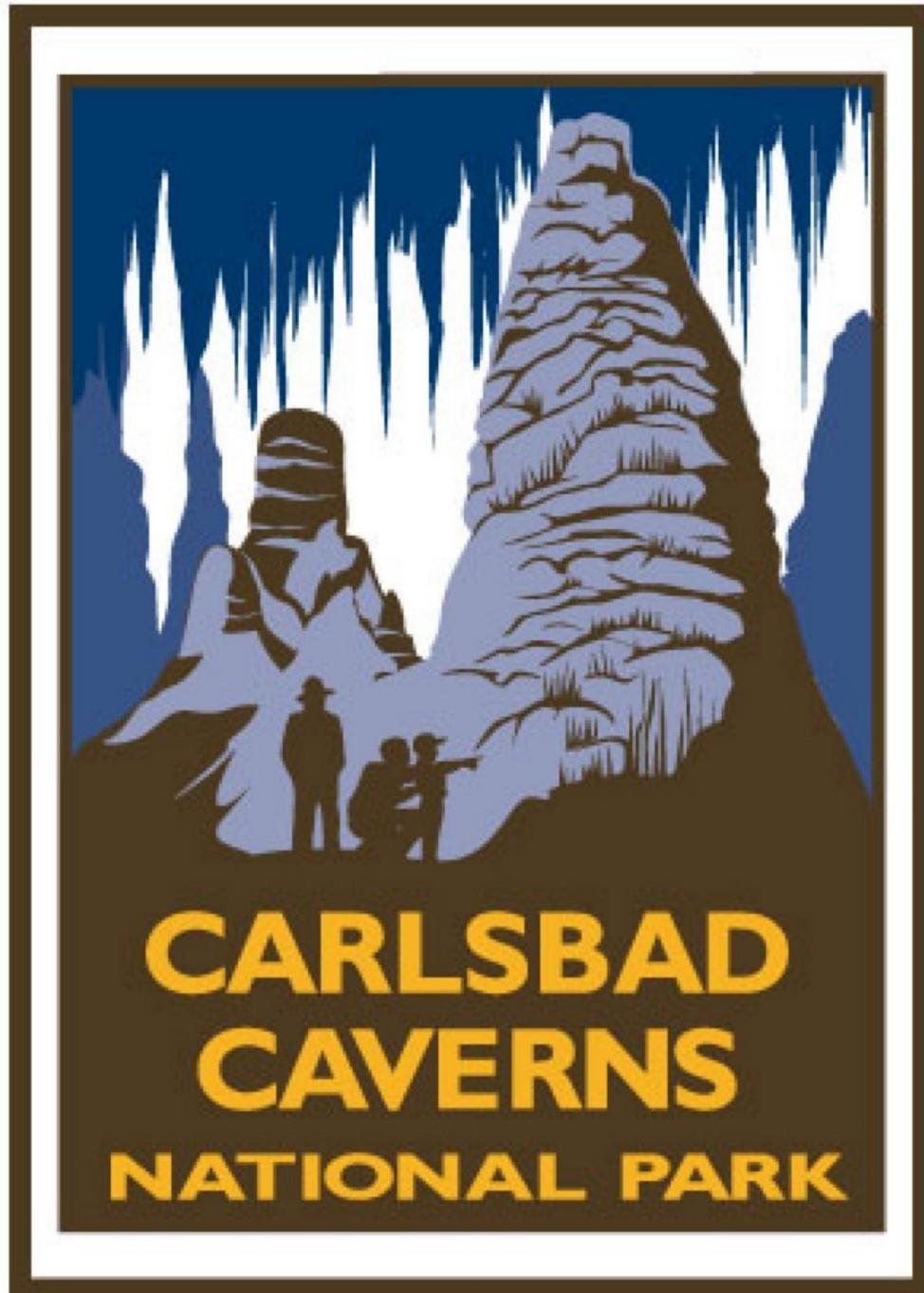


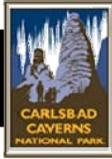
About Bats, Caves, & Deserts

A curriculum and activity guide for Carlsbad Caverns National Park



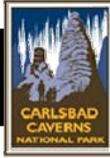
Elementary School





Section 3 – History Activities

- Carve a Petroglyph
- Paint a Pictograph
- Cave Ceiling Art
- History in the Making



Carve a Petroglyph

Pre-Visit or Post-Visit Activity

Primary/Elementary and Intermediate Levels

Social Studies (Geography), Art (Visual)

45 Minutes

Objective(s). Students will design representations of petroglyphs in much the same way as American Indians carved petroglyphs in rocks.

