

Lesson Guide: Bison

Vocabulary:

- Bison/Buffalo
- Harvest
- Subsistence
- Commercial Hunting
- Ecosystem
- Herbivore
- Ruminant

See the attached vocabulary sheet in Educators Guide.

Engage:

- Read the Jicarilla Apache Story, ‘The Day the Buffalo Were Set Free’ (Story provided in Educators Guide).

Ask students:

- What does this story teach about fairness and sharing resources?
- How does Raven's behavior contrast with Indigenous values about animals?
- What role does community problem-solving play in the story?
- How might this story reflect real historical experiences of resource scarcity?
- Teach students all about ‘Buffalo’, utilizing the presentation in Educators Guide.

Explore and Explain:

- **Activity 1: Vocabulary Sheet w/ Indigenous language option**
 - Give each student the Indigenous Languages Vocabulary Sheet. In the first column, they will rewrite the vocabulary word in English. In the second column, they should explain the meaning in their own words. In the third column, if possible, they will add the word in their own Native language or in the language of a friend, neighbor, or community member
- **Activity 2: Buffalo/Bison in Language and Use**
 - Students explore the cultural significance of bison by learning its names in five Indigenous languages, practicing pronunciation, and noting special meanings. They discuss why both ‘buffalo’ and ‘bison’ are used and what that shows about language and identity. Then, students review how every part of the buffalo was traditionally used and complete a matching activity. Finally, they discuss what this teaches about Indigenous values of respect, gratitude, and stewardship.

Elaborate:

- **Activity 3: Bison History to Near Extinction and Buffalo Biology**
 - Students explore bison history and biology by reviewing a timeline of population decline and calculating what percentage of the original herd remains today. They identify causes of near-extinction and impacts on Indigenous communities. Then, students learn five traits that make bison mammals, match body parts to their functions, and explain why bison are herbivores and ruminants. Finally, they discuss how behaviors like wallowing help maintain prairie ecosystems.

- **Activity 4: Buffalo Nutrition and Restoration Efforts**
 - Students compare buffalo and beef nutrition to see why buffalo is a healthier choice, then discuss iron’s role in the body and how eating buffalo connects to cultural restoration. Next, they learn about food sovereignty—the right to access healthy, culturally appropriate food—and explore why bison are a keystone species. Finally, students research the Inter-Tribal Buffalo Council and write a paragraph explaining why buffalo restoration matters for culture, food, environment, and community healing.

Evaluate:

- **Activity 5: Create a “Buffalo Knowledge Poster”**
 - Assign small groups of students to work together, creating a visual poster (or PPT slide) that brings together everything they learned in the lesson. The poster should include visual elements, a title, and the following:
 - **Story Summary:** One or two sentences about ‘The Day the Buffalo Were Set Free’ Story.
 - **Cultural Values:** List 2 values taught by the story (e.g., courage, balance, respect for nature).
 - **Ecological Knowledge:** Three ways Indigenous people can use buffalo for sustainably.
 - **Nutrition Insight:** One fact about why rabbit meat is important and healthy.
 - **Vocabulary Connection:** Use at least 3 vocabulary words in context.

Suggested Lesson Activities:

- Indigenous Vocabulary
- Vocabulary Sheet w/ Indigenous language option
- Bison History to Near Extinction and Buffalo Biology
- Buffalo Nutrition and Restoration Efforts
- Buffalo Knowledge Poster

Additional Educator Resources:

- [Bison Ingredient Profile-Indigenous Foods](#)
- [National Park Service — Bison Management](#)
- [Intertribal Buffalo Council](#)
- [Buffalo and the Plains Indians, World History Encyclopedia](#)
- [Hundreds of buffalo returned to ancestral lands in nationwide, Indigenous-led movement](#)

The Day the Buffalo Were Set Free
(*A Jicarilla Apache story, retold for middle school readers*)

Page 1: A Time of Hunger

Long ago, the people lived on the wide, open plains. But this was a hard season. There was no meat, and food was scarce. The people worried about survival because their subsistence—the food they needed to live—was gone. They played games like hoop-and-pole to keep their minds busy, but hunger was always there.

One day, Raven appeared. No one knew where he came from. He carried a quiver, and inside were animal intestines—proof that Raven had meat. The people whispered among themselves: *Where did Raven find food when we have none?* They decided to watch him closely.

