

The Cutest Camelid

Objective

Students will read about alpacas. Students will create fact sheets about alpacas. Students will create flip book showing alpaca needs. Students will compare and contrast alpaca fiber with sheep and goat fiber.

Background

An alpaca is a domesticated species of South American camelid. Other camelids include llamas, vicuna, and guanaco. An alpaca looks like a llama but it is much smaller and not as strong. Llamas were bred to be pack animals and to guard herds of sheep. Alpacas were bred for their fiber. The fiber is used to make knitted and woven items like blankets, sweaters, hats, gloves, scarves, and more.

The alpaca comes in two breed-types: huacaya (pronounced wah-KI-ah) and suri (SOO-ree). Huacayas, the more common type, account for about 90 percent of all alpacas. They have fluffy, crimped fleece that makes them look like Teddy bears. Suris grow silky, lustrous fleece that drapes gracefully in beautiful pencil-locks.

Alpacas have been domesticated for thousands of years. We know because the ancient Moche people of the Andes Mountains in northern Peru used alpaca images in their art. The Incas raised alpaca for their fleece. The fleece was reserved for the elite and nobility. The Incas used cloth spun from alpaca fiber as currency. Wages were paid in cloth.

There are no known wild alpacas. Its closest living relative, the vicuña, is the wild ancestor of the alpaca. The alpaca is larger than the vicuña but smaller than the other camelid species.

Alpacas have two sets of teeth for processing food. They have molars in the back of the jaw for chewing cud. But in the front, the alpaca has teeth only on the bottom and a hard gum (known as a dental pad) on the top for crushing grain, grass, or hay.

Alpacas are typically sheared once per year in the spring to keep them cool in summer. Each shearing produces five to ten pounds of fiber per alpaca. An adult alpaca might produce 50 to 90 ounces of first-quality fiber as well as 50 to 100 ounces of second- and third-quality fiber.

Alpaca fiber is stronger, lighter, warmer, and more resilient than sheep's wool. Finer grades of alpaca fiber do not irritate the skin as sheep's wool sometimes does. Unlike sheep's wool, alpaca fiber contains no lanolin and is therefore easier to clean. Alpaca fiber comes in a rainbow of natural colors—pure white, several shades of fawn and brown, several shades of gray and true black—some 17 official colors with many other shades and hues.

Alpacas have very strong herding instincts and need the companionship of other alpacas to thrive. They are a small, almost odorless and easy to maintain due to their quiet and docile nature. They establish easy-to-manage, communal dung piles. Alpacas need basic shelter and protection from heat and foul weather, just

Oklahoma Academic Standards

KINDERGARTEN

Speaking and Listening:
R.1,2,3,4; W.1,2. Reading
and Writing Process: R.1,3;
W.1,2. Critical Reading and
Writing: R.3,4; W
Life Science: 1-1

GRADE 1

Speaking and Listening:
R.1,2,3,4; W.1,2. Reading
and Writing Process: R.1,3;
W.1,2. Critical Reading and
Writing: R.3,4,5; W.1,2
Life Science: 1-1

GRADE 2

Speaking and Listening:
R.1,2,3,4; W.1,2. Reading
and Writing Process: R.1,3;
W.1,2. Critical Reading and
Writing: R.3,4,5; W.1,2
Life Science: 1-1,2

GRADE 3

Speaking and Listening:
R.1,2,3; W.1,2. Reading
and Writing Process: R.1,3;
W.1,2. Critical Reading and
Writing: R.3,4,5; W.1,2
Life Science: 2-1;4-2. Earth
Systems:1

Additional online resources

<http://www.alpacainfo.com/academy/about-alpacas>

<http://www.alpacafarm.com/kids.html> (games)

Ag Career: Alpaca Rancher

Alpaca ranching is usually not the main source of income for an alpaca rancher. However, many alpaca ranchers earn extra income through retail stores on or off their farms.

An alpaca's fleece is sheared once a year, and that raw fleece is made into "roving"—fleece that has been washed and carded and prepared for spinning. Alpaca owners who can prepare the roving themselves earn more per ounce for their fleece. Owners who can spin the roving into yarn can increase the value again. Those able to take the yarn and weave or knit it into a rug, hat, sweater, blanket, or some other product, make the most money from fleece. They sell their products directly to consumers who visit their farm or over the Internet. Many also sell through craft fairs, farmers markets, and retail sites.

