

Hoofed Animals

A Reading A-Z Level W Leveled Book
Word Count: 1,342

Connections

Writing

Create a Venn diagram comparing one odd-toed ungulate with one even-toed ungulate. Write a paragraph summarizing the information.

Science

Use the book and outside resources to create a model of the habitat of one animal from the book. Label your model to show how the animal is able to survive in its environment.

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HOOFED ANIMALS



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Focus Question

What are ungulates?

Words to Know

browsers	herbivores
cannon bone	keratin
carnivores	omnivores
domesticated	successful
fused	ungulates
grazers	

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WHAT ARE HOOFED ANIMALS?

Hoofed animals are among the most graceful creatures on Earth. Large, powerful, and designed for speed, they are beautiful and fascinating. In addition to admiring them in the wild, humans



A gazelle

have visited them in zoos, hunted them, and kept them as sources of milk, meat, wool, labor, transportation, and companionship.

Hoofed animals all belong to a group of mammals called **ungulates** (UN-gyu-luts). All modern ungulates are related to an extinct group of hoofed mammals that lived 65 million years ago. Ungulates have hooves made of a material called **keratin** covering their toes. Hooves are like

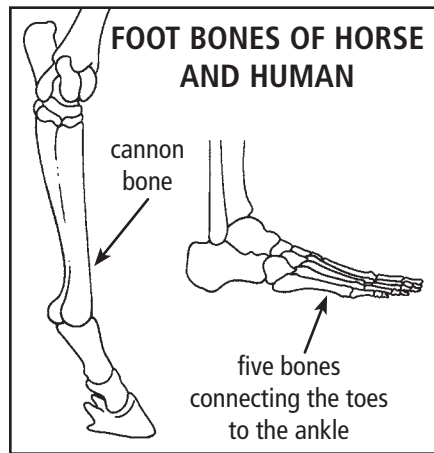
giant toenails that serve as protection for their feet.



Horses have worked for humans for thousands of years.

Most hoofed animals are **herbivores** (plant eaters), and many of them are food for **carnivores** (meat eaters). One of their primary challenges in life is to flee fast enough to avoid being killed by predators such as humans, lions, wolves, and hyenas. Because they need to run, hoofed animals have long, strong legs and feet.

Hoofed animals' skeletons are specially shaped to help them run quickly. A human foot has five separate bones connecting the toes to the ankle, but many hoofed animals instead have one long, solid bone connecting the toes (hoof) to the ankle. This solid bone, called a **cannon bone**, makes hoofed animals' legs longer to help them run farther and faster. The cannon bones also make hoofed animals' legs more solid and stable to better support their weight.



Scientists place hoofed animals into two different groups based on whether the animals walk on an odd or even number of toes. We'll look at these two groups separately, including some well-known members of each group.



Rhino



Horse



Zebra



Donkey

ODD-TOED UNGULATES

Odd-toed ungulates include rhinoceroses, horses, zebras, donkeys, and several other animals. Rhinos have three toes on each foot, while the horselike ungulates have just one toe (their hoof) on each foot.

These animals primarily inhabit warm environments around the world. They live in a variety of habitats, including forests, grasslands, and deserts. The food they eat—grasses and other plants—is difficult to digest, and their stomachs require the assistance of tiny bacteria to break it down.



Horses—The only truly wild horses alive today inhabit the dry grasslands of Eurasia. The “wild” horses living in North

and South America and Australia actually are **domesticated** breeds that have escaped human control and grown wild. Horses can survive in environments with little food and water, but they must spend most of their time grazing to take in enough grass—and nutrients—to survive.

Before machinery became commonplace, horses pulled wagons and plowed fields. In modern times, horse lovers keep them for companionship, riding, and racing.



Racehorses thrill us with their speed.

Zebras—All wild zebras live in Africa, and they primarily eat tall grasses. Aside from their famous stripes, zebras are similar to horses in appearance. The main enemies of zebras are lions, hyenas, and wild dogs, as well as humans who hunt them for their skins. There are three main kinds of zebras: plains, desert, and mountain zebras. Some species of zebras are severely endangered.

Do You Know?

A zebra’s bold black-and-white stripes are a form of camouflage. The stripes help it to blend in with other zebras, especially when the entire herd is running. By blending in, a zebra is less likely to be singled out by a predator.

A zebra’s stripes are as unique as human fingerprints. No two zebras’ stripes are alike!





Rhinos are rare and unusual.

Rhinoceroses—The rhino, which is native to parts of Africa and Asia, is another ungulate that is seriously endangered. Few rhinos are still alive in the wild; most now live on protected land, including national parks and nature preserves. Rhinos live on plains and in forested and swampy areas, where they consume grasses, leaves, and other plants.

Rhinos are the second-largest land mammals after elephants. Rhinos are easy to recognize by the horns on their noses, their large heads, and their massive bodies covered with dark, leathery skin. Rhino horns are made of keratin, the same material as hooves. Some kinds of rhinos have one horn, while other kinds have two.



Camel



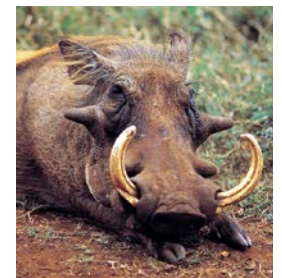
Hippo

EVEN-TOED UNGULATES

Even-toed ungulates are a large group of animals that includes deer, cattle, sheep, goats, antelope, camels, hippos, and giraffes. Some even-toed ungulates, such as camels, have only two toes on each foot, while others, such as hippos, have four toes on each foot.

