

Lesson Seven — Their Own Medicine

Objective: Students will learn about animals' use of plants, roots, and bark for medicinal purposes and will understand that animals' medical wisdom is but one of many ways they are our teachers.

Materials Required

Copies of the background information and the stories below to hand out to students

Film clips showing the intelligence of other species, preferably clips that can be easily understood without narration, or explained by the person leading the program

Background Information

Intelligence is not a measure of worth, yet it is often one of the reasons given for not caring for the wellbeing of other people and nonhuman species. Some beings, human and nonhuman, are incorrectly and unkindly labeled as "stupid," and their treatment at our hands reflects this label. When we look back in history, we are often shocked at our narrow view of who merits care, freedom, and inclusion in our community.

In Lesson Three, we looked at how easy it is to misjudge others. Scores on tests of intelligence and life skills are largely based on who is giving the test. Tested by your own culture, you would be rated as more intelligent than if were you tested by a culture with unfamiliar customs and language. For example, if you visited a place where young people grew up planting and harvesting rice, weaving baskets, or attaining other skills you did not learn while growing up, do you think people living there would consider you stupid because you did not know how to perform those tasks?

If a beaver were evaluating your intelligence, do you imagine that he would think you are very stupid for not knowing how to build a lodge, something he grew up learning how to do? If a dog were testing your intelligence, he would probably ask you to identify every creature who crossed your path by their scent. He would have no problem doing this, even if the creatures had crossed the path many hours before. If a bat were administering the test, he might ask you to very quickly make your way through the woods at night, when there is no light even from the moon, without bumping into anything. A donkey might assess how well you could find your way over unfamiliar territory without any guidance or a map.

If other species could speak a language humans understood, they would probably wonder why we choose to put toxic chemicals, fumes from vehicles and factories, and other poisonous substances into our own water and air and destroy the environment that is our home. They might wonder why we are not thoroughly familiar with the plants in our region and why we cannot identify which ones can be used for food or for curing illness. Perhaps they would question our intelligence.

Most species and cultures are good at doing whatever they need to do to survive. Elephants do not need to know how to paint a picture to survive in their world, but when elephants in Thailand paint pictures, people believe they may be intelligent. When birds speak a human language they do not need to speak to survive in their world, humans

think they may be intelligent. If a monkey or pig can play a computer game well, a skill they do not need in their natural world, humans believe they may be intelligent.

We seem to find it difficult to measure other humans or other species on their own terms. We often do not realize that other species are much better at learning our human culture and language than we are at understanding and learning theirs.

One of the many areas in which other species demonstrate intelligence is medicine. They are better at being their own doctor than most people.

Story One

Dogs sometimes eat foods that upset their stomach. All dogs know the specific type of grass that is the right medicine for their problem. A dog named Hope is allergic to grain. When he eats grain, he gets sick to his stomach. When this happens, he goes for a walk and searches for the right grass to help him. He eats the grass until it causes him to throw up the grain, after which he immediately feels better.

Story Two

When they are ready to give birth, female African elephants seek out and eat a particular species of tree to induce labor. A researcher in East Africa followed a pregnant elephant for more than a year and observed that the elephant followed a very strict, uniform diet and pattern of daily behavior until her pregnancy was almost at an end. Then she walked more than 27 kilometers in one day — many more than her usual 5 kilometers — to eat the leaves and bark of a particular tree (of the Boraginaceae family). Four days later, she gave birth to a healthy calf. The researcher discovered that Kenyan women brew tea from the leaves of this tree to induce labor. Many human cultures know to watch other species to learn from them what to do when they are sick.

Story Three

A WaTongwe woman in Tanzania crushed the leaves and stems of the mujonso, or "bitter leaf," tree brought to her by a fellow tribe member. Then she soaked them in a bowl of cold water, held her nose, and drank the bitter concoction. The medicine helped her heal from the intestinal pain from which she had suffered for days.

Nearby, in Tanzania's Mahale Mountain National Park, a chimpanzee suffered from diarrhea and low energy. She pulled a young shoot off a small tree called *Vernonia amygdalina*. After peeling away the leaves and bark with her teeth, she chewed on the shoot's juicy center, swallowing the juice and spitting out most of the fiber. She continued this for half an hour.

Both the woman and the chimpanzee suffered from an intestinal parasite, and both recovered within 24 hours. In case you haven't guessed, they both ate from the same species of tree.

Story Four

Cows have been seen licking nails in fence posts to supplement the iron in their system when they are iron deficient. Other animals, like deer, need sodium in their diet and do

not get it from their natural environment because they live where there is not enough sodium (salt) in the soil. When people put out blocks of salt, the animals know to come and lick the salt blocks.

Story Five

Twenty woolly monkeys live in Holland's Apenheul Zoo. Many medicinal herbs grow in their large outdoor enclosure. The monkeys only have access to plants that are completely different from the ones their relatives in the wild are able to access. Even so, they have managed to find plants that function as nutrition boosters and medicine. Their wild relatives forage only in trees, but those in the Apenheul Zoo also forage on plants on the ground. Faced with different insects, different soil, and different plants, they have managed to establish a perfectly balanced diet by foraging. They have even found a plant called nettles that boosts the immune system, and they will specifically search out and eat nettles when it is cold and raining. Humans use this same plant to boost their immune system.