The greatest profits are often from the sale of alpaca babies, or crias.

like other types of livestock. Their toenails need to be trimmed occasionally to ensure proper foot alignment and comfort. Alpacas do not have hooves. Instead, they have two toes, with hard toenails on top and a soft pad on the bottom of their feet. Adults are called male and female. Babies are called "crias." Females have only one baby at a time.

Humming is the most common sound alpacas make. They hum when they are curious, content, bored, fearful, distressed or cautious. When startled or in danger, a staccato braying is started by one animal then followed by the rest of the herd in the direction of the potential threat. Male alpacas also "serenade" females during breeding with a guttural, throaty sound called "orgling."

Procedures

1. Read and discuss background and vocabulary.
2. Students will create a fact sheet about alpacas with the alpaca's basic needs, how they are met, where they live, and illustrations.
3. Discuss some of the alpaca's characteristics described in the background. List the characteristics on the chalk board (sweet, docile, odorless, small)
—Students will work in groups to write short skits about alpacas to illustrate some of their characteristics (humming, alerting others to danger, chewing cud, etc.)
4. Discuss what animals need (food, water, shelter, space) and make a list on the board. Ask what alpacas need?
—Students will create flip books showing alpaca needs.
5. Discuss adaptations in relation to alpacas and llamas. What are the adaptations that make llamas different from alpacas? (Llamas are bred to be beasts of burden while alpacas are bred for their fiber.)
6. Provide students with copies of the Alpaca Digestive System page included with this lesson.
—Students will trace the route of food through the system with their fingers as you read the explanation.

Vocabulary

abdomen— the part of the body that contains the stomach and other organs

absorption— the act of taking in (something, such as a food) in a natural or gradual way

bray— to produce a sound like the call of a donkey

bred— to produce (plants or animals) by sexual reproduction

camelid— any of a family (Camelidae) of 2-toed ruminant mammals having a 3-chambered stomach and including the camels, llamas, alpaca and vicuña

cecum— the first portion of the large bowel, which is situated in the lower-right quadrant of the abdomen

cellulose— a substance that is the main part of the cell walls of plants

colon— the main part of the large intestine

contraction— a movement of a muscle that causes it to become tight

cud— food brought up into the mouth by some animals from the rumen to be chewed again

currency— money in circulation

digestive— having to do with the process by which food is changed to a simpler form after it is eaten

docile— easily taught, led, or managed

domesticated— adapted to living with human beings and serving their purposes

enzyme— a chemical substance in animals and plants that helps to cause natural processes (such as digestion)

esophagus— the tube that leads from the mouth through the throat to the stomach

fecal— solid waste that is released from the body

fermentation— a chemical change that results in the production of alcohol

fiber— a thread or a structure or object resembling a thread

gastric— of, relating to, or located near the stomach

indigenous— produced, growing, or living naturally in a particular region or environment

microorganism— an extremely small living thing that can only be seen with a microscope

modified— changed some parts of (something) while not changing other parts

nutrient— a substance that plants, animals, and people need to live and grow

regurgitate— to bring food that has been swallowed back to and out of the mouth

rumen— the large first compartment of the stomach of a cud-chewing mammal (as a cow) in which cellulose is broken down by the action of microorganisms and in which food is stored prior to chewing

saliva— the liquid produced in your mouth that keeps your mouth moist and makes it easier to swallow food

species— a category of living things that ranks below a genus, is made up of related individuals able to produce fertile offspring, and is identified by a two-part scientific name

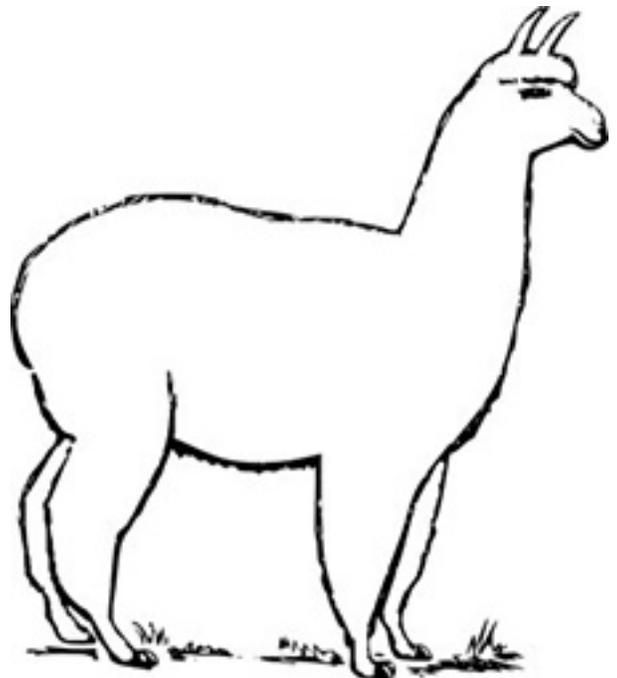
spontaneous— done in a natural and often sudden way and without thought or planning

