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# In the Curriculum

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Multidisciplinary



## Vacationing with the Michaelsons

### A Web-Based Problem-Solving Adventure

By Janet M. Beyersdorfer

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Elementary students rush into the Technology Resource Center (TRC) with two companions: enthusiasm and excitement. Students are eager to begin a TRC session, whether they are practicing keyboarding, preparing a word processing document, communicating by e-mail, or designing a multimedia presentation. They are unabashedly fascinated by the changes shaped by emerging technologies. They anticipate and applaud its increasing velocity. Many want to be at the center of change.

Is this a glimpse of a schoolhouse paradise—excited and enthused students with sufficient time and technological resources to complete the assigned task? Absolutely! However, these students' enthusiasm and commitment diminish as they struggle to read electronic resources (particularly those with linked pages and images) and to identify specific pertinent information. For some students, eagerness merely wanes. For others, it vanishes as frustration grows.

As teachers, we can avoid this technological disillusionment by designing and

using activities that allow students to use learning strategies they are familiar with. (Read more about this in [Effective Electronic Lessons](#)) Debriefing after the activity also helps students learn to navigate the electronic world. To teach students how to apply familiar strategies, I created a reading adventure that integrates well with social studies and science units. See the [complete adventure](#).

## **Embarking on the Adventure**

Many students have visited or have some prior knowledge about at least one of the U.S. national parks and monuments. To introduce the adventure, students discuss this knowledge, thus prompting memory, sparking enthusiasm, and offering others the benefit of their experiences.

Next, the class examines the structure of the reading adventure—the directions, the hints for success, the clues, the initial descriptions, the links, and the questions. They study the printed chart where they will record their answers. They read the adventure's directions and hints for success and have the opportunity to clarify the task.

Then, students read the material and match the clues with the state's park information. To accommodate the expected range of reading ability and problem-solving skills, I form small collaborative groups to determine and record the day on which the students believe the Michaelsons visited a particular state.

Finally, I challenge students to answer the extension questions about the park. You may assign a specific number of questions based on the student's or group's overall academic achievement and skills.

## **Concluding the Adventure**

Intermediate students struggle to integrate the information from multiple documents. The multiple-path structure of hypertext increases this challenge because each unique path presents a different set of rhetorical arguments about the topic. This Web-based activity allows teachers to model how to integrate information and to help students identify strategies that assist in creating meaning.

After completing the charts, groups share how they determined the Michaelsons' itinerary. Students describe successful strategies such as looking for key words in the clues and matching them to the content. They also identify

unprofitable strategies such as random guessing or failing to read the text for synonyms of the key words. As they explain how their successful strategies worked, students identify the Michaelsons' route.

I use this debriefing activity to replace assessment of collaboration or content. However, you may choose to assess the level of collaboration within the group or to allot points for each correctly identified stop on the trip.

### Using the Adventure

This Web-based reading adventure complements a reading, science, or social studies curriculum. Identifying pertinent information is insufficient; students must manipulate and integrate these data to reach a conclusion. The extension questions move the reader beyond basic recall of information. The description of the parks' unique landforms and rich geologic history can augment study about the earth's formation and its features. Finally, because so many of the national parks and monuments record periods of historical or geographic significance, this activity can supplement either history or geography curricula.

Most important, however, is the students' commitment to the problem-solving task and the enthusiasm they exhibit for this project.

*Dr. Janet Beyersdorfer ([jbeyers@aol.com](mailto:jbeyers@aol.com)) has published articles about language, reading, and learning. She is most interested in the relationship between literacy and technology and the influence each exerts on educational research and instructional methodology. Janet is currently an instructional technology specialist at Riley Elementary School in Arlington Heights, Illinois. Five students (Ryan, Alexandra, Kevin, Ian, and Jessica) wrote the extension questions for this project.*

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## Vacationing with the Michaelsons—A Web-Based Reading Adventure

### Web Adventure Directions for the Michaelsons Vacation

#### *Introduction to the National Park Service*

Each of the 378 national parks or monuments has historic, cultural, national, scenic, or scientific importance and represents resources of great national significance. Parks and monuments include early government buildings, Revolutionary and Civil War battlefields, Native American ruins, breathtaking landscapes, and landforms that tell of the Earth's formation.

#### *Meet the Michaelsons*

The Michaelson family has decided to take a seven-day vacation to see the famous national parks and monuments near their home in Colorado. They have packed their bags and have tuned up the car. They plan to get to bed early Saturday night to set out for their six-state tour at 8:00 am, Sunday, May 7th.

#### *Understanding Your Task*

Web Adventurer, you are to:

1. Determine the chronological order in which the Michaelson family visited the national parks and monuments.
2. Record the state next to the appropriate day.
3. Answer the question about that state's national parks or monuments.