Related NM Content Standards with Benchmarks. SS11-E2, SS11-M2, AE3-M9, AE6-E7

Method. Students carve *petroglyphs* on plaster of paris slabs.

Materials. plaster of paris, cookie sheets, brown tempera paint, large paintbrush, a non-stick spray, knife, pictures of petroglyphs, small rocks, sticks

Key Vocabulary. petrograph, petroglyph, pictograph

Background. Rock art, or petroglyphs are common in the Southwest. Native Americans created rock art on cliffs, in rock shelters and other areas.

See “Rock Art” in Section 2 – Just the Facts.

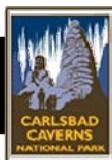
Suggested Procedure for Preparations of Carving Surface

1. Spray cookie sheets with a non-stick spray. Mix plaster of paris according to package directions. Pour into cookie sheets (about a half inch). Allow plaster to set up for the time recommended in the instructions (overnight, if possible).
2. When plaster is thoroughly dry, paint a thin coat of brown tempera paint over the entire plaster surface. Let dry.
3. When paint is dry, lightly score plaster sheet into pieces about 2 ½" X 3".
4. To make the *rocks* on which to carve petroglyphs, break plaster along the scored lines.

Suggested Procedure for Carving Petroglyphs

1. Show the class the petroglyph pictures. Discuss some aspects of rock art such as those mentioned in “Rock Art” – Section 2.
2. Give one plaster carving surface to each student.
3. Have students select a rock or a stick as a carving tool.
4. Instruct students to carve pictures or designs into the plaster by gently rubbing through the painted surface and allowing the white plaster interior to show through. Students may carve something they saw in the rock art pictures, something from memory or something from their imagination.

5. Display their rock art on a flat surface to prevent breakage. This makes a good open-house exhibit. Students may also wish to invite a park ranger to tour their *art gallery*.



Paint a Pictograph

Pre-Visit Activity

Primary/Elementary and Intermediate Levels

Social Studies (Geography), Art (Visual)

45 Minutes

Objective(s). Students will create representations of pictographs and explain the difference between a pictograph and a petroglyph.

Related NM Content Standards with Benchmarks. SS11-E2, SS11-M2, AE4-E8, AE4-M11, AE6-E7

Method. Students create their own pictograph on plaster of paris slabs using native and synthetic materials. (American Indians made paint by mixing fine soil and animal fat. This made a paste that would stick to the rock. Berries and other plant parts were used to dye the paint. However, in this activity, students use glue instead of animal fat.)

Materials. plaster of Paris, cookie sheets, a non-stick spray, knife, yucca leaves or paint brushes, plants used for dyeing (prickly pear fruit, sumac, algerita, etc.), tempera paint or food coloring, glue, different color fine grain dirt, toothpicks or something to stir the paint

Key Vocabulary. pictograph, petroglyph

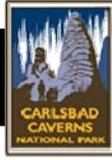
Background. Pictographs can be seen in Southeastern New Mexico around the area of Carlsbad Caverns. In fact, there are pictographs painted in the mouth of Carlsbad Cavern. If your class takes the Natural Entrance Route, look for two pictographs.

See "Rock Art" in Section 2 – Just the Facts.

Suggested Procedure

1. Show students the pictograph pictures, explaining the difference between pictographs and petroglyphs. Tell students that they will be painting pictographs. Discuss why American Indians may have drawn pictographs.
2. Spray cookie sheets with a non-stick spray. Mix plaster of Paris according to package directions. Pour into cookie sheets (about a half inch). Allow plaster to set up for the time recommended in instructions (overnight, if possible).
3. When plaster is thoroughly dry, lightly score plaster sheet into pieces about 2 ½" X 3".
4. To make the *rocks* on which to paint the pictograph, break plaster along the scored lines.
5. If you are using yucca leaves, they will be the *paint brushes*. To make brushes, use a rock or other blunt object to beat the ends until the fibers are exposed.
6. If you are using natural plants for dyes and are not familiar with making dyes, use fruits or plants that have lots of juice such as prickly pear fruit.

7. Depending on the group size, you may want to divide students into small groups when mixing the paint. Mix dirt, glue and water to the consistency of paint. Add plant dye or food coloring to get the desired color. When food color (or dye) is mixed with different color soils, the outcome is also different. Experiment with the different color soils to get different colors.
8. Give one plaster painting surface and a paintbrush to each student.
9. Instruct students to paint pictures or designs on the plaster with their *paintbrushes* to create a pictograph. Students may paint something they saw in the rock art pictures, from their memory or from their imagination.
10. Have students display their rock art gallery on a flat surface to prevent breakage. Invite other classes and/or a park ranger to view the exhibit.