staccato— made up of rapid disconnected elements or sounds

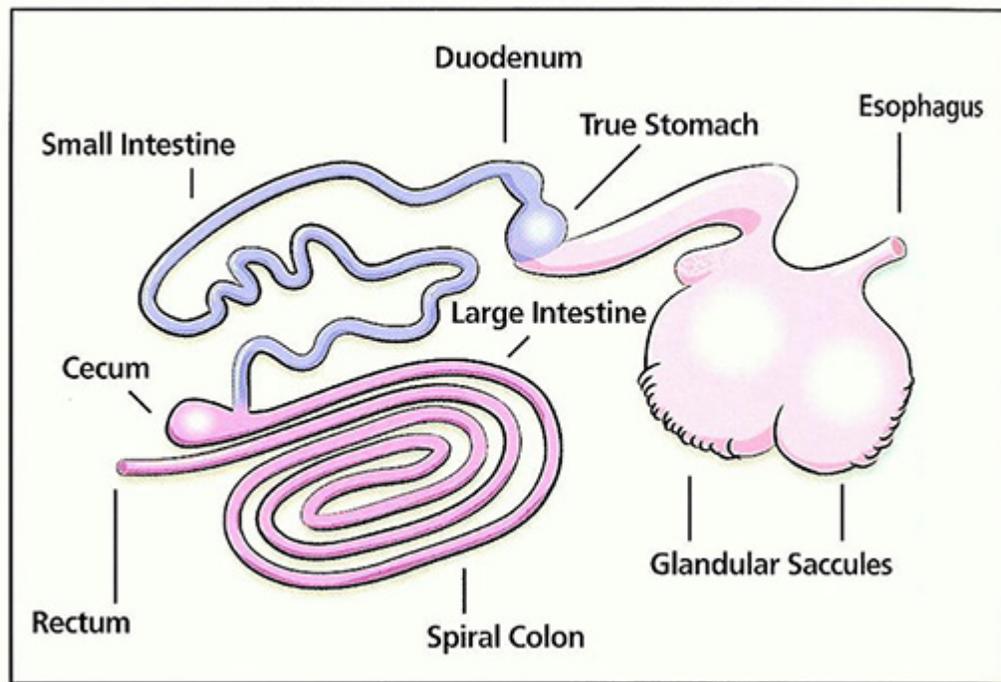
tubular— having the form of a tube

volume— the amount of space that is filled by something

wages— payment for work or services usually calculated on an hourly, daily, or piecework basis



Alpaca Digestive System



Alpacas are modified ruminants. Their forestomachs are made up of three compartments rather than the true ruminants' (sheep, goats, cattle, deer) four. Ruminants' digestive systems are very different from human digestive systems. The three sections of alpacas' forestomachs are called C-1, C-2 and C-3; each compartment has a specialized job to perform.

C-1, located on the animal's left side, is the largest (and first) compartment; it makes up roughly 80 percent of the stomach's total volume. C-1 secretes no digestive enzymes. It contains friendly microorganisms that change cellulose into digestible nutrients. Newly eaten feed mixed with saliva comes into C-1 by the esophagus, then fermentation begins. Coarse bits of feed are regurgitated, rechewed and then reswallowed. This is what is known as rumination or chewing the cud. Additional chewing reduces particle size and adds more saliva. Saliva helps combat acid production during fermentation. The average healthy alpaca ruminates about 8 hours a day.

Ingested material stays in C-1 for about 60 hours, where it is continually mixed by strong, spontaneous contractions of the forestomach. The material next moves into C-2, where some absorption of nutrient occurs. Then it goes into compartment C-3.

C-3 is a tubular organ running alongside C-1 on the right side of the abdomen. It holds 11 percent of the forestomach volume. The last 1/5 of this tube contains true gastric glands, so C-3 is sometimes called the true stomach.

Further digestion occurs in the small intestine. Material then presses on to the cecum and spiral colon, where vitamins, minerals and water are absorbed and fecal pellets are formed of the remaining waste and eventually eliminated.

Source: <http://alpacasofmontana.blogspot.com/2013/03/the-alpaca-digestive-system.html>

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