Even-toed ungulates, one of the most numerous groups of mammals on Earth, are native to every continent except Australia and Antarctica. They are what scientists call “**successful**” animals, meaning they have reproduced, spread out, and adapted to a wide variety of environments.

Pigs and hogs, called *swine*, are intelligent **omnivores** (eating both plants and animals) with round, stocky bodies, long heads with a flexible snout, and tusks that point up. They have four toes on each foot, with the middle two being the largest. Swine originally lived in the wild in Europe, Asia, and northern Africa.



Warthog

They are now raised throughout the world as a food animal and are hunted in the wild.



Giraffes are inhabitants of African grasslands that have permanent short, bony horns covered by furry skin that is never shed. Giraffes are famous for their unusually long necks, their

pattern of spots, and their long blue-gray tongues. Male giraffes compete with each other for dominance by wrestling with their necks and hammering each other with their heads.

Hippos are large, heavy African animals that spend most of their time in water. They don't really swim, but instead walk on the bottoms of lakes and rivers. They have slightly webbed feet with four toes and huge teeth that point up. Their herbivorous diet consists of grasses, leaves, fallen fruit, and other plants, most of which grow underwater.

Do You Know?

An adult hippo can eat up to 136 kilograms (300 lb.) of plants in a single day! That's like you eating more than 1,200 veggie burgers a day.



Camels are large herbivorous animals that have long, curved necks, one or two humps on their backs, and two toes on each foot. One-humped camels live in deserts in the Middle East, India, and North Africa, while two-humped camels live

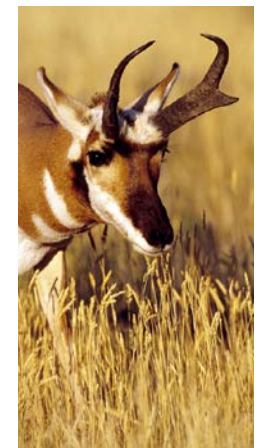


in deserts and windy grasslands in central Asia. Both kinds of camels are well suited to habitats where food and water are scarce. Camels store fat in their humps, which helps them to survive when they must endure long periods

of time without food. Few camels still exist in the wild; most are kept as pack animals, and one-humped camels are also used for riding.

Pronghorn antelopes are herbivores that inhabit the grasslands of North America. Males and females both have permanent one-spiked, or pronged, horns made of bone and covered by a layer of **fused** hairs, which is shed each year.

Pronghorns are extremely fast, and healthy adults can easily outrun predators. The most serious threat to pronghorn survival occurs in the first two months of life, when coyotes kill fawns in large numbers.





Do You Know?

The largest member of the deer family is the moose. Its antlers can weigh as much as a typical 11-year-old child, and those antlers can grow up to 25 millimeters (1 in.) a day!

Deer, including elk, moose, and caribou, are herbivores. Some are **grazers** (eating mostly grass), but most are **browsers** (eating leaves, shoots, twigs, and other plant parts). Deer are found in many habitats around the world, including grasslands, forests, rainforests, and tundra. Many deer migrate with the changing seasons to locate food.

Most male deer grow antlers, which are made of bone and covered in furry skin called *velvet* while they are growing. Antlers grow before the mating season, fall off after it, and grow again the following year. Caribou are the only kind of deer in which the females have antlers.



Horns come in many shapes and sizes. Clockwise, from top left: Texas longhorn steer, bighorn sheep, kudu antelope, goats

Cattle, sheep, goats, and antelopes vary widely in shape and coloring; however, they all share the feature of growing permanent horns made of bone and covered with a layer of keratin. All the males of this group and some females have horns; each horn is always a single spike. The horns can be simple, curved, or spiral in shape, and antelopes often have horns that are elaborately shaped. Many domesticated animals in this group are kept for milk, meat, and wool.

CONCLUSION

Ungulates are diverse creatures, each with a unique body and lifestyle that make it perfectly suited to the habitat in which it lives. Many ungulates, such as swine, sheep, and cattle, are raised in great numbers for food, milk, and hides. But many wild ungulates, such as the rhino, are endangered and survive only in captivity. Others are at risk of suffering the same fate because of environmental destruction, hunting, and other threats to their well-being. Habitat preservation and respect for life will allow these amazing animals to continue to survive into the future.



Wild horses running free: a sight that is becoming rare.

GLOSSARY

browsers (<i>n.</i>)	animals that eat leaves, shoots, twigs, and other plant parts (p. 13)
cannon bone (<i>n.</i>)	the long, single foot bone found in hoofed animals (p. 5)
carnivores (<i>n.</i>)	animals that only eat meat (p. 5)
domesticated (<i>adj.</i>)	of or relating to animals that are raised for human use (p. 7)
fused (<i>adj.</i>)	joined together (p. 12)
grazers (<i>n.</i>)	animals that feed on grass or other plants that grow near ground level (p. 13)
herbivores (<i>n.</i>)	animals that only eat plants (p. 5)
keratin (<i>n.</i>)	a strong material produced by the bodies of some animals that makes up hair, hooves, claws, feathers, and fingernails (p. 4)
omnivores (<i>n.</i>)	animals that eat both plants and other animals (p. 10)
successful (<i>adj.</i>)	having the desired result; ending in success (p. 10)
ungulates (<i>n.</i>)	animals with hooves (p. 4)

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