



## Bats & Caves!

### Teacher Overview of the Geo|Venture for Grades K-4

Cave of the Winds Geo|Venture designed for grades K-4 details two main subjects: the science of caves and the world of bats.

Both subjects are adapted to the attention and challenge level of your group. Whether you have an especially perceptive group of first graders or a right-on-track group of fourth graders, we will make our presentation meet their ability level. Our goal is to see students leave with a new understanding and appreciation of caves and cave science as well as a new love of bats.

In particular, the cave segment deals with basic geology: the science of limestone and calcium, the formation of caves, and how water and rock work together to form the amazing underground world of Cave of the Winds. We'll view stalactites, stalagmites, flowstone, popcorn, ribbons and more. The cave sections we take this age group through are easy to negotiate.

We'll also use hand-held lanterns (held by adults or the kids if appropriate) to take the group down a darkened passage off the main tour route. This is a thrilling and intriguing short segment that recreates what it was like for early cavers. A plus is that we occasionally see bats in this chamber. Although some of your group might at first seem hesitant to go on this short segment, we always have smiles and big stories when it's over.

During the cave tour, we'll also give a little history about how the caves were first discovered by two young brothers from Manitou Springs. Older students will also have a short segment at a small geology lab placed inside the cave. At this lab station, we'll show how moving water and limestone react together.

Throughout the cave tour, students will see and feel various comparisons: light/dark/shadow, changing smells and air temperature, and different colorations of rocks. The entire cave experience is a rich experience for all the senses.

The bat segment, which is held in a special bat room with cave murals, low chairs and bat props, goes into detail on bat life. We talk about why these gentle mammals are so important to the earth and various ecosystems. We explain where they live, what they eat and more. Just as important, we talk about what bats aren't—we dispel the myths and misinformation that plague the reputation of these wonderful animals. Depending on the group, our guides might also read a bat story, use a stuff-animal bat to explain a point or show a short bat video.

There is also time for souvenir shopping in our gift shop. If they want to purchase something, students are able to find fun trinkets for about \$5 or less.

The Geo|Venture can accommodate up to 75 people total, which we split into groups of no more than 25. It will take approximately 2 hours. The cave is 54 degrees Fahrenheit year-round, which will feel warm in the winter and cool in the early fall and spring. Students, teachers and chaperones might need coats.

TAKE A  
GEO|VENTURE



# CAVE OF THE WINDS

The surroundings at Cave of the Winds are easily adapted to a number of Colorado Model Content Standards for Science, including:

**Standard 1:**

Grades K-2: Benchmarks 1, 2 and 4.

Grades 3-5: Benchmark 1.

**Standard 2:**

Grades K-2: Benchmarks 1 and 2.

Grades 3-5: Benchmarks 1, 2, 3 and 4.

**Standard 3:**

Grades K-2: Benchmark 1, 3, 4 and 5.

Grades 3-5: Benchmark 1, 2 and 6.

**Standard 4:**

Grades K-2: Benchmarks 1, 2, 4 and 5.

Grades 3-5: Benchmarks 1, 2, 3, 5, 6 and 8.

**Activities that we provide to you via Web site download, and the specific benchmarks they cover, are:**

- 1. Bats & Birds. Satisfies Colorado Model Content Standards for Science:**  
**K-2, Standard 3, Benchmark 1.** An organism (plant, animal) is a living thing that has physical characteristics that help it to survive.  
**Grades 3-5, Standard 3, Benchmark 1.** Each plant or animal has different structures and behaviors that serve different functions in growth, survival, and reproduction.
- 2. All Caves the Same? Satisfies Colorado Model Content Standards for Science:**  
**Grades K-2, Standard 2, Benchmark 1.** Solids and liquids (matter) can be identified, compared, sorted/classified by their physical properties (for example: size, shape, texture, flexibility, temperature, color and patterns).  
**Grades 3-5, Standard 2, Benchmark 2.** Measurable physical properties can be compared before and after effecting a change to verify a change has occurred and used to predict its outcome in similar circumstances.
- 3. Create a Cave. Satisfies Colorado Model Content Standards for Science:**  
**Grades K-2, Standard 5, Benchmark 1.** Basic observable patterns and changes in the world can help to predict future events based on those patterns.  
**Grades 3-5, Standard 4, Benchmark 2.** Natural processes change Earth's surface (for example: weathering, erosion, mountain building, volcanic activity, earthquakes and floods).
- 4. Don't Touch. Satisfies Colorado Model Content Standards for Science:**  
**Grades 3-5, Standard 1, Benchmark 1.** Design, plan and conduct a variety of simple investigations (for example: formulate a testable question, state a hypothesis, make systematic observations, develop and communicate logical conclusions based on evidence).
- 5. Dissolving Limestone with Acid. Satisfies Colorado Model Content Standard for Science:**  
**Grades 3-5, Standard 2, Benchmark 2.** Measurable physical properties can be compared before and after effecting a change has occurred and used to predict its outcome in similar circumstances.

TAKE A  
GEO|VENTURE