Story Six

European starlings line their nests with special plants that protect them from parasites and pathogens in their environment. They use wild carrot, for example, which keeps new mites from laying eggs in their nests and kills those already there. The same mite-repelling chemical found in the wild carrot plant is also found in the margosa tree (*Azadirachta indica*). House sparrows use this plant to line their nests. Many Native American tribes use this plant as a tick repellent.

Story Seven

White-faced capuchin monkeys living on the edge of the Nicoya Peninsula in Costa Rica break open the fruits of a certain species of citrus plant and rub the pulp and juice from the plant into their fur. They also tear stems, leaves, and seedpods from pungent plants like *Clematis dioica*, *Piper marginatum*, and *Sloanea terniflora*, mix them with saliva, and rub them into their fur. These plants have healing and insect repelling characteristics. Many people in the area use these same three plants to treat skin irritations or repel insects.

American Brown Bears also manage to repel insects and cure stomach parasites and infections by chewing Bear Root (*Ligusticum porteri*). They make a paste of the plant, using their saliva, which they rub on their faces. According to the folklore of the Native American Navajo tribe, the bear, by his example, taught the tribe to use this root from the carrot family to treat stomach aches and infections.

A staple of lowland gorillas is a member of the ginger family, *Aframomum melegueta*, which some scientists say is a powerful antibacterial, antiviral, antifungal, and anti-inflammatory "natural drug," which may serve as a preventive medicine.

Story Eight

When rats are given a choice of healthy fruits and vegetables or unhealthy "junk" food, they always choose the healthy foods.

Story Nine

A woman in London, England, noticed that whenever she wore shorts, her normally calm, gentle dog would fuss and whine and try to bite her on the back of her thigh, always in the same spot. At that spot, there was a mole. The woman had many moles, but the dog seemed upset by that one in particular. Her doctor checked all her moles and decided to remove that one. Tests showed it was malignant and could have spread had she not had it removed. The doctor said a layperson would have seen nothing unusual about it.

Dogs can identify chemical traces by smell, in the range of parts per trillion. Previous studies have confirmed dogs' ability to detect cancerous melanomas by sniffing and their ability to detect other cancers by sniffing a person's breath.

Activity One:

Pass out copies of the background information and stories and call on individual students to each read a paragraph in class.

Ask students to define intelligence and wisdom. Are intelligence and wisdom the same or different? What is the same and what is different about them? The following questions will aid in the discussion:

- Is intelligence how well one can read or write or do mathematics?
- Is intelligence how well one can ride a bike, run, or take care of oneself?
- Is intelligence our ability to survive?
- Think of a person you consider to be intelligent. Why did you choose that particular person? What traits does that person possess that lead you to believe he or she is intelligent?
- Do you think people in some countries or cultures are more intelligent than others? Without saying which countries or cultures, explain why or why not.
- Think of an animal you would describe as intelligent and one you would describe as stupid or unintelligent. What experience have you had with these animals that makes you feel this way? If you have had no direct experience with these animals, where do you think you learned your attitudes about them?
- Do you think humans are more intelligent than nonhuman animals? Why or why not?
- Do you think some nonhuman animals are more intelligent than humans? Why or why not?

Activity Two

There are undoubtedly many plants that animals have learned to use as medicine of which we, humans, have not yet become aware. Many plants have not yet been tested for their potential benefits to humans and nonhuman animals. Seventy-five percent of the world's medicines for humans come from plants.

The rainforests of the world contain many plants that have never been tested for the potential benefits to all life.

Discuss the connection between medicines and rainforests being cut down. (When rainforests are cut down, we lose valuable medicines, and possibly some we have not yet discovered.)

Ask each student to research rainforest destruction and write a report on what is causing it, and what individuals can do to reduce their contribution to this destruction?

Activity Three

Ask the class to research the medicinal plants found in your region. If there is a local herbalist who knows the plants in your area, ask them to make a presentation to the class.

Other species often have the wisdom to heal themselves. Ask students:

- When you are sick, do you know which plants or minerals to eat?
- What do you do when you feel sick?
- What do the adults in your life do when they are sick?
- Who taught them what to do? (They may have to ask their parents and grandparents).

Resources

Story One:

Sikora, Rae. Personal account

Story Two:

Engel, Cindy. *Wild Health: Lessons in Natural Wellness from the Animal Kingdom*. New York: Houghton Mifflin, 2002.

Story Three:

Biser, Jennifer A. "Really Wild Remedies—Medicinal Plant Use by Animals." *Smithsonian Zoogoer*. January, February 1998.
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Story Four:

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Story Five:

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Story Six:

Debboun, Mustapha, Stephen P Frances, and Daniel Strickman, eds. *Insect Repellents: Principles, Methods, and Uses*. Boca Raton: CRC Press, 2006.

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Story Seven:

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<http://tinyurl.com/3u25za>

Story Eight:

Engel, Cindy. *Wild Health: Lessons in Natural Wellness from the Animal Kingdom*. New York: Houghton Mifflin, 2002.

Story Nine:

Lovgren, Stefan. "Dogs Smell Cancer in Patients' Breath, Study Shows." *National Geographic News*: January 12, 2006.
http://news.nationalgeographic.com/news/2006/01/0112_060112_dog_cancer.html
<http://tinyurl.com/33evbe>