



Caving 101

Teacher Overview of the Geo|Venture for Grades 9-12

Cave of the Winds Geo|Venture for grades 9—12 (and other youth groups) is a hands-on introduction into caving. The guide will cater and adapt the site visit to the challenge level of your group. So, whether you have an especially perceptive and curious group of freshmen, a right-on-track group of seniors or a group that is a combination of these, we will make our exploration meet their ability level. Our goal is to see students excited about caves and leave with a new appreciation of cave science.

Once at the entrance to the tunnels leading into the historic Manitou Grand Caverns, the guide will stop and regroup. From here on, students need use of their flashlights as there is no other light source for the remainder of the time. The tour proceeds down Windy Passage, where guides will often have groups crawl into side areas to explore.

The tour then moves into the Manitou Grand Caverns where a number of gritty, hands-on caving experiences take place. In one segment, students are first led by a guide into a series of low, tight tunnels, only one of which leads up and out to a ledge above the initial entrance. The other tunnels dead end. The students are then asked to do a group activity where they enter the tunnels again, but this time without a guide or use of their flashlights. They must rely on both sense memory and teamwork to find their way out. (There is no danger of anyone getting lost—the caves either dead ends, or either end at the entrance or the end, which can be seen from the entrance.)

The Manitou Grand Caverns also lead to an area the public is not allowed to enter, but which the teens experience. It is pristine, untouched and a true caving jewel. **Access to this area is based on student behavior.**

This Geo|Venture can accommodate up to 40 people total. It will take approximately 2½ 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 should wear warm layers that can get dirty.

It is imperative that teachers prepare students for a few things:

1. Students have to remember to bring the required flashlights. This tour takes place entirely in dark sections of the cave.
2. The areas we take this group are quite pristine, and we can only proceed if we're assured that the students are watching out for both each other and the protection of the cave formations. For both the safety of the students and the preservation of the cave, the tour length is dependant on student behavior.

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CAVE OF THE WINDS

The Cave of the Winds environment is easily adapted to cover a number of benchmarks in the Colorado Model Content Standards for Science, including:

Standard 1:

Grades 9-12: Benchmarks 1, 2, 3, 4, 5 and 6.

Standard 2:

Grades 9-12: Benchmarks 1, 3 and 4.

Standard 3:

Grades 9-12: Benchmarks 2, 6, 7 and 14.

Standard 4:

Grades 9-12: Benchmarks 1, 2, 3, 4, 5, 6, 7, 8 and 12.

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

- 1. Not Just Your Average Decoration. Satisfies Colorado Model Content Standard for Science:**
Grades 9-12, Standard 4, Benchmark 8. Energy transferred within the atmosphere influences weather (for example: the role of conduction, radiation, convection, and heat of condensation in clouds, precipitation, winds, storms).
- 2. Perpetually in the Dark. Mapping Caves: Satisfies Colorado Model Content Standard for Science:**
Grades 9-12, Standard 1, Benchmark 2. Select and use appropriate technologies to gather, process, and analyze data and to report information related to an investigation.
Grades 9-12, Standard 5, Benchmark 3. Graphs, equations or other models are used to analyze systems involving change and constancy (for example: comparing the geologic time scale to shorter time frame, exponential growth, a mathematical expression for gas behavior, constructing a closed ecosystem such as an aquarium).
- 3. It's Not Your Average Friday Night. Relative and Absolute Dating of Geologic Materials. Satisfies Colorado Model Content Standard for Science:**
Grades 9-12, Standard 4, Benchmark 6. Evidence is used (for example: fossils, rock layers, ice cores, radiometric dating) to investigate how Earth has changed or remained constant over short and long periods of time (for example: Mount St. Helen's eruption, Pangaea, and geologic time).
- 4. Global Building Blocks: Rocks and Mineral Identification. Satisfies Colorado Model Content Standard for Science:**
Grades 9-12, Standard 4, Benchmark 1. The earth's interior has a composition and a structure.
- 5. Internal Structure of the Earth and Pangean Geography. Satisfies Colorado Model Content Standard for Science:**
Grades 9-12, Standard 4, Benchmark 1. The earth's interior has a composition and a structure.

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