



RELATIONSHIP OF HUMANS WITH ANIMALS

Background Information

The relationship between humans and animals is a complex one. Humans have used animals as a source of food, tools, and clothing for millennia, and yet, despite this dominance, animals are a source of inspiration for humans.

This section is divided into two subsections, Uses of Animals and Caring for Animals. Uses of Animals briefly reviews

the domestication of animals for human use and then looks at traditional and modern farming practices. It also looks at the effect of farming practices on animals in the natural environment. This subsection also reviews other ways in which humans use animals and introduces organizations that exist to protect animals against abuse or unnecessary exploitation by humans. The subsection ends with a look at vegetarianism and the reasons why some people choose not to eat meat.

The second subsection, Caring for Animals, looks at caring for three different groups of animals:

- wildlife in a wildlife preserve
- wildlife in a rehabilitation center
- fish, mammals, and crustaceans in an aquarium

For information on caring for pets, classroom animals, zoo animals, and farm animals see the NAMC Lower Elementary Zoology Manual.

Uses of Animals

Humans have a complex relationship with animals and use them for a variety of purposes. There are working animals, companion animals, animals used for scientific research, and animals used for food and byproducts.

The relationship with animals extends back to the earliest humans. As the students probably know from their study of history, early humans obtained their food by gathering plants and hunting animals. These early humans used animals not only for food,

but also for clothing and to make shelters. Over time, they learned to make tools and weapons from bone and stone, which helped them to catch and process the animals into the items they needed for survival.

As humans developed their skills, they started building simple dwellings, planting and harvesting crops, and domesticating animals. They domesticated animals by catching and raising the young of herbivores like sheep or goats that they could use for milk or meat. These small herbivores were easy to manage and control, and they were easier to feed and less dangerous than carnivores. Early farmers kept the animals in herds and bred them, providing farmers with a continuous supply of animals.

Later, when humans realized they could use animals for carrying people and objects from one place to another, they began domesticating larger animals. These became working animals. They carried people and objects, and they pushed and pulled heavy farm equipment, such as ploughs for tilling the land. In addition, humans found certain animals, such as cats, dogs, and birds, suitable as pets. These animals became part of people's everyday lives.

Farming

Farming practices evolved over time, advancing as technology advanced. By the 1920s, the farm tractor replaced animals for performing many heavy farm duties. Numerous technological advances followed the arrival of the gas-powered tractor and made farming activities much easier. This meant farmers were able to

farm larger and larger areas of land and more and more animals. The result, in many parts of the world, is that modern, highly mechanized farms have replaced traditional family farms.



Farm tractor

Traditional family farms are farms where a family manages the farm and carries out most of the farming duties. The family grows several crops and farms a small number of various animals. Together, these provide the family with most of their food needs. The surplus, what is left over, they sell.

Historically, farmers did not have manufactured fertilizers and pesticides, and they had to take good care of the land, so they could use it for many years. They used manure from the farm animals as fertilizer and rotated their crops, meaning they did not plant the same crop on a piece of land two seasons in a row. Rather, they alternated two or more crops, so that the nutrients in the land were not depleted.

While modern farming practices have largely replaced traditional farming methods, traditional farming still occurs in a number of regions. In some cases, using

traditional methods is a matter of choice, and in others it is a matter of necessity.



Horse-drawn farm equipment

For the **Amish**, North American Mennonite communities that follow a simple lifestyle and reject modern technology, traditional farming is a way of life. These communities provide an excellent example of traditional farming that is successful. For these communities, traditional farming is a lifestyle choice that is viewed as the honorable way to treat the land. The Amish farm a diversity of crops and animals, rotate their crops, use manure as fertilizer, and do not use modern farming machinery. They grow high quality produce primarily for their own consumption, and then preserve (via canning) and sell what food remains.

Traditional farms still exist in many of the poorer countries of Africa and South East Asia, but while these are traditional farms in the sense that the farmers do not use modern farming techniques, the majority of the farms barely support the families farming them. These farmers are known as subsistence farmers. Farming, for them, is a matter of eating or starving, and traditional

farming is a necessity, rather than a choice, because they do not have access to modern farming methods.

