Me Out

Cherin Lee
University of Northern Iowa

LET ME OUT

Cherin Lee
Department of Biology
University of Northern Iowa
Cedar Falls, Iowa 50614

Why are walls, floors, and ceilings so inviting? What is the lure of a classroom when compared to the lure of being outside? It's quite surprising that more science students and teachers aren't clamoring "Let me Out!"

Science educators are frequently looking for activities to take them out of classroom settings. Such an activity evolved during a seminar at UNI called Innovative Biology Teaching. The challenge was to develop a teaching technique for a single concept using the outdoors at the particular time of the assignment. This was late October and early November, not a favorite time for many teachers to be pursuing outdoor activities. Nevertheless, there are many things that can be done in the outdoors during late Fall. The following is an example:

You are a Martian whose space ship has malfunctioned, landing you here instead of in Outer Mongolia. You have been briefed in Russian and in the biology of Mongolia. However, you know nothing about where you are now.

Your mission is to "explore life forms." Conduct a search and find a living thing. Observe it. Observe its surroundings.

What will you write in your space ship log? *Remember* — you are on an exploratory mission, not a collecting one!

When briefing students on the activity supply them with blank sheets of paper with a heading as indicated below, or have them supply their own paper.

LOG	Date	Time
example:		
LOG	**10, November, 1980**	**9:50 A.M.**

Versatility always leads to greater use of an activity. Exploring life forms is definitely versatile. The intent of the activity and the concept are left entirely to the instructor. At the early elementary levels students might delve into what is living and what is not. Older elementary students might be more interested in comparing the living things that each has discovered. This age and students in junior high might use their imaginations and pretend they actually are Martians, thus seeing a totally unfamiliar place. (Making the familiar strange can lead to some tremendous discoveries!) Considerations of population, habitat, niche, similarity and differences, classification, etc. could be introduced to high school students with this activity.

Teacher-written tests aren't always the best form of evaluation, yet they are frequently used because "nothing better exists." This activity would serve well as a culminating activity or an evaluative measure.

Applicable during any season of the year, employing the activity in late fall, winter, or early spring might present more of a challenge. At least it would be an eye opener to the fact that life in Iowa doesn't cease when the leaves fall from the trees!

As important to the "search" as the action is the follow-up. Sharing logs, whether large or small group or some other instructor-devised method, should spark interesting interactions between pretend Martians. In our seminar undergraduates, graduates and instructor donned coats and gloves and trekked outside one November evening to see what we could find. Logs revealed some interesting things. Some life forms were sedentary, with main parts that separated into many parts. These parts were rather stiff and had small bulges at their ends. (Trees with terminal buds.) Some life forms were very mobile with hard shells and light devices. They had a very intricate signaling and movement pattern with a well developed communications system. They also had one individual respected by everyone, whom they moved aside for when they passed. (Can you guess? Cars on the highway with stop lights and an ambulance that went by!)

***

Demonstrating Density

The concept of density is difficult for the average seventh or eighth-grade student to understand. Most of the current physical science textbooks, however, include it as one of the characteristic properties used to distinguish between various materials. The following demonstration has proven useful in promoting inquiry discussions when the concept of density is introduced.

Fill a large, clear, glass container, such as a 100 ml cylinder, approximately one-third full with a saturated salt solution. Laboratory grade NaCl will keep the solution clear. Place a golf ball in the salt solution and then carefully pour fresh water down the side of the container until it is approximately two-thirds full. The result will be a golf ball, which has a greater density than fresh water but is less dense than salt water, floating in the middle of a clear liquid.

If the demonstration is visible as the students come into the classroom, the result is usually a high degree of interest and curiosity. Spin-off activities, such as comparing various brands of golf balls in standardized solutions or investigating what causes the schlieren lines which result when the golf ball is pushed down with a glass rod and then released, may take several days.

DTS Newsletter
Feb. 1982