



Exploring the Prairie

45-60 minutes

By: Phil White

at Indian Creek Nature Center

Directions: This exploration is not fixed to a specific route or trail in the prairie. It is more a description of what you might find, and a challenge to make you think about what you are experiencing. Challenge your students to guess at the information being presented. There is a route marked on the map if you are looking for some guidance. You can see or experience most of this by simply moving through any of our prairie trails.

Suggestion: after reviewing this document, first take students a little ways into the prairie then start to work on the content of this paper. The prairie is constantly changing so season to season, year to year it will be different. Have fun. There is an attached worksheet that can be used as a scavenger hunt to record what you have found.

History of Prairie in Iowa

- Pre pioneer settlement, it is estimated that about 80% of our state was covered in the tall grass prairie, today only about 0.1% of that remains (Daryl D Smith [Iowa Prairie](#))
- The tall grass prairie ranged from southern Canada all the way down to northern Texas.
- Iowa is the only state to be totally contained in this landscape.

- West-central states are covered in short grass prairie.
- Today many places like Indian Creek Nature Center are attempting to restore or recreate the prairie.
- There are many very general descriptions for the prairie from early explorers, but few actual details. The actual mix of plants that made up this vast habitat is unknown. We know they are dominated by the tall grasses, and have many wild flowers to go along. There might be in excess of 200 different types of plants in a prairie like the one you are standing in.

Plants of the prairie

- Take a look around and see how many different plants or plant types you can find. Look for low growing plants at ground level, then see how the tall grasses are bundled at the bottom.
- As you move along pay close attention to the shape of things.
- look out over the landscape, **what do you see? Birds. What are they doing? Can you see or find insects?**
- You will find some plants have square stems. When you find one of these get in close and give it a smell. These plants are in the mint family and you should be able to recognize that smell. Notice how the blades of grass are tough and strong. **Why are the blades tough and strong?** *So, they don't blow over in the wind.*
- **Who eats these grasses?** They used to support very large *Herbivores (plant eaters)*, like bison and elk. Stories are often heard of the enormous herds of bison that roam the "west." In Iowa a large herd would have been only about 300 animals.
- The tall grasses have an interesting wintering strategy. They store their food reserves down in their roots. This means large animals had to eat an awful lot of grass to survive.
- But what roots!!! **How far down do you think the roots of these plants go down underground?** *These grasses and many of the other plants have roots that can go 12-15 feet underground.* This helps them survive being grazed down, and it also helps them survive the fires that often swept through. These roots carry oxygen down into the soil which supports an entirely different biome of little creatures! They break up the soil and create the signature nutritious black dirt you are standing on.

- Stop in the Amazing Space exhibit hall after your hike to look at the roots of a Wild Rose. Notice the height of the plant versus the root system.

Fire in the Prairie

- Fire truly shaped this land, it came naturally as well as being used by the Native Americans, and now us to help restore the landscape. Most nonnative plants can't handle the fires and are limited by periodic fires.
- Once an area is burned it is blackened allowing the sun to warm the ground giving those long roots a head start on the growing season.

Galls

- One of the plentiful plants in our prairies is Goldenrod. In the fall when it blooms it has clusters of golden flowers. It is a single stalk or cluster of stalks about 3 to 4 feet high with the leaves around this stem. In the winter and spring it is a brown stick sticking up.
- Look for these stems and pay close attention, sooner or later you will see one with a small ball around it. This is a little habitat created by the Goldenrod Gall Fly and it is called a Ball Gall.
- The fly inside the ball gall lays its egg at the base of the plant, in the stem sometime in the spring. When the larva hatches it starts eating away. The saliva has something that mimics a growth hormone in the plant causing the Goldenrod to grow the ball around the insect. It now has a tidy little habitat with everything it needs. **Why is this a good strategy for survival?** *Safe from the elements (weather), has food it needs, pretty safe from most predators*
- If you find the brown galls look at them closely. Is there a hole in it? If there is only a pin sized hole, this is the lucky one as an adult came out of this hole. If it is larger, more square or cone shaped, this one became a meal for a bird that knows where to find a tasty meal.
- Look around at the plants and see if you see other oddities in them. There are many other types of insects that cause the plants to grow around them in different ways.

Food Chains

- When you come to the logs, stop and talk about the food chain.

- **Where does energy come from?** *All energy in this ecosystem comes from the sun.*
- Plants convert the sun's energy via photosynthesis into sugars.
- **What eats plants?** *Insects and herbivores.* They convert the sugars into proteins, among other things.
- **Who eats insects and herbivores?** *Birds, coyotes, foxes, and other carnivores (meat eaters) or omnivores (eat anything) like racoons eat these small creatures.*

Food Chains (continued)

- So, from bottom to top think about how much plant material it takes to support the hawk you might see flying overhead!
- **Who recovers all those nutrients when plants and animals die?** *These creatures are called decomposers, without them we would be miles deep in dead things.*
- **What are some examples of decomposers?** *Pill bugs (also known as roly pollies and sow bugs), slugs, snails, worms etc. Vultures and Eagles help by eating some dead things or scavenging.*
- Roll over a log and see what you can find. Please, put the log back so as to maintain this cozy habitat for later exploration.

Observations

- As you walk the trails you will see small mounds of dirt. These are made by the Pocket Gopher.
- You might also see a raised mounded trail, this is from a mole. They live their entire life underground, and have many adaptations for this. **If you were creating such an animal, what adaptations would you give it?**
- Think of other animals that might live in the prairie or along the forest edge. **What adaptations do they have? Might the deer be hard to see in the brown grass? Camouflage. How about foxes ears, or the hawks eyes?**

Continue on your hike and look for the details that make up this prairie.

Name: _____

Prairie Activity sheet: Draw a picture of the items as you see them on the Prairie.

Single Flower	Square stemmed plant	Seed	Something bright
Insect	Gopher hill	Tall grass	Rounded Leaf
Creepy crawly thing	Something unusual	Ball Gall	Bird
Leave with points	Short grass	Flower cluster	Thorns

