George W. Bush Presidential Center

Native Texas Park Scavenger Hunt—Fall

PARENT/TEACHER GUIDE

**Background:** Blackland Prairie used to dominate the Dallas region, but by the mid 1920’s almost 80% of it was lost to farming. The building of cities reduced the amount of remaining prairie. Today only 1% of original Blackland Prairie remains in the state of Texas. After World War II, housing was developed here, and this site was almost entirely paved.

The Bush Center’s grounds are designed to give visitors an opportunity to experience the native Texas landscape once predominant in the area. This 15-acre park is a unique feature among presidential libraries and reflects President and Mrs. Bush’s love of the native Texas landscape and their belief that the Center should contribute to the everyday life of nearby communities.

**Objective:** This landscape contributes to the Presidential Center’s ambitious sustainability objectives by increasing biodiversity, restoring native habitat, reducing the need for irrigation, and employing an organic maintenance program. The children’s scavenger hunt touches upon each of these. TEKS standards are also addressed.

**Introduction:** Lead in by telling students they are about to go on a hike. Include hike length (total hike should take 30 minutes on site) and general hiking rules and expectations (stay on gravel or grass trails, no running ahead, do not pick or take anything with you, etc.). Photos are allowed. Students are encouraged to try to identify their personal photos by using online or published resources at school or at home. **WARNING:** Be on the watch for FIRE ANT mounds—they love our prairie, too!

**For Individuals:** Give each child a scavenger hunt handout. The scavenger hunt includes items discussed on the adult tour, so both adults and children can walk together.

**For School Groups:** Have the students work in small groups, each with a chaperone. Nature is a new adventure for most children who have grown up in an urban environment; for them to get the most out of this hike they’ll need your guidance. For groups we recommend one adult for every 5-10 children. Provide each student with the scavenger hunt handout and each chaperone with this guide.

**Procedure:** Students can each take an item and read aloud the description, while the chaperone guides them toward it. This guide will help the adult orient the students toward the items. A map is included with arrows pointing out a path. The map is numbered to correspond with each item. Items were chosen to give students the experience of an historically native blackland prairie, the latest environmental techniques in sustainability and rainwater run-off management, and a close-up look at the plants and animals that make up the prairie eco-system. Once an item is located, the chaperones should ask the provided “Let’s talk about it” conversation starters that will connect the students’ experience at the Native Texas Park to their daily lives.

**NOTE:** The park is a dynamic environment. Everything on the scavenger hunt list may not be found in one visit. Encourage the students to revisit the park with their parents to show what they’ve learned and maybe check off a few more items. We’re open year-round from sunrise to sunset and admission is always free! We offer both Spring and Fall versions of the scavenger hunt.

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**1. Side Oats Grama**—Texas even has a state grass and this is what it looks like! Grasses were very important to both the Native Americans and European settlers because they provided grazing food for bison and cattle. Both animals were a main source of food, clothing and even shelter to people who lived on the prairie.

TEKS Social Studies: §113.15 (b)(2)(A). History (Early Texans way of life)—Grasses were food for Native American’s bison and settler’s cattle.

**Let’s talk about it:**

Why do you think the settlers chose to raise cattle rather than bison?
Can you find another type of grass?

**Guidance:** They were easier to domesticate and keep near the homestead. Bison roamed far and wide.
4. Grasshoppers—Producers need sunlight, water, and carbon dioxide to make their own food. Consumers are dependent on other organisms for food. Our plants are producers and grasshoppers and other plant-eating insects you see in the park are the consumers.

**TEKS Science:** §112.15 (b)(9)(A). Organisms and the environment (Producers, consumers, and decomposers) — The grasshopper is a consumer because it must eat plants for food.

**Let’s talk about it:**
Do you know what a food chain is? If we start one with plants, then grasshoppers...what would be next in the food chain in this park?

**Guidance:** Birds will feed on the grasshoppers.

Stop #3: This nest is in a tree between the seep/bioswale and the path—about eye-level. Continue across the bridge to the meadow.