Cave Ceiling Art

Pre-Visit or Post-Visit Activity

Primary/Elementary and Intermediate Levels

Social Studies (Geography), Art (Visual)

40 minutes

Objective(s). Students will model the experience of drawing on a cave ceiling.

Related NM Content Standards with Benchmarks. SS11-E2, SS11-M2, AE6-E7

Method. Lying on their backs, students draw representations of pictographs.

Materials. colored chalk, mural, butcher or sheets of manila paper, tape, tables or desks

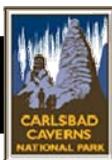
Key Vocabulary. pictograph, prehistoric, culture

Background. Prehistoric cultures painted their rock art in many different locations. Pictographs are sometimes found in unusual places, such as on cave ceilings. In what position would a person need to be in order to paint on a ceiling?

See "Rock Art" in Section 2 – Just the Facts.

Suggested Procedure

1. Tape mural, butcher or sheets of Manila paper to the underside of desks or tables.
2. Have students lay on their backs and draw with the chalk.
3. Display the cave art on the ceiling of the classroom.



History in the Making

Pre-Visit and/or Post-Visit Activities

Intermediate and Secondary Levels

Social Studies (Unifying Concepts, History, Geography),

Language Arts (Unifying Concepts)

15 Minutes Daily for 1 Month

Objective(s). Students will review and appraise recent newspaper articles, television news stories, magazine articles, World-Wide-Web articles, etc., in order to determine their significance to the future of Carlsbad Caverns National Park.

Related NM Content Standards with Benchmarks. SS3-M2, SS3-H2, SS4-M4, SS12-M8, SS12-H8, LA2-M1, LA2-H1, LA2-M2, LA2-H2

Materials. publications about or relating to Carlsbad Caverns National Park (current newspaper clippings, current video of television news stories, current magazine articles, current articles appearing on the internet, etc.)

Key Vocabulary. Vocabulary will vary depending upon current news.

Background. See “Carlsbad Caverns National Park Area History” in Section 2 –Just the Facts.

Suggested Procedure

1. Have each student critically read/review current newspapers and magazines for articles about Carlsbad Caverns National Park. Encourage students to surf the internet and watch the news for events that might have an effect on the future of Carlsbad Caverns. Clippings and videos should be brought to class.
2. Have each student present and interpret one article or video to the class.
3. Facilitate a class discussion after each presentation. As a class, decide whether or not the information in these articles might change the future of Carlsbad Caverns National Park and whether it will be remembered or simply be forgotten.

Additional Activities

1. Have students research their family trees to determine if their families were part of Carlsbad Caverns National Park’s history.
2. Have students bring old photographs. Instruct students to write a story about the photographs. Students may write individually, or write collectively in small groups.
3. Invite grandparents or seniors citizens to share the old days in Eddy County.
4. Invite the Historian at Carlsbad Caverns to conduct a slide program on the history of Carlsbad Caverns. The park historian may also be contacted for suggestions on source materials.

Other Suggestions. By deriving historical meaning from people and events in Carlsbad Caverns National Park's past, students can better understand the relationships between people and their environment. They can better understand human motivations and actions and the consequences of their actions. Have students select a research topic from those listed below and prepare a written/oral report in order that they might better understand how different people in different situations develop different perspectives.

1. Jim White and his central role in the Carlsbad Caverns story
2. Bat guano mining at Bat Cave
3. The importance of photographer Ray V. Davis' work in the Caverns
4. The establishment of Carlsbad Cave National Monument, October 25, 1993
5. Willis T. Lee and the 1924 national Geographic Society-sponsored tour of six months
6. The family of Willis T. Lee – Daughter Elizabeth, Son Dana
7. The first boss at Carlsbad Cave National Monument–W.F. McIlvain
8. Colonel Tom Boles, the park's first superintendent (19 years)
9. The Monument becomes a National Park
10. Frank Earnest Nicholson
11. Building trails and stairways at Carlsbad Cave National Monument
12. Hooking up the electricity and water at Carlsbad Cave National Monument
13. Past and present tours of the underground
14. Laying out the park's surface–buildings, parking lots, landscaping
15. Promoting the Caverns
16. Shafts and elevators at the Caverns
17. The Rock of Ages Ceremony, 1927 – 1944
18. Exploring the Caverns.