BCPS Field Trip Request ID # 8201

Trip Request By Debbie Whitsell - OES

Trip Name Squire Boone Caverns

Trip Date 05-07-2018

Approx. Pick-up Time 9:00AM

Return Date 05-07-2018

Approx. Return Time 3:00PM

Class/Group 2nd Grade

Student Count 68

Chaperone Count 5

Number of Vans/Buses 2

Common Carrier Miller Transporation

Cost to Students 19

How will you pay for students who cannot afford the fee?

I added money to each student to help pay for the
students who cannot afford the fee.

Place of Departure

Name: Overdale Elementary

Address: 651 Overdale Dr.

City: Louisville

State: KY

Destination

Name: Squire Boone Caverns

Address: 100 Squire Boone Rd

City: Mauckport

State: IN

Lesson Plans

Objective: Students will be able to distinguish between caves and caverns.
Standard: 3-ESS2-2.Obtain and combine information to describe climates in different regions of the world.

Big Ideas (Teach before the field trip)
 *There is a difference between a cave and a cavern.
*All caverns are caves, but not all caves are caverns.
*Not all caves are made of rocks. Some are made of ice, some form from molten lava, and some are made of coral.
*The only type of cave that is also considered a cavern is a solutional cave.
*Squire Boone Caverns is a limestone solutional cave. Carbonic acid dissolved the limestone to create this cave.

Lesson 1: Cave or Cavern? Experiment Idea
(For the Teacher)
Part One Dissolving Limestone: A Closer Look

Materials
â€¢ White vinegar
â€¢ Eye droppers
â€¢ Shallow pan
â€¢ 5 rock samples (Important Note: One of your rock samples should be limestone, but the others should be non-soluble rocks)

Procedure
â€¢ Explain that rocks and minerals are often identified by their physical properties. Some physical properties used to identify rocks and minerals include color, luster, texture, hardness, cleavage, and weight. One physical property that is often used is solubility â€" can the rock or mineral be dissolved?
â€¢ Examine each of your rock samples and discuss the obvious physical properties of each. Students should fill in the chart on the See For Yourself!

Lesson 1 worksheet. Discuss that some properties (such as solubility) canâ€™t be discovered at a glance and require experimentation.
â€¢ Explain that white vinegar is a stronger acid than carbonic acid, meaning that it will dissolve a soluble rock more quickly and will make the process visible.
â€¢ Place the rock samples in the shallow pan. Using the eye dropper, coat each rock sample with vinegar. Explain that rocks that bubble are soluble rocks. Have students mark their charts so they can see which rocks are soluble and which arenâ€™t. The limestone piece will bubble as it dissolves, while the other rocks will not.
â€¢ Ask students to tell you which rock sample is the limestone. After they tell you, they should add the rock names to their charts.

Part Two Dissolving Limestone: The Big Picture
Materials
â€¢ Sugar cubes
â€¢ A clear fish tank (square or rectangle)
â€¢ Toothpicks
â€¢ 1 spray bottle of warm water
â€¢ Modeling clay
Procedure
â€¢ This experiment requires some prep work. Stack the sugar cubes against the inside of the fish tank. Ideally, the more sugar cubes, the better. The sugar cubes should be stacked at varying heights and depths for a more realistic look.
â€¢ Cover the sugar structure with a layer of clay. Make sure there are no gaps. This modeling clay will represent the soil layers above the limestone. Using a toothpick, poke several holes through the clay. Allow the clay to air dry.
â€¢ Explain to students that the sugar cubes represent large areas of limestone in the earth and the spaces between the cubes represent natural crevices in the limestone through which water travels. Spray the clay heavily with water. Explain that this represents rainwater. The water will seep through the clay and slowly dissolve the sugar cubes.

â€¢ After the experiment and the field trip, students should fill out the Venn Diagram on the See For Yourself! Lesson 1 worksheet.