

Get It Together!

Grades: 1 and 2

Length: 50 minutes

South Dakota Content Standards

- ◆ 1st Grade Life Science: Describe various forms of information left by prehistoric animals and their habitats.
- ◆ 1st Grade Life Science: Identify characteristics of plants and animals that allow them to live in specific environments.

- ◆ 2nd Grade Life Science: Compare characteristics of extinct animals with those that are living today.
- ◆ 2nd Grade Life Science: Explain reasons for the extinction of species.

Primary Theme

The Badlands fossil and geological record reflects changing climates and the diversity of life; its study provides insight into the survival of species.

Materials

- ◆ Fossils (choose wisely with objectives in mind)
- ◆ Floor puzzles
- ◆ Slides
- ◆ Projector
- ◆ Reconstructed pictures
- ◆ Modern animal pictures
- ◆ Tub
- ◆ Sediments
- ◆ Plastic Animal
- ◆ Bone
- ◆ Water

Kick-off

Focus student attention to the fossilized mammals found in the park by showing a few example fossils. You can do this by holding one and walking around the room or by setting a few fossils around the room. At some point, cover the fact that these are not dinosaurs; they are mammals, like us.

Demonstration

Discuss how fossils are formed as you conduct this demonstration. Put the little plastic animal in the clear tub. Ask, "What happens to an animal when it dies?" It decays, leaving behind the bones. "What happens to the bones?" Some animals chew on the bones, while others are dragged away.

Take out the animal and replace with a bone. In order to become a fossil, this bone has to be protected in some way. Cover the bone with sediments and sprinkle with water. Now if we let it sit for a long, long time (like millions of years) we have a fossil like this one (put out another fossil). Now we are going to discover all the cool things people have learned about extinct Badlands animals by studying their fossils.

Slide Show (see script suggestions on page 22)

Interactive slide show of Badlands today, fossils, and reconstructed pictures of fossilized animals. Compare fossilized animals to familiar animals of today by asking students, "What kind of modern-day animal does this look like?"

Activity

Puzzle activity. Separate the students into groups and spread them throughout the room, with floor or desk space for each group. Make sure to leave a large space in the middle of the group and enough space between groups. Hand each group a fossil and a puzzle. Ask groups to complete the puzzles and look at the real fossil. As the groups are working, visit each group and ask the students to describe what they notice about their fossil and puzzle. Also, give them a picture of what the animal might have looked like with muscles, skin, and hair/fur. Let the groups pass fossils back and forth if time and interest allow.

OPTIONAL Activity (if time allows)

Drawing and inference. Students choose a fossil and draw a detailed reconstruction of what they think the animal looked like.

Conclusion

Conclude the presentation by emphasizing that many fossils of mammals are found in Badlands National Park. Tell them how special the Badlands are because there are lots and lots of fossils that scientists can study and people can enjoy.

Additional Information

National Park Service - www.nps.gov

Information on all of America's National Parks. Includes a special section for students and teachers.

Views of the National Parks - www2.nature.nps.gov/views

Virtual experiences of national parks and knowledge centers on various natural resource themes.

National Park Service Web Rangers - www.nps.gov/webrangers

Kids can become Junior Rangers from their home or school.

Suggested Slide Show Script (for the Slide Show on page 20)

Fossils tell us information about extinct animals. Remember, a slide show script is just a guideline. You, as the presenter, still must decide on your own approach. The slide show should last 10 to 15 minutes.

Image	Description
1008	Badlands
30	Badlands
1253	Badlands / Grass
849	Badlands
5289	Fossil in-situ with hand
642	Field Paleontologist
5766	Field Paleontologist

Badlands National park is a cool place to visit. People from all over the world travel to South Dakota to see this amazing place. Some people even think it looks like the surface of the moon! But do they realize that as they walk along, their feet are crunching over ancient treasures? These lost treasures are fossils from animals that lived a long, long time ago. Paleontologists (people that study fossils) have found many wonderful fossils in the Badlands. But these fossils are NOT from dinosaurs. They are from other types of animals.

Main point

During this slide show, we are going to discover what these fossils can tell us about prehistoric animals that lived after the dinosaurs went extinct.

Image	Description
1417	Fossilized fish
1412	Fossilized leaf
1442	Fossilized teeth
6130	Jaw
1319	Mesohippus running
5407	Modern horses
1352	Mesohippus herd
1353	Saber-tooth cat leap

What type of animal do you think left this fossil? Right! A fish. Sometimes we can tell right away what a prehistoric animal was like by comparing it to modern animals we know. Not all fossils are of animals! That's right, this is a leaf, from a plant. What do you think this animal might have looked like? Well, it had teeth, and they were flat, and the jaw looks like this. This is a drawing of what this animal looked like. Does it remind you of any animals that are alive today? Modern horses are familiar to us. They are about this big and have

hoofs. Well, the prehistoric horse that left fossils behind was only this big! And, they didn't have one hoof, they had three smaller hoofs like this! (Have students put three fingers together on their desks - if you say "toes" they might think of toes like their own). These prehistoric animals lived in a different environment. Some animals, like the mesohippus horse and this saber-toothed cat, are extinct, but some modern animals remind us of what they might have looked like and what they might have done.

Image	Description
4558	Modern turtle
4679	Fossil turtle

Have you ever seen an animal like this? You have? What in the world is it? I haven't ever seen anything like it. Oh. Of course, a turtle! Well, how about a fossil like this? An ancient turtle. Actually, it was a tortoise, which means it lived on dry land.

Image	Description
5736	Fossil bones in-situ
1365	Archaeotherium skeleton
1338V	Reconstructed picture of archaeotherium

Wow! This is a mystery! What could it be? Let's see, if we put the skeleton all together like this... Ahhh, here we go... Okay, and now let's add some skin and hair. Now what does it look like? A pig! Wow, I bet this animal would eat anything! It was actually a lot bigger than pigs today.

Image	Description
3665	Deer
3797	Modern deer

And here is another picture that paleontologists made to help us understand what these prehistoric animals might have looked like. What animals do they look like? Do you think they look like these modern animals? Yes, they were actually prehistoric deer.

Image	Description
3920	Snail in-situ
4554	Ammonite in-situ
1304	Reconstructed picture of an ammonite
1303	Sea

Here are some unusual animals for South Dakota! Do they remind you of anything? This ammonite is sort of like a clam (well, it's a

mollusk anyway, and kids from South Dakota aren't real familiar with mollusks). We find this fossil in the Badlands, so at one time (really long ago) there was a sea here.

Image	Description
1524	Badlands
5012	Badlands
1428	Fossil teeth
6642	Ancient world

Maybe someday you will go visit Badlands National Park. And as you walk around, look down at your feet because you might be walking past something like this - a fossil which can give us clues about the animals that lived so long ago here. Some of them look familiar and remind us of modern animals, and some look very strange and we have to imagine what they might have looked like. What animals do you see in this picture?