In contrast to traditional farming, modern farming takes place on a very large scale, and generally, only one type of animal or crop is farmed. Farm equipment is mechanical and farmers use electronics to control some feeding systems. Fertilizers, pesticides, and irrigation systems help crops to grow fast and produce high yields. In many cases, family farms have been replaced by something called agribusiness. **Agribusiness** describes farms operated by business rather than by farmers. It includes producing, processing, and distributing farm products on a large scale instead of producing the cash crops that traditional farms produce. This type of farming is often referred to as **factory farming**.

Farming has a significant impact on the natural environment, and therefore, on animal habitat. The most obvious impact is that clearing the natural vegetation to make space for farmland destroys the natural environment, and in turn destroys animal habitat, forcing the animals to find other areas to live. Most people, however, accept this habitat destruction because farms produce the food essential for human survival. The more contentious issues are modern farming practices and their impact on the environment.

In much of the developed world, farming has changed drastically over the past century. New farming practices have resulted in more food being produced per person in the world than ever before. In many ways this is a very good thing, but it has come at a heavy price to the

environment, and there is ongoing debate about how best to meet the world's food needs without further damaging the environment.

Here are four modern farming issues that relate to animals:

- Pesticides used on a large scale effectively kill the insect pests attacking the crops, but they also kill everything else near the crops, including birds that eat the poisoned insects. Not only do pesticides create an imbalance between species, but they also create a void — an area where there are no insects — and this means that other pests can move into the area when the toxicity of the first pesticide wears off. This creates the need for more and more pesticides and is called the **pesticide treadmill**.
- Synthetic fertilizers applied to farmlands make crops grow larger and faster. Billions of tons of fertilizer are used annually in the US alone and much of this is not taken up by the plants. What remains leaches through the soil or washes into the natural water systems. It pollutes rivers, lakes, and the sea, causing aquatic plants and algae to grow too fast. This upsets the ecological balance of the aquatic habitats, and when the algae die, microorganisms decompose it and consume valuable oxygen in the water. This can have a disastrous effect on fish and on entire habitats such as coral reefs.
- Animals in feedlots can cause a problem similar to fertilizer use. Unlike traditional farms, where the animals being raised for meat graze pasture, **feedlots** are confined areas where animals are provided with food and do not have large areas to roam. Feedlots contain far more animals per acre than do grazing pastures. These animals produce large amounts of manure, which like other fertilizer, has a high concentration of nitrogen that can pollute natural water sources.
- Crop irrigation is an essential part of farming, but it needs to be handled responsibly because it damages natural water sources. Many of the new high-yielding crops need large amounts of water. To meet the water needs of these crops, natural sources of water are dammed or water is drawn directly from natural sources. Both situations cause serious damage to animals and their habitats.



The following example shows part of a self-testing sheet teachers can create for students to review farming. The sheet can be created using the template in the Templates for Teachers section of this manual.

Self-testing review sheet: Farming

Student name: _____

Date: _____

1. Cover the right-hand column before you start.
2. Complete each of the lists or sentences in the left-hand column by writing the missing words in the spaces provided.
3. Uncover the right-hand column to check your answers.

By the 1920s the farm _____ replaced animals for performing many heavy farm duties.	tractor
_____ are farms where a family manages the farm and carries out most of the farming duties.	Traditional family farms
Traditional farming involves farming a _____ of products.	variety (or number)
_____ communities in North America choose to farm using traditional methods and produce quality farm products.	Amish (or Mennonite)
Modern farming generally takes place on a _____ scale and farms only _____ type of animal or crop.	large, one
_____ describes farms operated by business rather than by farmers.	Agribusiness

No one disputes the need to produce food through farming, but there is a strong outcry from environmental groups for farming to take place in an environmentally responsible fashion. Unfortunately, the needs of the environment often conflict with the need for agribusiness to generate profits for shareholders.

