

BCPS Field Trip Request ID # 8830

Trip Request By Kendra Spencer - OES
Trip Name Squire Boone Caverns
Trip Date 11-02-2018 *-changed to 11/8/18*
Approx. Pick-up Time 9:00AM
Return Date 11-02-2018 *- changed to 11/8/18*
Approx. Return Time 2:30PM
Class/Group Overdale 2nd Grade
Student Count 65
Chaperone Count 10
Number of Vans/Buses 2
Common Carrier Miller Transportation
Cost to Students 20
How will you pay for students who cannot afford the fee?
It is built into the price (\$20).

Place of Departure

Name: Overdale Elementary School
Address: 651 Overdale Dr
City: Louisville
State: KY

Destination

Name: Squire Boone Caverns
Address: 100 Squire Boone Rd. SW
City: Mauckport
State: IN

Lesson Plans

Overdale 2nd Grade Squire Boone Caverns Field Trip
Friday, November 2nd, 2018

Standards:

2-LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats.
W.2.7- Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations).
RIT.2.5- Know and use various text features (e.g., captions, bold print, subheadings, glossaries, indexes, electronic menus, icons) to locate key facts or information in a text efficiently

Students will be able to explain the three zones of a cavern system.

Students will be able to describe the different categories of cavern life and identify the types of animals for each category.

Students will be able to explain how the categories directly relate to the three zones of a cavern system.

What are the three zones of a cavern system?

Caverns provide very unique living conditions for many plants and animals. The most prominent of these conditions is the darkness. This plays an important role in how animals adapt to a cave environment. If a cavern system is large enough, it can be divided into three zones. Each zone is based on the level of light it receives. The first zone is called the Entrance Zone and is the area at the cavern opening. The second zone is the Twilight Zone. This area starts at the end of the entrance zone and continues on until all light is gone, leading to the third zone: the Dark Zone. The Dark Zone is the rest of the cavern that never sees light.

Troglofauna – The Cave-Dwelling Animals

Troglofauna are small, cave-dwelling animals that have adapted to their dark surroundings. Some troglofauna live permanently underground and cannot survive outside of the cavern environment, while others are less-permanent residents. These cave-dwellers have adapted to the unique challenges of a cavern environment. They often have a heightened sense of hearing, touch, and smell, while their under-used senses, such as sight, tend to be lost.

Troglofauna are divided into three categories: troglobites, troglaphiles, and troglaxenes.

- Troglobites (‐cave life‐) – animals that live entirely in the dark parts of caves. These animals have adapted to life in total darkness and may not have eyes or skin pigmentation. They cannot survive outside of a cave environment. **CRAZY FACT:** These creatures are not albino. Albinism is a congenital disorder. This is a common mistake. **EXAMPLES:** Species of cave fish, cave crickets, shrimp, crayfish, and insects.
- Troglaphiles (‐cave lover‐) – cave-dwelling animals that may complete their life cycles within the cave, but they can also survive in above ground habitats. **CRAZY FACT:** They actually prefer cave life and often only leave to find food. **EXAMPLES:** Beetles, worms, crickets, and salamanders
- Troglaxenes (‐cave guest‐) – animals that come and go from the cave, using it primarily as shelter. **CRAZY FACT:** Most troglaxenes live in caves during certain periods in their life cycles, such as nesting or hibernation. **EXAMPLES:** Bats, bears, mice, cave swallows, raccoons, and humans.

Big Ideas:

- Cavern systems are divided into three zones: the Entrance Zone, the Twilight Zone, and the Dark Zone.
- The zone is determined by the amount of light within.
- Cave-dwelling animals are called troglofauna. There are three types of troglofauna: troglobites, troglaphiles, and troglaxenes.
- Troglobite means ‐cave life‐ and these animals only live in caves. They usually live in the Dark Zone.
- Troglaphile means ‐cave lover‐ and these animals choose to live in the cave, although they can also live above ground. They usually live in the Twilight Zone.
- Troglaxene means ‐cave guest‐ and these animals only use the cave for shelter; they cannot live their whole lives within a cave. They usually live in the Entrance Zone, but some of them (like bats) can live in the Twilight Zone.

Experiment:

Troglobite for a Day: Getting a Sense of Life in the Dark

Materials:

- Variety of objects for touch experiment (feathers, water, sand, etc.) (5 objects minimum)
- Variety of foods for taste experiment (pieces of fruit, bread, candy, etc.) (5 foods minimum)
- Variety of containers of strong-smelling foods (garlic, onion, coffee, etc.) (5 smells minimum)

- Student worksheet, included (one per group)
- Blindfolds (one per group)

Procedure:

1. Begin by reviewing the three zones of a cavern and the three categories of troglafauna. In particular, emphasize what life would be like in the dark zone and how troglobites have adapted.
2. Divide students into groups of four (one for each sense).
3. Share with students that they are going to be troglobites for this activity and that, for each part of the experiment, one member of each group will be blindfolded. Either assign each member of the group a sensory experiment or let them choose. Give each group a copy of the worksheet and have them fill in the names of their group members. Distribute blindfolds to each group at this time.
4. Blindfold the student in each group who will do the touch experiment. Allow the student to touch each item. The student should describe the sensation to their group and make a guess as to what they are touching. The group members should record the student's response as well as what the item actually is.
5. For the hearing experiment, blindfold the students who are assigned this experiment. You can then either have each group make normal, everyday sounds or you can do it for the whole class (closing the door, crumpling paper, typing on a keyboard, etc.). Blindfolded students should guess the sound and, as they did with the touch experiment, students in the group should record the responses and the real sound.
6. For the taste experiment, allow the blindfolded students to taste five different foods and attempt to identify them. If possible, put the food on toothpicks or spoons so they student won't be able to identify them by touching. Record responses.
7. For the smell experiment, allow blindfolded students to smell the five strong-smelling foods and attempt to identify them. Record responses.
8. Once all four sensory experiments have been completed, have a large-group discussion about heightened senses and how troglobites survive in the dark.

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