



# **Champion of the Classroom**

**Rose Star**

## **Looking at the World Through the Eyes of Don YellowBird**

Don YellowBird is a man of Arikara and Sioux descent. His home town, White Shield (population about 600 people), is on the eastern edge of Fort Berthold Reservation in North Dakota. Fort Berthold is often referred to as "The Home of the Three Affiliated Tribes." The Arikara, Mandan, and Hidatsa peoples have lived here cooperatively since 1862. At one time Fort Berthold was one large piece of land, but the United States Corps of Engineers built a dam in the middle of the reservation. The land is mostly farmland and badlands.

When Don was younger, he attended elementary and high school in Minot, North Dakota. After high school he went to college, Wahpeton State School of Science. Later he transferred to Grand Forks, North Dakota, where he earned his Bachelors and Masters Degrees in Education. He moved to White Shield where he has lived and worked as an elementary teacher for over fifteen years.

Don grew up as the middle child of 13 children. His mother, Dorothy, has always been very loving and supportive. His father, Grover, died years ago, but Don still feels his influence. His father was a firm disciplinarian, and had high expectations for Don which were sometimes hard to live up to. His parent's expectations gave him a sense of self responsibility and determination . . . values which helped him to attain many goals.

Don's many accomplishments include awards in track, football, cross-country, and basketball. He was honored in the Wahpeton's Hall of Fame for excellence in football. In 1986, the North Dakota Indian Education Association selected him as Indian Educator of the Year.

He helped organize the first North Dakota Native American Science Fair. Don felt that Native American children needed to be recognized for their talents and abilities. In the state science fair competition, only a small percentage of the participants were Native American students. He believed that Native American children would feel more comfortable participating in science fair competitions that were judged on science projects with special meaning to their culture.

He also worked with In-Med (American Indians in Medicine), where he helped coordinate programs to help Indian students who wanted to work in health fields. Don would like to see more Native American children become teachers, lawyers, doctors, and administrators to provide leadership. Don's love for working with the children brought him back to White Shield where he has continued to teach and coach.

For recreation, Don hunts, fishes, and plays golf. He goes hunting with his friends during hunting season every year, but he says he goes for the pleasure of walking in the "breaks," observing wildlife, and enjoying the land. The "breaks" is a name for land that has been worn away by erosion of the soil, from rivers or the weather.

During hunting season, hunting for deer is called "harvesting." Each hunter is allowed to shoot one deer if the deer population is high. If the deer population is low, only a limited amount of deer hunting licenses may be sold restricting the number of hunters. Harvesting, he says, helps keep the deer population stable, because if the deer become too crowded there may not be enough food to feed the deer and they may starve to death. However, if the deer population become too low, then there is the chance they may become extinct.

When Don goes on these hunting and fishing trips he said that if you really look you can see many interesting things. You may even begin to imagine what life was like many years ago.

Don tells his own story:

One day, on a walk in the breaks, my students and I saw some petrified sequoia tree trunks and I wondered, "Sequoias in North Dakota?" I thought, "Now how could they be here?" One petrified sequoia was sitting there and had eroded all the soil around its trunk and was setting up in the air. . . like a trophy sits on its base! These great big sequoias are at least ten feet around. Perhaps the

area down below in White Shield had been a big sequoia forest at one time. This would explain the rich coal deposit in White Shield. Coal comes from dead vegetation and dead animals and trees. There may have been a lot of dinosaurs here many years ago. Maybe when the dinosaurs died and their bodies decomposed under the weight of the soil, coal formed.

If you look at the soil, you see the clay in a lot of layers and you see the vegetation. When you look at the river, you can see how the water has eroded the shorelines and formed the river. As we looked around, we found a lot of edible plants, like wild turnips and berries (including bull berries, bear berries, and wild cactus berries). All these plants are growing on the land, feeding the inhabitants.