3. Habitat—A special place where plants or animals can live. For animals, a habitat must provide places for food, shelter, and water. This park provides a habitat for birds, insects and small mammals. Look for other types of shelters on your walk!

**TEKS Science:** §112.15 (b)(10)(B). Organisms and environments (Inherited Traits) — Making nests and burrows is an inherited behavior. Each bird is born knowing how to make a nest. Different species of birds make different nests. This nest consists of dead twigs shaped into an open cup lined with grasses, leaves and trash. The male builds the twig foundation and the female makes the lining.

**Let’s talk about it:**
What animal lives in the shelter pictured? Can you point out some food or water sources for it in the park?

**Guidance:** This is a Northern Mockingbird nest. They may get water from the bioswales, forebay, or wet prairie. They eat insects in the summer and fruit in fall and winter.

Stop #4: As you’re heading through the meadow you may see lots of grasshoppers. Follow the grassy path to the top of the ridge.

5. Monarch Butterfly—The state butterfly of Texas! The monarch female will only lay eggs on milkweed plants. For this reason, Milkweed is called a host plant. Nectar plants (like this Texas Lantana) provide food for the monarch during its migration. We have both host plants and nectar plants in this park. Many other butterflies visit the park, too. See any?

**TEKS Science:** §112.15 (b)(10)(A). Organisms and the environment (Life cycles) — First butterflies are eggs, then caterpillars, then chrysalis, then butterflies.

**Let’s talk about it:**
Can you see any butterflies today? What is one thing you can do at home to promote a butterfly habitat?

**Guidance:** Planting nectar flowers like lantana attract butterflies; planting host flowers like milkweed or parsley encourage egg-laying.

Stop #5: At the top of the ridge, turn left. On your right you’ll see lantana and possibly some monarchs.

Stop #2: Take a right toward the lawn, then a sharp right. Continue on the grassy path toward the SEEP ...
6. Turks Cap—These flowers have adapted to attract pollinators. When a hummingbird sips nectar from inside the flower, its head picks up pollen, too. Then, as the bird moves from flower to flower tasting more nectar, the pollen rubs off on the pistil of a new plant, thus fertilizing it, resulting in the production of the fruit. In August, you may spot a hummer!

Let's talk about it:
Do you know what else attracts hummingbirds to the beautiful Turks Cap flower?

Guidance: Hummingbirds are attracted to the color red.

TEKS Science: §112.15 (b)(10)(A).Organisms and environment (Adaptations)—Red plants have adapted to the fact that

6. Turks Cap: Continue on the grassy path and right before the stone path is a big Turk’s Cap plant (on the left). After it, turn left on the stone path.

7. Wet Prairie—Water from all over the property eventually ends up here, where it slowly infiltrates into the cistern (an underground storage tank that can hold 250,000 gallons of water). We reuse 90% of our stormwater run-off. The grasses and sedges here adapt to both saturated and extremely dry conditions. When it has water below, it will be green. If dry, it will be brown. Wet prairie plants include Little Bluestem, Bushy Bluestem, Inland Sea Oats, and Cherokee Sedge.

Let's talk about it:
Where do you think the rainwater run-off would go if we didn’t have a wet prairie and cistern to keep it on our grounds?

Guidance: The water would run through the city storm-water drains and away to other parts of the city where it may cause erosion and flooding.

TEKS Science: §112.15 (b)(7)(A).Earth and space (Properties of soil)—Different plants live in dry and wet soils. Plants that live in wetter soils have adaptations so their roots don’t drown or rot.

7. Wet Prairie: Stop in the center of the bridge and notice the wet prairie with the cistern beneath. Turn and head back the way you came...

8. Maximilian Sunflower—This range plant is eaten by many livestock. In the fall, it produces a heavy crop of seeds, making it a valuable plant for wildlife, too. It was named for the naturalist Price Maximilian of Germany, who led an expedition into the American West in the 1830’s.

Let’s talk about it:
What park wildlife do you think would enjoy sunflower seeds as a food source?

Guidance: Mainly birds, but mice and other rodents will also eat the sunflower seeds.