Animal uses

Humans use animals for many purposes other than for food. **Animal byproducts**, which include animal skins, bones, and

secretions not used as food, have all been valued by people around the world for thousands of years. As these uses are covered in detail in the NAMC Lower Elementary Zoology Manual, the following list is a summary of the main uses humans have for animals:

- clothing: fur, wool, and leather for shoes, handbags, and saddles
- jewelry: pearls from oysters and the abalone shell for earrings and pendants

Summary of animal byproducts

Clothing	Jewelry	Fertilizer	Healing Remedies
fur	pearls	fishmeal	snake venom
wool	abalone shell	bone	fish oil
leather	ivory	manure	
feathers	bone		

- fertilizer: fishmeal, bones, and manure
- healing remedies: snake venoms form the basis for some medications

Another use for animals is scientific research. This is a highly controversial subject and one for which there appears to be no immediate solution. New procedures and medications are usually tested on animals before they are used on humans. Many of these procedures and medications are not successful and many cause more harm than good. Animal rights activists argue that animals should not be used in this way, and scientists argue that this is the only way to ensure the safety of products and procedures before using them on humans. Research animals, they say, have contributed to many dramatic medical advances, and this is, no doubt, true. Nonetheless, the research animals are kept captive and are subjected to unpleasant treatments, which many people find unacceptable.

The debate about using animals for research is likely to continue, and while the medical profession may be able to justify using animals for research, many people believe the cosmetics companies cannot

justify testing their products on animals. One step that people who wear makeup or perfumes can take is to purchase only those brands that advertise they are not tested on animals.

The ethical issues that surround the use of animals by humans have given rise to animal protection organizations. These organizations range from agencies that regulate how animals should be treated, to animal welfare organizations, to animal rights organizations. They include government agriculture agencies, the Society for the Prevention of Cruelty to Animals (SPCA), People for the Ethical Treatment of Animals (PETA), the National Wildlife Federation, and many, many others. Some organizations campaign to protect specific animals such as gorillas or whales, some protect groups of animals such as domestic animals or wildlife, and others campaign against a particular activity such as seal hunting or using animals in scientific research.

Vegetarianism

A large number of humans do not use animal byproducts or eat meat, even though humans are generally considered to be omnivores. People who choose not to eat

animals and consume only vegetables, fruit, and legumes are referred to as **vegetarians**.

There are different types of vegetarians and they are referred to by different names, depending on whether or not there are any animal products in the person's diet.

- **Lacto vegetarians** avoid eggs and meat, but do eat dairy products.
- **Lacto-ovo vegetarians** avoid meat, but eat eggs and dairy products.
- **Ovo vegetarians** avoid meat and dairy products, but eat eggs.
- **Vegans** avoid eating all animal products and generally avoid using animal byproducts.

Did you know?

The terms that describe different types of vegetarians are derived from Latin words. Most of the terms were constructed by adding Latin prefixes to the root word, vegetarian. Here are some of the Latin derivations:

- lacto- is a prefix derived from the Latin word, lactis, meaning milk
- ovi- is a prefix derived from the Latin word, ovum, meaning egg
- pesce is the Latin word for fish
- pollo is the Latin word for chicken

Using these translations, a lacto-ovo vegetarian, for example, is someone who eats vegetables, milk, and eggs.

- **Pesco-pollo vegetarian** avoid red meat, but eat fish and chicken. They are also called **semi-vegetarians** because they eat some animals, but not others.

Vegetarians choose not to eat meat for a variety of reasons. These include:

- religious beliefs
- ethical beliefs
- low income
- environmental reasons
- health reasons

Most of the world's vegetarians choose not to eat meat for religious reasons. Hinduism, Buddhism, and Sikhism are religions that teach that all life is sacred and should not be injured or harmed. As a result of this teaching, followers of these religions generally do not eat meat. Hindus, alone, account for 80 percent of India's population of over one billion people, and possibly, for about 800 million vegetarians.



Indian fruit and vegetable market

For many people, ethical beliefs are closely tied to their religious beliefs, and so it is difficult to say whether they are vegetarians for religious or ethical reasons. There are, however, people who are not followers of any particular religion, but who believe that it is wrong to kill animals for any reason.

The cost of meat is an issue for some people and meat is expensive in comparison with vegetables. Animals raised for meat have to be fed and cared for until they are large enough to slaughter, and raising, feeding, and caring for animals costs money. In poorer countries, where

people struggle to feed their families, meat is a luxury item. A family in a poor part of Africa, for example, that owns a female goat, would not use the goat for meat because, once the meat has been eaten, the goat is gone and has no more value. The goat has more value to the family if it stays alive and continues to supply them with milk over a long period.