If you walk and don't run, you can see all these things. It's not just badlands; it's a place of wonderment! It's a place that makes you wonder, "Why is this like this?" Lots of questions buzz through my mind as I walk on the land. Sometimes when my brothers and I are out walking along these paths, we might find some bones of cows and I wonder how did the bones get there. What happened? How did the animal die? By not hurrying, but stopping, looking, touching, and observing, each person gets a different picture of nature that exists right here in White Shield.

Once I saw some little ants and I observed them and I thought, "These little ants are amazing little insects! They're lifting hundreds of times their own weight." It would be like us, carrying a house on our back. Then we find there are different kinds and colors of ants. Some ants fight and some don't. There are millions of different insects and in order to see what each one does you have to sit and look and watch. If you don't stop to observe, you miss a lot of this stuff.

The time I like to be outdoors is in the morning. So many things happen in the morning. I have camped out overnight, and early in the morning I've seen deer come down to the water and drink. I've seen loons, too. You see ducks, geese, and swans fairly often, but to see a loon is a rare occasion!

Take some time, get some binoculars, and observe all the different types of birds. One thing I have observed was the ducks. You see the males, they're so pretty, so beautiful! Then compare them to the females. They're so drab and plain. Why are male ducks colorful and female ducks plain? The answer is right there. Who has to protect the nest? Who has to camouflage right into the surroundings? The female duck! The male is the one who flies off and gets the attention and the female has to protect their nest, and her blending in is her cover, her protection. The female matches the reeds and grasses, while the male has bright colors on his head and chest that make him stand out. I've seen this in over 50 different species of ducks.

I think the bottom line is this: Do we want someone to destroy this? Where will the ducks live? Where will the ants live? Ants help to break down plants so that they may be recycled. People may kill off the insects by spraying insecticides and the wilderness will disappear, and our children will not see what we can see now.

Many farmers use chemicals to fertilize their fields and to kill insects. These chemicals filter down through the ground into underground rivers, called the groundwaters. Through natural springs this same water enters our rivers and is then taken into water treatment plants where some impurities are filtered and the water is recycled for us to use. Many impurities are still in the water. We drink this water. Animals (including cows, pigs, and chickens) drink the water. The chemicals are absorbed by plants. We in turn are swallowing those same chemicals into our bodies when we drink the water, eat the animals that drink the water and eat the plants, and when we eat the plants.

There are other more natural ways to make the soil rich and reduce the number of crop eating insects. We can use manure, the natural waste of livestock, as a fertilizer. It puts nitrogen back into the soil and won't hurt us. There are insects that can be put into these same fields, that will eat the insects that feed off the crops. Chemicals may or may not be quicker and easier, but they may be harmful to the earth and animals (including people). We need to think of what is the best way, to protect our environment and our lives. In the future, clean water will be more valuable than money. We have to learn to use water wisely.

Water also helps clean our air. After a rain, I like to go outside, take a deep breath and look around. I breathe in pure air, because the rain has cleaned the air of all impurities (like dust, smoke, and chemicals) by driving them into the ground. In that short period of time, we breathe in pure air.

After a while, we start smelling pollution. But the smell of fresh air is great!

After the rain, I often see a rainbow. It is beautiful! A rainbow is made from water droplets suspended in the air like prisms. Sunlight is bent, or refracted, as it passes through the water droplets. Normally, we can't see the color of light. The colors: red, orange, yellow, green, blue, blue-violet, and violet are streaming down on us all the time. These seven colors are the colors of light, but when they shine together they turn to white light. After a rain, when the sun is to our back, the light rays hit a raindrop and are refracted and we see the colors of the spectrum: the rainbow.

The rain also nourishes the trees. Trees are pretty to look at and they give us shade. The grass is green, and nice to lie on. We often think of plants as the lowest form of life, but we really don't realize how important plants are. Where would we be without them? We use them for food. So do the animals that we eat, such as cows and pigs. This is called the food chain. One food chain begins with grass. The cows eat the grass and we eat the cows.

We also need plants for oxygen. People breathe in oxygen and breathe out carbon dioxide. Plants take in carbon dioxide from the air and give off oxygen. Oxygen is produced during the food making process of the plant called photosynthesis. Without this oxygen cycle, we would die. When we kill plants, we cut off our own oxygen supply. The Native Americans have known for many years the importance of the balance of nature and have used storytelling to help others understand and have respect for our environment.

