

Importance of Animals to the Dakota: Western Science VS. The Dakota Indian Method of Animal Classification

I. Curricular Area:

1. Science

II. Learner Goals:

Students will appreciate that the Dakota use scientific methods to classify the world around them and that there are many valid methods.

III. Learner Outcomes:

Students will be able to

1. compare and contrast the Linnaean and Dakota method of animal classification
2. evaluate some of the advantages and disadvantages of both methods of animal classification.

IV. Student Activities

1. Read the Student Reading
2. Students should create the Animal Classification chart and decide which category the animal best fits.
3. Have the students fill in two charts and classify 20 animals according to the Linnaean and Dakota taxonomy, answer questions relating to the charts at the end of the chart activity
4. Participate in group discussion.

VI. Background

Provide copies of the lesson and activity to each student. Discuss the ideas suggested in the lesson that all methods of classifying nature include the bias we learn as members of particular cultures. Discuss some possible reasons why the Dakota selected "method of locomotion" as a way of classifying animals. Then place the following two lists on the board.

Sample questions: Which chart was easier to use in classifying these 20 animals? Does one method seem more precise than the other? Are there animals on the list which do not fit either charts category? Do you have to ignore several characteristics of each animal in order to use either or both classification systems?

Dakota Method Linnaeus Method

2 legs	fish
4 legs	amphibian
Fly	reptile
Swim	bird
Creep	insect
Not sure	mammal
	not sure

Then, place each of the following 20 animals under the category on each list where you think that animal fits best.

Turtle
Bat
Mosquito
Manatee
Crow
Halibut
Lizard
Dolphin
Kangaroo
Ostrich
Penguin
Whale
Dragonfly
Opossum
Rattlesnake
Pike
Robin
Flying squirrel
Frog
Human

IMPORTANCE OF ANIMALS TO THE DAKOTA
Methods of Animal Classification/ Western Science vs. the Dakota Indian

STUDENT READING:

Science is a way of thinking about the world around us. Scientific categories also shape the way we see our world. Western science developed out of European world views. All people, however, use steps in the scientific method to classify their environment. In the languages of all people are sets of terms that create distinct domains. Sets of terms for animals, for example, will be different than sets of terms for plants, rocks, and other domains of nature.

Western scientists use the Linnaean method of plant and animal classification. Developed by the Swedish botanist, Carolus Linnaeus, this method groups such distinct creatures as people, bats, and whales together as mammals. In order to group these animals together, Linnaeus had to concentrate on three common features: warm bloodedness, suckling the young, and hairiness. He had to ignore vast differences such as whether or not these animals fly, live on the land, or swim in the sea. All classification methods create distinct domains by concentrating on certain things and ignoring others.

Charles Alexander Eastman, in his book, *Indian Boyhood*, provides us with an example of how the Dakota (Sioux) Indians classified animals. Eastman grew up in a traditional Indian way. Then, when he was 15 years old, his father placed him in a white man's school. He went on to become a doctor and practiced medicine in St. Paul, Minnesota.

He also wrote books about his early life, and he advised Boy Scout troops about Indian customs. The following excerpt from *Indian Boyhood* tells about his Indian grandmother, Uncheedah; and got [his cousin, Oesedah, and him] to think about how animals were classified in the Dakota way.

"To what tribe does the lizard belong?" inquired Uncheedah upon one of these occasions. 'To the four-legged tribe,' I shouted. Oesedah with her usual quickness, flashed out the answer, 'It belongs to the creeping tribe.'

The Indians divided all animals into four general classes: 1st, those that walk on four legs, 2nd, those that fly; 3rd, those that swim with fins; 4th, those that creep. Of course I endeavored to support my assertion that the lizard belongs where I had placed it, because he has four distinct legs which propel him everywhere, on the ground or in the water. But my opponent claimed that the creature under dispute does not walk but creeps. My strongest argument was that it had legs; but Oesedah insisted that its body touches the ground as it moves. As a last resort, I volunteered to go find one and demonstrate the point in question. The lizard having been brought, we smoothed off the ground and strewed ashes on it so we could see the track. Then I raised the question, 'What constitutes creeping and what constitutes walking?'

Uncheedah was the judge, and she stated without hesitation, that an animal must stand clear of the ground on the support of its legs, and not in contact with the ground in order to be termed a walker; while the creeper is one that, regardless of its legs, if it has them, drops its body upon the ground. Upon having the judge's decision, I yielded at once to my opponent!" *

All methods of classification reflect particular ways of looking at the world and all methods include the bias we learn as members of particular cultures. This is as true of Western science as it is of Dakota classification schemes. The Linnaean method, for example, groups animals into hierarchies from lower to higher orders of existence. It is no coincidence that the notion of hierarchy mirrors the way European societies were structured. To see hierarchies in the natural world may very well be a reflection of the bias of our culture. By studying classification methods outside Western science, we come to appreciate the efforts all people have made to make sense of the natural world, we begin to recognize the bias of our own methods and in our comparison, we may come up with creative new ways to see our world.*

* From *Indian Boyhood*. Charles Alexander Eastman. Dover Publications. 1971.pp.64-67.