TEKS Science: §112.15 (b)(10)(A).Organisms and the environment (Life cycles)—The purpose of flowers is to produce seeds. Seeds can be dispersed by wind, by water, by animals eating them, and by sticking to animal’s fur. This plant grows from 3-8 feet tall.

8. Maximilian Sunflower: You’ll pass several tall Maximilian Sunflower plants. They may be dried or flowering. Continue walking down the stone path...

9. Forebay—Via underground pipes, stormwater from the service area to the east of the building, and the building itself, flows into the forebay. The limestone rocks slow the water down in order to prevent erosion and the sediment and litter carried with it settles out here before the water is released into the bioswales and on to the wet prairie and cistern. The forebay can get dirty and is cleaned as needed.

Let’s talk about it:
Do you notice any litter or oily residue in the forebay? Where do you think that comes from?

Guidance: The service/work areas can get dirty with litter and chemicals. Rainwater picks it all up and brings it to the forebay for filtering.

TEKS Science: §112.15 (b)(1)(B).Scientific investigation and reasoning (Conservation)—We have one forebay in the park. It’s another component of our hydrology system.

9. Forebay: And check out the Forebay. Continue on the path to the amphitheater area.
10. Pecan Tree—There's several trees near the amphitheater. One is the state tree of Texas, the pecan tree. Both Native Americans and Settlers used the pecan nut to supplement their diet, they used the leaves and bark for medicinal purposes, and the wood for implement handles and as for fuel to burn.

TEKS Social Studies: §113.15 (b)(2)(A). History (Early Texans way of life)—Native Americans and settlers enjoyed this native plant source of protein.

Let’s talk about it:
What is your favorite pecan dish?
Guidance: Suggest and help the kids share the many ways they enjoy the nut of our native Pecan tree.

BONUS! Amphitheater — The stone used in the park is called “Leuders Limestone” and comes from Abilene, Texas. 65 million years ago Texas was under water. This limestone was formed by the layering of shells of small fossilized snails, shellfish, and coral over millions of years. The architect said this was the most beautiful limestone he’s ever seen.

TEKS Science: §112.15 (b)(7)(B). Earth and space (Weathering and Erosion)—This stone is now at the surface of the land, it will eventually wear away by weathering (wear due to mechanical or wind forces) and erosion (wear due to water).

NOTE: You may want to stop at the wall near the bicycle racks on the way out. The fossils there may be easier to find.

Let’s talk about it:
Take a close look at the limestone in the amphitheater. What color is it? How would you describe its texture? Can you spot any fossils?
Guidance: Encourage the kids to go and explore the properties of the stone.

OTHER SITES YOU WILL SEE IN THE PARK:
As you walk throughout the park you’ll see other components of our hydrology system that the students may ask about: (1) The limestone SEEP serves as a barrier that keeps storm water from the lawns and parking lot from rushing into the swale below. Instead, the water slowly trickles out joints in the wall for days after a rain. The seep’s micro climate supports shade and moisture-loving plants such as Maidenhair Fern, Wood Fern, Spider Lily, and Spicebush (2) BIOSWALES (one, of many in the park, heads from the seep and goes under the bridge that’s between the Great Lawn and the Wildflower Meadow) are above ground channels where rainwater from the landscape and parking lots flows. Boulders slow down the flow of water as it heads toward the cistern and wet prairie. Wherever you see what looks like a dry creek with lots of boulders—it’s usually a bioswale. The best time to appreciate the hydrology system here is after a rain.

OTHER TEKS APPLICABLE TO YOUR PARK VISIT TODAY:
Physical Education: §116.6 (b)(3)(F). Students take advantage of an opportunity for physical activity out in the community.
English Language Art and Reading: §110.15 (b)(18)(B). Students will translate their experience to the form of a Thank-you note.

Did you love your experience at the Native Texas Park? We encourage you to write a “Thank-you” letter to President and Mrs. Bush about your experience. Please send all correspondence to:

President and Mrs. Bush
P.O. Box 259000
Dallas, TX 75225-9000

***** SPECIAL NOTICE *****
Please have the students check their shoes for gravel or debris before entering the museum.
Your consideration is appreciated!