Page 2: Raven’s Secret

That evening, Raven began to travel home. He flew upward toward the sky-hole, circling higher and higher until he looked like a tiny speck. Most people lost sight of him, but Rattlesnake and Bat kept watching. They saw Raven disappear into the sky and head east toward the Black Mountains.

The people followed his path, moving their camp four times before they reached Raven’s home. There, they saw something amazing: Raven had plenty of meat. When they asked where the buffalo were kept, Raven refused to answer. He guarded his secret carefully.

Page 3: A Clever Plan

The people knew buffalo meat was the key to survival. They made a plan. One man transformed into a small puppy with shiny black eyes made of obsidian. The people left the puppy behind and moved their camp far away.

Later, Raven’s children found the puppy and brought it home. Raven suspected something, but when he tested the puppy by touching its eyes with a hot poker, the puppy cried like a real dog. Raven decided it was harmless. The child named it *inôldi*, meaning “choke,” and kept it as a pet.

Page 4: The Great Escape

The puppy stayed with Raven and learned his secret: Raven kept all the buffalo locked behind a door. He controlled the herd and only opened the enclosure when he wanted to harvest meat for himself. This was why the people were starving.

One night, when Raven and his children were asleep, the puppy crept to the door and pushed it open. Suddenly, the buffalo charged out in a powerful stampede, thundering across the plains. Dust rose like a storm. Raven woke and tried to stop them, shooting arrows, but most escaped. The puppy clung to an old buffalo and ran with the herd.

Page 5: Balance Restored

The man returned to his people and said, “The buffalo are free!” The people moved back to the plains, where they could hunt buffalo again. The meat gave them food, clothing, tools—everything they needed to live. The buffalo, an herbivore and ruminant, became central to their ecosystem and way of life.

From that day on, buffalo roamed freely, and the people were no longer hungry. This story reminds us that sharing resources brings balance and survival.

Why This Story Matters

This isn’t just a tale about animals. It’s about respect, community, and survival. For Indigenous nations, buffalo were never just food—they were relatives, teachers, and part of the land. Today, tribes are working hard to restore buffalo herds, bringing back traditional foods and cultural pride.



Buffalo

Buffalo or Bison

- **"Buffalo"** - This is the common English name that has been used for centuries in North America, even though it's technically inaccurate (true buffalo live in Africa and Asia)
- **"Bison"** - The scientifically correct name
- Most Native people use "buffalo" and "bison" interchangeably





Buffalo are significant for over 80 tribes



How to say “Buffalo” in Native Languages:

- Lakota/Dakota: Tatanka
(masculine, powerful spirit)
- Blackfoot: linnii
- Cheyenne: Hotoa’e
- Comanche: Cutz
- Crow: Biishe
- Pawnee: Raruu
- Shoshone: Boy-zhan
- Navajo: Ayání





Spiritual and Cultural Significance

- Spiritual Significance: Sacred relative, not just a resource
 - Represents strength, endurance, and the ability to survive harsh conditions
- Cultural Practices:
 - Ceremonies and prayers before and after hunts, giving thanks for the bison's sacrifice
 - Buffalo dances to show honor and respect
 - White Buffalo (rare) considered extremely sacred - a sign of hope
 - Giveaway ceremonies where bison meat is shared with elders and community members
- Central to Life and Survival:
 - Provided food, clothing, shelter, tools, spiritual items
 - Every part of the bison used-nothing wasted (demonstrates respect and gratitude)

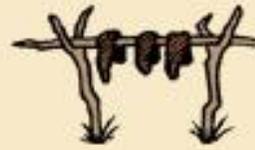


TANNED HIDE:

Moccasins, Cradles, Winter Robes, Shirts, Leggings, Belts, Dresses, Pipe Bags, Quivers, Tipi Covers, Gun Covers, Dolls



RAWHIDE: Containers, Shields, Buckets, Moccasin Soles, Belts, Headdresses, Medicine Bags, Drums, Ropes, Saddles, Stirrups, Knife Cases, Quirts, Armbands, Bullet Pouches