#### Hints for Success

1. Read the clues about the Michaelsons' travel plans. The clues are not in chronological order—the reader must piece together the information from the clues, the written description, and the Web site information to accurately determine on what day the Michaelsons arrived at the park or monument.
2. Read the paragraphs about the parks and monuments.
3. Consider the information on the Web sites for each national park or monument. Photos may give important clues about the weather, geography, plants, wildlife, supplies, and equipment.
4. Use the "Find" function to match a key word(s) from a clue to the same

word in the park’s description.

Complete the chart to indicate when and where the Michaelson’s traveled.

Day of the Week	State	Answer to the National Parks and/or Monuments Question
Sunday		
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		
Saturday		
Sunday	<b>HOME AGAIN!</b>	

**Sources**

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National Park Service Home Page [Online document]. (1999, October 31). Available: [www.nps.gov/parklists/byname.htm](http://www.nps.gov/parklists/byname.htm).

Public parks of Alamosa, Colorado [Online document]. (1999, November 5). Available: [www.alamosa.org/statnatparks.htm](http://www.alamosa.org/statnatparks.htm).

**Clues**

- Three days after leaving Arizona, the Michaelsons registered with the park ranger to do some rock climbing.
- After leaving White Sands National Monument, the Michaelsons

purchased tweezers and flashlights, Band-Aids and a very precious item—one gallon of water per person. They had heard that these supplies might be helpful at the next stop. OUCH! At this stop they were able to snap pictures of an exceedingly rare plant that grows in the United States. Thank goodness they drive a four-wheel-drive vehicle, or they might miss seeing the abandoned gold and silver mines.

- The Michaelsons were anxious to visit the site that the astronauts could see from space. This is interesting because it is near the United States Missile Testing Range. They hoped that they would be in time to see a second park—the one that offers a lady bug hunt. That state was the second one they traveled to on their trip.
- After leaving Utah, the Michaelsons next visited a national monument that celebrated its 75th anniversary in 1999. They hoped to arrive in time to see the evening program at the campground amphitheater at 9:30 pm.
- On Wednesday, the Michaelsons wondered whether they would find large crowds at their next stop. No water recreation activities (swimming, boating, fishing, and so on) are allowed at this location because of its importance to Native Americans and other cultures.
- On the first day of their trip, the Michaelsons visited more than one national monument, and they were able to see nearby Pike's Peak. Also, they were anxious to see the petrified sequoia stumps on the Walk Through Time and on the Petrified Forest trail. They checked to see whether the soles of their sandals were worn through—and stopped to have Mom's fixed at a shoe repair shop.
- Exploring for bats, going spelunking, and taking a long hike were part of their plans for the final day of their vacation.

## Arizona

At the [Organ Pipe National Monument](#), backpackers might carry a flashlight when walking after dark to avoid stepping on a rattlesnake. The desert is home to six varieties of rattlesnakes as well as gila monsters and scorpions. The heat can be unbearable here from May to October with temperatures more than 100 degrees F. so most visitors come in February, March and April. Watch out for flash floods and road washouts during the thunderstorm seasons of August and September. Sunglasses, sunscreen, and protective clothing are necessary most of the year. Tweezers and combs are handy for removing cactus spines. Each hiker should also carry a gallon of water.

**Question:** From this brief description, Organ Pipe National Monument does not seem to be a pleasant vacation stop. Why do you think people visit this national monument?

## Colorado

The [Florissant Fossil Beds National Monument](#) were formed millions of years ago when volcanic ash fell in this lovely mountain valley. Huge redwood trees were destroyed as well as other plants, insects, fish, and small animals. Today it is one of the world's richest fossil sites.

Some of the dunes at the [Great Sand Dunes National Monument](#) reach 700 feet, and rise at the foot of the Sangre de Cristo Mountains. These are the highest sand dunes in North America. Don't think about walking across the dunes during the warmest days of the year—the sand can reach a temperature of 140° F. The Medano Pass Primitive Road is unpaved and is primarily sand, which can be deep and very soft. At times, crossing the creeks can be difficult because of high water.

**Question:** You have decided to drive the Medano Pass Primitive Road. What type of vehicle would you choose to drive? Describe or draw a vehicle that would allow visitors to safely view this magnificent park.

## Idaho

The [Craters of the Moon National Monument](#) is home to 148 types of birds, 2,000 species of insects, and 44 types of mammals. Its dedication in 1924 preserved for us its unusual volcanic features. The lava field is 618 square miles—an enormous area. In order to preserve this unique “outdoor classroom” the public is not permitted to hike some of the trails.

**Question:** Imagine you are visiting Craters of the Moon National Monument. You must choose the family's first and last activity at the monument. Explain your choice of activities.

