

Buffalo Trace Education Box Lesson 4

Bison Wallows

Purpose: Students will perform an experiment to show how bison behavior create wallows. Students will find out: What is a wallow? How do bison create wallows? What is the purpose of a wallow?

Subject Area: Life Science (animal behavior)

Materials Needed: two different colors of play dough, tennis ball, piece of cardboard approximately 12" x 14" (to be used as a base), images of bison wallowing
For extension activities, you will need: measuring tape, 2-3 cotton balls, a small amount of flour or baby powder, spray bottle with water

Background Knowledge about Wallows

Bison repeatedly roll in dust, damp dirt or mud. (Bison can weigh from 800-2000 pounds.) This wallowing creates a giant bowl-like depression, which may be 15 feet or more wide and one foot or more deep. These old wallows, or mudholes, can still be seen on the plains.

After repeated wallowing, the bison's hair and body oil settles into the soil to form a layer that prevents rain water from passing through the lower layers of soil. Rain water and water from nearby springs are held in the wallow. The water was used by Native Americans, pioneers and other animals.

The purpose of this wallowing is to: help shed old winter hair, stay cool, form a mud coating that protects against insects and add a "sunscreen" to new skin.

Steps:

1. Roll the play dough onto the cardboard, with one color on top of another. Allow each color to remain at least an inch in thickness.
2. Roll the tennis ball around the center of the top layer of play dough. Gradually add pressure to the tennis ball. Continue to roll in a circular motion around the center.
3. As you repeatedly roll the tennis ball and add pressure, a bowl-like depression in the play dough can be seen. The other layer (color) of play dough may begin to be seen also.

Extension Activities:

- a. Measure out a 15 feet circle (the size of a wallow) on the floor or playground. Have students lay in the wallow to compare the size.
- b. Illustrate how clumps of bison hair would come off in the wallow. Attach bits of cotton to the tennis ball. Roll the tennis ball in the depression of play dough. Look for bits of cotton left behind.
- c. Illustrate how dust would form a layer on bison fur. Sprinkle a light coating of flour or baby powder on top of the play dough. Roll the tennis ball around in the depression with the flour or powder. Look for flour or powder clinging to the tennis ball.
- d. Illustrate how mud would form on the bison's hair. Lightly spray the tennis ball with water. Sprinkle a light coating of flour on top of the play dough. Roll the tennis ball in the depression. Look for how mud could form.

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Resources:

- The Bison Project at Midewin National Tallgrass Prairie in Illinois has provided facts about bison and wallows, including the background knowledge in this lesson. Here is information called “How to Wallow:”
 1. Bison falls to knees.
 2. Lowers body to ground.
 3. Rolls on side and stretches front legs. Bison cannot roll completely over because of the hump.
 4. Kicks four legs backward to kick up dust and/or mud over entire body.
 5. Repeat on other side.
- For a photo of bison wallowing, see [Bison](#) (Our Wild World Series) by Cherie Winner (page 18) or on Google Images.