

Cave of the Winds  
Activity Two: Are All  
Caves the Same?  
For Grades K-5

Lesson for Grades K-5

About 60 minutes

Satisfies Colorado Model  
Content Standards for  
Science:

**Grades K-2: Standard 2,  
Benchmark 1.** Solids and  
liquids (matter) can be iden-  
tified, compared, sorted/clas-  
sified by their physical prop-  
erties (for example: size,  
shape, texture, flexibility,  
temperature, color and pat-  
terns).

**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.

TAKE A  
GEO|VENTURE



# CAVE OF THE WINDS

## Are All Caves the Same?

### Objectives

1. Students will discuss several types of cave environments.
2. Students will explain one reason why people should not remove rocks, speleothems, or other features of the caves.

### Method

Students compare and contrast rocks representing different cave environments. Students solve mathematical problems to represent visitor impact on the cave environment.

### Materials

Plastic cups • Rocks • Measuring tape • Scale

### Background

Caves differ in temperature and moisture. Some are cold and wet, others are cold and dry, still others can be warm and wet, or warm and dry.

### Suggested Procedure *(Use as appropriate for your group's age/ability).*

1. Exhibit four rocks—one in a cup of water at room temperature, the second in a cup of water that has been refrigerated for several hours, the third dry and at room temperature, and the fourth dry and cold (kept in a refrigerator). Explain that these rocks came from your garden (or someplace similar), not a cave or a park.
2. Allow students to touch and handle the rocks.
3. Begin a class discussion contrasting the differences in the rocks (wet, dry, warm, cold). How do rocks feel in a cave? Do rocks in caves feel different than the ones in the classrooms?
  - a. How many classes are in your school?
  - b. How many schools are in your community?
  - c. How many schools are in your county?
  - d. How many counties are in your state?
  - e. If each year, *(fill in the blanks)* \_\_\_\_\_ school classes from the state were to remove 4 rocks from Cave of the Winds, how many rocks would be removed...
    - ...in a year's time? \_\_\_\_\_
    - ...in 5 years? \_\_\_\_\_
    - ...in 10 years? \_\_\_\_\_
    - ...by the time you graduate from high school? \_\_\_\_\_
  - f. If each rock weighed 3 lbs., how many tons of rocks would be removed?
  - g. Find a rock that weighs \_\_\_\_\_ (fill in the blank). Measure the area. Compute the area in square feet that would be missing from the cave yearly. (Use an object like a building to compare your figures to, so you have a visual aid to assist with the concept.)
4. Are the rocks/speleothems in Cave of the Winds being replaced?
5. Do speleothems grow at fast rates?
6. How can your students help promote cave conservation?

*Note: These exercises could also be done using Cave of the Wind's annual visitation of 200,000 guests.*