## New Mexico

[White Sands National Monument](#) looks like a 275 square mile field of snow. Very few plants grow here. A few small animals live here and they have adapted a white color skin or fur so that they are hidden in the sand. This is the largest gypsum desert where the wind blows the white sand into sculptures that seem to never end. The sands were one of the last landmarks on Earth still visible to astronauts en route to the moon. Sometimes the park must be closed for visitor safety due to a nearby military base. Wheelchairs can move across

some of the dunes; there are trails for hiking as well.

[Capulin Volcano National Monument](#) was established in 1916 in northeastern New Mexico. It is the habitat for mule deer, wild turkey, black bear and other animals. There is a two mile paved road (no trailers, towed vehicles, bicycles, or pedestrians are permitted on this road) that leads to the rim of the volcano's cone and other trails that allow visitors to really explore a volcano.

**Question:** Why would you visit the White Sands National Monument Visitor's Center? Write three questions about the park facilities and programs you might ask the ranger stationed there.

## South Dakota

At [Jewel Cave National Monument](#), sparkling calcite crystals are the "jewels" of this 102 mile long cave in the Black Hills National Forest. Cavers are still exploring these wonderful holes in the rock.

The [Badlands National Monument](#) contains the site of the 1890s Ghost Dances, hides buried fossils, protects a delicate ecosystem and its endangered animals. The park contains the world's richest Oligocene epoch fossil beds, which are 23 to 35 million years old. The development of the horse, sheep, rhinoceros and pig can be studied here. The black-footed ferret, the most endangered land mammal in North America, makes its home here.

[Wind Cave National Monument](#) (the Nation's seventh monument) is vast—more than 85 miles of passages have been mapped largely by volunteers. Volunteers are important to the conservation of the cave because there are approximately 100,000 visitors each year. Lint from clothing, strands of hair, and skin cells from each person visiting the cave become thick carpets of lint, which can be the home for bacteria and mold. Each year volunteers vacuum and wash parts of the cave walls and floors nearest the paved tour paths.

**Question:** Could the Badlands be called the "Goodlands"? If so, why might it deserve that name?

## Utah

The [Natural Bridges National Monument](#) is carved from sandstone by streams in two southeastern Utah canyons. The names of the bridges carry Hopi

names: Sipapu, Kachina, and Owachomo. The Sipapu and Kachina are the second and third largest natural bridges. In ancient times, people lived in cliff dwellings in this area. It is fascinating to think about what it was like to live in this land hundreds of years ago. There are over 200 known archaeological sites in the park.

In [Rainbow Bridge National Monument](#) No roads lead up to this bridge of stone. This is considered a sacred area by many of the neighboring Native American tribes. More than 300,000 people from around the world visit Rainbow Bridge annually to see the world’s largest natural bridge. You can reach it by boat from Lake Powell or by hiking in—but only with permission from the Navajo nation.

**Question:** What would happen if the number of park visitors to Rainbow Bridge National Monument would decrease by 50%? What might be the benefits to the area and what might be the problems?

### Wyoming

[Devils’ Tower National Monument](#) was known as Bears Lodge by several north plains Native American tribes. Several Plains Indian tribes consider this huge vertical rock to be sacred. The fluted sides of the tower can be climbed and is considered one of the most fantastic crack climbing areas in North America. However the climb is difficult and most visitors hike in the area, particularly the trail that circles the base of the tower. Climbers must register with a park ranger. Out of respect to American Indian beliefs, the tower is closed to climbers during June.

**Question:** Many visitors climb Devil’s Tower National Monument. Why do you think so many people make this dangerous climb?

### Answer Key

<p><b>Day of the Week</b></p>	<p><b>State</b></p>	<p><b>Possible Answers to the National Parks and/or Monuments Question</b></p> <p><b>Answers Will Vary</b></p>
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<b>Sunday</b>	Colorado	The vehicle will need 4-wheel drive and is likely to be jeep-like in structure.
<b>Monday</b>	New Mexico	Questions for the ranger at the visitor's center will indicate its function. Visitors are likely to ask about the park's trails, hiking facilities, programs, camping sites etc.
<b>Tuesday</b>	Arizona	People visit the park to see the desert, the wildlife, and to experience the solitude and beauty of this natural setting.
<b>Wednesday</b>	Utah	The area's facilities, resources, and natural beauty would have less impact from visitors (less litter, pollution, road repair, wildlife would have fewer conflicts/contacts with man) park revenue would decrease due to the decrease in admission fees. Less funding would influence the services provided.
<b>Thursday</b>	Idaho	Personal choice will dictate how the student answers this question.
<b>Friday</b>	Wyoming	People are often motivated by adventurous challenges and the desire to try new climbs rather than familiar paths. They are searching for personal limits.
<b>Saturday</b>	South Dakota	Good events are happening here. Important and positive events include: the preservation of the area, the conservation efforts for the wildlife (particularly for the black footed ferret), and the honoring the location of the Ghost Dances of the 1890's within the Native American culture.
<b>Sunday</b>	<b>HOME AGAIN!</b>	



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