### **Discussion Questions:**

1. Why does Don YellowBird say that it is important to walk slowly and observe?
2. What role does deer harvesting have in the balance of nature?
3. Why are the colors of the male and female duck important?
4. Why should we care about groundwaters?
5. Why is it important to understand the way the land used to be and the way it is now?
6. Where do you see colors of the spectrum? What makes those colors?
7. If a food web is the complex interaction of many food chains, why is every plant and animal important?



Illustration on page 1: Tracks (clockwise from lower left) - 4 prints of bullfrog, 2 prints of beaver (one with webbing), lizard (with trail of tail), 2 prints of raccoon pointing right, 2 prints of skunk pointing left, 2 prints of fox pointing right, 4 prints of bighorn sheep, 4 prints of squirrel, crow's tracks, blue heron's tracks (top center), turkey vulture's prints of black bear pointing left, human footprints, and pack rat's tracks (lower center).

## Science

### Where Have All the Forests Gone?

#### Objective:

Students will define deforestation, identify the main causes of deforestation, and learn how deforestation affects the environment.

#### Materials:

- cake pans
- soil
- small rocks
- sand
- bean seeds
- grass seed
- plant sprinkler or pitcher

#### Exploration:

Group students and pass out the cake pans. Have the students put a layer of small rocks or pebbles on the bottom of the pan for drainage. Do not put anything at one end of the pan. Next, layer a thick mixture of sand and soil into the pans on one side, slanted downwards to one end that should remain empty. Poke holes about one-half inch from the surface of soil. Place one bean seed in each hole. Cover lightly with soil. Sprinkle grass seed over the surface of the soil. Water lightly and place in sunshine. Allow seeds time to grow.



## **Seminar:**

After seeds have time to grow a few inches, separate the pans into two groups. With one group of pans, cut the bean sprouts close to the soil. Remove the cuttings. The other pans of sprouts are left uncut. From a height of about 12 inches, pour water onto the topsoil.

Suggested Questions:

Describe what is happening?

Is the soil running to the empty end?

How much soil has been washed away by the rain?

What is the difference between the pan with cut “trees” and the pan with uncut “trees?”

Students may record the results in their science journals.

## **Invention:**

Explain that the pans and bean sprouts model a simulation of our real environment. The bean sprouts represent the trees. Trees anchor and protect the soil. Deforestation occurs when trees are cleared from an area. If all of the trees in a given area are cut down, called clear-cutting, there is nothing left to protect the soil from rain or wind, until new trees have grown back. This is one form of deforestation. Another form of deforestation may be caused by forest fires.

## **Exploration:**

Remove the top layer of grass in the pans with the cut sprouts, so that the soil is exposed (simulated after effects of clear cutting or forest fire). Now pour water onto the soil from a height of about 12 inches.

## **Seminar:**

Discuss the differences in the two experiments (with “trees” or without “trees” and with grass or without grass).

1. What is happening now?
2. How much soil has run off onto the empty end of the pan?
3. Is it more than the first experiment? Less soil than the first experiment?
4. Which loses more soil, the pan with “trees and grass” or the pan without?
5. Can you plant crops here? Why or why not?

## **Invention:**

Whether the deforestation is caused by cutting or by forest fires, erosion is usually the result. Erosion is the process by which soil or rocks are worn or carried away by water, wind, or gravity.

The second experiment was a simulation of erosion. When the trees were taken away, the grass was exposed and it started dying as a result of the heat from the sun. When the rains came, the top soil was washed away. Once the topsoil is gone, trees or planted crops will not grow as well.

## Application:

Reforestation is the opposite of deforestation.

1. In cooperative teams, design reforestation plans for an area that has been clear cut.
2. Make a plan to harvest trees in a way that reduces erosion.
3. Discuss/debate the effects of deforestation on all types of forests (including tropical rain forests).

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