Some vegetarians choose not to eat meat, not because they have strong beliefs about animals, but because they believe that the process of producing meat for people to eat damages the environment. These people

The following example shows part of a self-testing sheet teachers can create for students to review vegetarianism. The sheet can be created using the template in the Templates for Teachers section of this manual.

Self-testing review sheet: Vegetarianism

Student name: _____

Date: _____

1. Cover the right-hand column before you start.
2. Complete each of the lists or sentences in the left-hand column by writing the missing words in the spaces provided.
3. Uncover the right-hand column to check your answers.

People who do not eat animal products are referred to as _____.	vegetarians
Lacto vegetarians avoid eggs and meat, but do eat _____.	dairy products
Ovo vegetarians avoid meat and dairy products, but eat _____.	eggs
_____ avoid eating all animal products and generally avoid using animal byproducts.	Vegans
There are five main reasons why people choose not to eat animal products. One is religious beliefs. The other four are: _____, _____, _____, _____.	ethical, economic (low income), environmental, health

will not eat farmed meat, but may be willing to eat meat that has been hunted or caught legally in the natural environment.

The final group of vegetarians chooses not to eat meat for the simple reason that they believe they are healthier living on a diet of fruits and vegetables.

Resources

There are many excellent resources about how people use animals and vegetarianism. Here are a few examples:

- Bellville, Cheryl. *Farming Today Yesterday's Way*. Minneapolis, MN: Carolrhoda Books, 1994.
- Bowden, Rob. *Sustainable World — Food and Farming*. Chicago, IL: KidHaven Press, 2003.
- Calvert, Samantha. *We're Talking About Vegetarianism*. East Sussex, UK: Wayland, 1997.
- Kallen, Stuart A. *Is Factory Farming Harming America?* Chicago, IL: Greenhaven Press, 2006.
- Perry, Philippa and Caroline Grimshaw. *How to Be Animal Friendly*. Minneapolis, MA: Element Children's Books, 1999.
- Ryden, Hope. *Out of the Wild: The Story of Domesticated Animals*. New York, NY: Lodestar Books, 1995.
- Thomson, R. *Farming*. London: England. Franklin Watts, 2004.
- Twinn, Michael and Arlette Lavie. *Who Cares About Animal Rights?* Wiltshire, England: Child's Play International, 1992.



ACTIVITY 1

Investigating Farming with Animals



Purpose

To learn how animals are used in farming, and to understand the differences between traditional and modern farming practices.

Material

Whiteboard and marker.

Self-testing review sheet on farming.

Books, pictures, and movies about animals and farming.

Zoology journals and pencils.

Presentation

- Most Montessori teachers present this concept in Years 4 and 5.
- Use the whiteboard to highlight items discussed comparing traditional and modern farming practices.
- Announce to the students that in this activity they will have the opportunity to explore aspects of farming with animals, including the differences between traditional and modern farming methods.
- Review with the students the story of humans as they evolved from hunter-gatherers to farmers. Include the reasons animals were farmed and how they were used on farms.
- Define and discuss the term “traditional family farm.”

- Discuss traditional farming in poor countries and traditional farming among Mennonite communities.
- Explain how the gas-powered tractor and other technology changed the nature of farming by reducing the need for animals to pull farm equipment and allowing farming to take place on a large scale.
- Define and discuss the term “agribusiness.”
- Demonstrate the self-testing review sheet and encourage the students to complete the sheet.
- Demonstrate the resource materials.
- Ask the students to use the resource materials and the information on the whiteboard or on the review sheet to write two or three illustrated paragraphs in their journals on the differences between traditional family farming and modern farming.

Extensions

- Visit a traditional family farm.
- Compare a small US family farm with one in Africa.



ACTIVITY 2

Exploring Farming Issues Related to Animal Habitat

Purpose

To learn how modern farming practices can affect animals in the natural environment.

Material

Whiteboard and marker.

Books, pictures, and movies about animals and farming.

Zoology journals and pencils.

