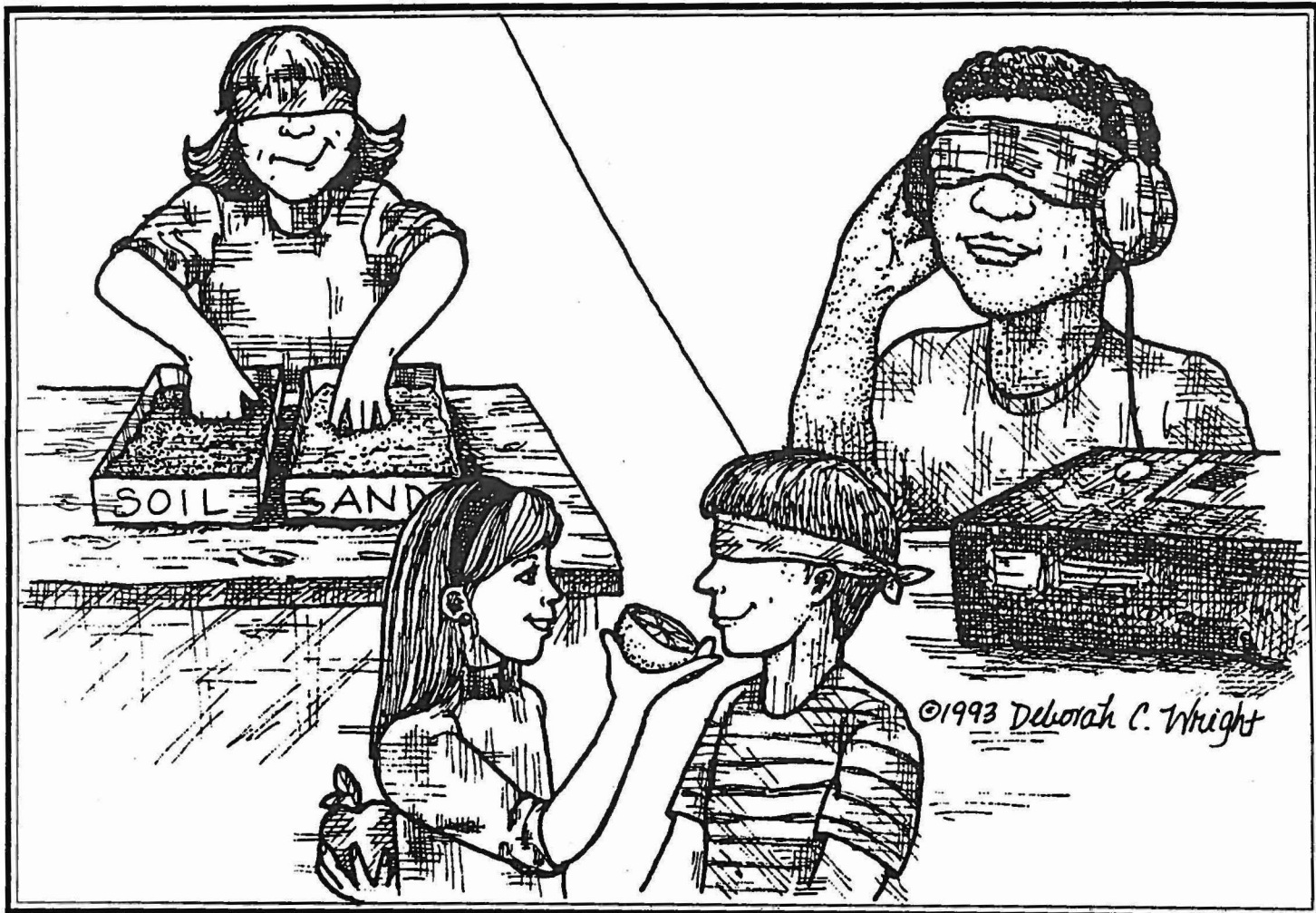


## #8 - *Lights Out!*



### **Focus Question:**

How do our senses allow us to adapt to the world around us?

### **Objective:**

Students will simulate lightless environments to experience the type of sensory reliance that blind or sightless organisms utilize in cave ecosystems.

### **Suggested Grade Level:**

Grades 4-6

### **Materials Needed:**

- a set of blindfolds for class members
- 6-10 aluminum roasting pans
- a supply of the following: string, marbles, jacks, apples, oranges, lemons, paper clips, rubber bands, ticking clock (not digital), pieces of construction paper, pieces of classroom chalk
- a supply of sand
- student notebooks

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## Overview:

Caverns are sunless worlds where inhabitants have developed special adaptations to survive in this world. It is now believed that an individual species may take as many as 1000 generations to adapt to the dark. Blind crayfish and salamanders, and other sightless creatures rely on senses other than sight to gather information.

## Procedure:

*Note to Instructor:* Be sure not to reveal the contents of the pans to the the students!

- 1) Place all or some of the items from the list into the pans.
- 2) Pour an equal amount of sand into each of the pans. Use enough to completely cover the objects in the pans.
- 3) Select a student and blindfold him or her.
- 4) Select a pan of items.
- 5) Tell the student he/she has 2 minutes to sift through the sand. Have the student select one item at a time, describe it, and tell which of the three senses (hearing, smelling, or touch) helped the most in clearly identifying the object.
- 6) Select other students and follow the same procedure.
- 7) Proceed through at least three pans.
- 8) Compare experiences.

## Conclusion:

The cave is unfamiliar, as we may imagine, though life has adapted to this alien landscape. All of the animals now found in caves at one time came from the sunlit world above. Adaptations and survival requirements have forged new and unique animal species.