Presentation

- Most Montessori teachers introduce this concept in Year 6.
- Announce to the students that in this activity they will have the opportunity to explore and debate the ways in which modern farming practices can affect animals in the wild.
- Review the differences between traditional and modern farming practices.
- Discuss some of the issues surrounding modern farming practices. To facilitate the discussion, create a chart on the whiteboard. Write the heading “Modern Farming.” Beneath it, create two columns with the headings “Positive effects” and “Negative effects.”
- Discuss with the students how modern farming practices have increased food production in the world. Under the subheading “Positive effects,” write “more food.” Explain that while this is a positive effect, the negative side of modern farming practices is that they damage the environment.
- Describe how some modern farming practices affect animals in the natural environment, using the following examples: pesticides, manufactured fertilizers, feedlots, and irrigation. List these items under the subheading, “Negative effects.”
- Invite the students to debate the positive and negative effects of modern farming practices. They may wish to add to the



lists on the board and to draw from their background knowledge on world population increases for the debate. (Note: The list of positive effects will probably be short, but it is possible to argue that the increase in food production more than justifies a number of the negative effects.)

- Demonstrate the resource materials and encourage the students to explore them.

- Ask the students to use their journals to write an essay where they choose a position, and argue either for or against modern farming practices. Ask them to begin with a thesis statement, followed by several paragraphs supporting their thesis, and end with a conclusion.

Extension

- Investigate one issue related to modern farming practices, such as feedlots.



ACTIVITY 3

Exploring Animal Use and Protection



Purpose

To learn how animals are used and protected.

Material

Whiteboard and marker.

Chart, Summary of animal byproducts.

Computers with Internet connection (one for each group of students).

Zoology journals and pencils.

Presentation

- Most Montessori teachers present this concept in Years 5 and 6.
- Announce to the students that in this activity they will review how humans use animals and will explore organizations that exist to ensure animals are not abused.

PART 1: USING ANIMALS

- Discuss the uses of animals: working animals, companion animals (pets), animals used for food and other products, and animals used for scientific

research. List these on the whiteboard.

- Discuss each use individually, using the chart, Summary of animal byproducts, as a guide.
- Discuss with the students the ethical issues surrounding animal use. Encourage the students to share their views about using animals for research, byproducts, food, or work.
- Ask the students to use their journals to list the four main uses of animals and then to write a paragraph about each use.

PART 2: PROTECTING ANIMALS

- Explain that many organizations exist to protect animals and to ensure that when humans use animals they do not abuse them. Discuss some of these organizations, both governmental and non-governmental. Are there any animal welfare or animal rights organizations active in the local area?

- Ask the students to work in groups of two or three and to do an Internet search for animal rights or animal welfare organizations. Encourage them to create a list of organizations they find.
- Ask the students to visit the websites of two larger organizations that are active nationally and locally (e.g., the SPCA or PETA) and to find out how these organizations help animals.
- Ask the students to use their journals to document information (as a bulleted list) about the organizations they researched.

Extension

- Research one local animal welfare or animal rights organization and write a paragraph about the work of the group, how people can become involved with the group, and how the group can be contacted.

ACTIVITY 4

Understanding Vegetarianism

Purpose

To learn about vegetarianism.

Material

Whiteboard and marker.

Self-testing review sheet.

Books about vegetarianism and vegetarian recipe books.

Zoology journals and pencils.

Presentation

- Most Montessori teachers present this concept in years 4 and 5.
- Explain to the students that in this activity they will learn about vegetarianism and why some people choose to be vegetarians.
- Write the word, vegetarian, on the whiteboard. Ask the students if they can describe what it means to be a vegetarian.
- Ask if any of the students and their families are vegetarians. If there are vegetarians in the group, ask if they would like to tell the group what foods they eat.
- Discuss the different types of vegetarians (e.g., lacto-ovo vegetarians, pesco-pollo vegetarians, vegans) and explain the terms. Write each term on the whiteboard.



- List the reasons why some people choose vegetarianism. Write the list (religious beliefs, ethical beliefs, low income, environmental reasons, health reasons) on the whiteboard.
- Demonstrate the self-testing review sheet and encourage the students to complete the sheet.
- Demonstrate the resource materials.
- Ask the students to use the resource materials to find a vegetarian recipe that appeals to them and to write and illustrate the recipe in their journals. Ask them to say what types of vegetarians would eat this meal and then to write a bulleted list stating what they would add or remove from the recipe to make it suitable for other types of vegetarians.

Extensions

- Research other types of meat-restricted diets such as raw food vegans and fruitarians.
- Prepare a vegetarian meal for the group.