MUSCLES:
Sinew, Meat for Jerky



HORNS: Cups, Spoons, Ladles, Headdresses

TAIL:
Decorations, Fly Brush, Whips

BRAINS:
Hide Preparation

FAT:
Soap, Cooking Oil

SKULL:
Altar at Religious Ceremonies



BONES:
Knives, Arrow-Heads, Shovels, Scrapers, Winter Sleds, Saddle Trees, War Clubs, Game Dice

TONGUE:
Best Part of the Meat

HOOVES:
Glue, Rattles

BEARD:
Ornaments for Weapons

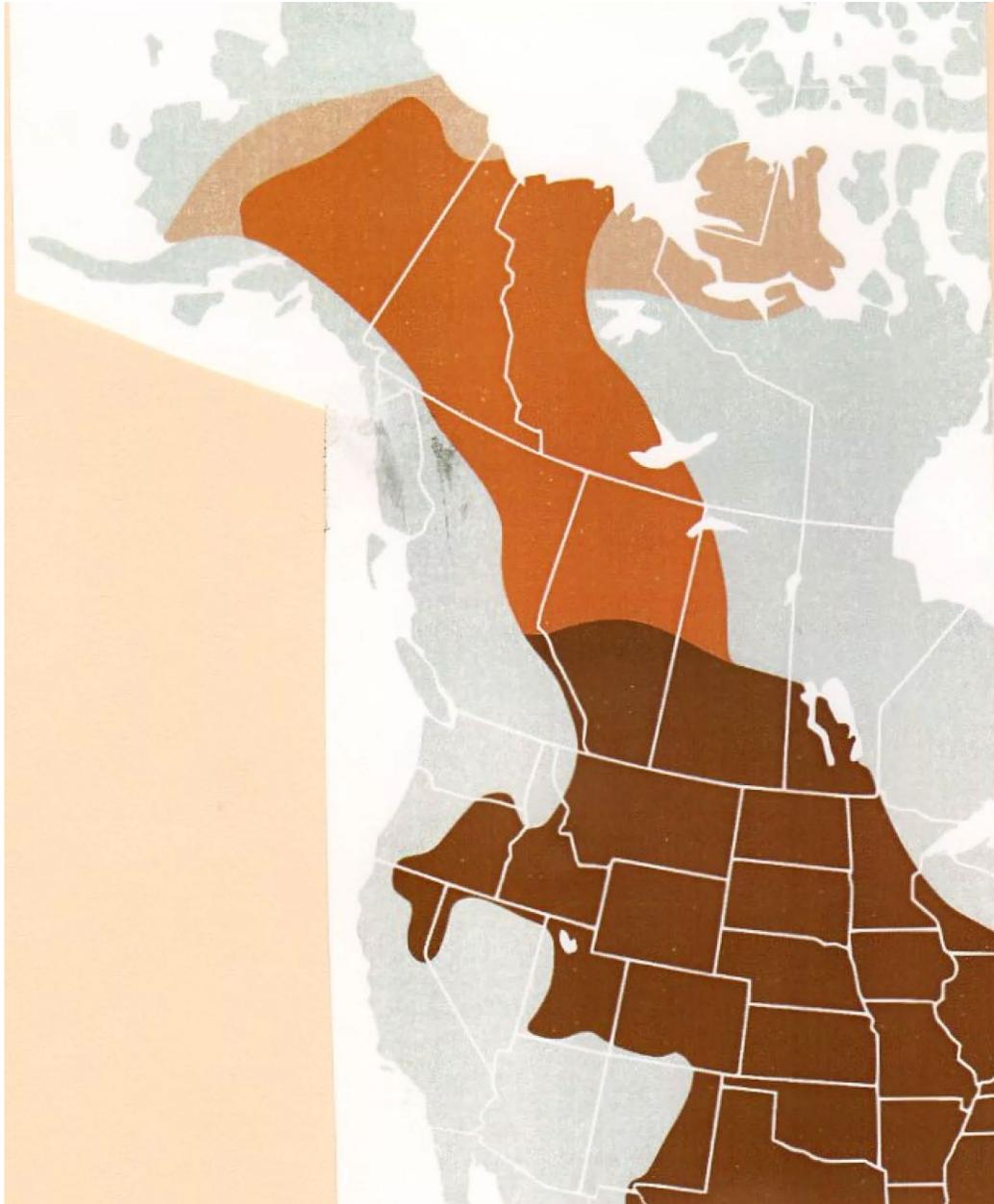
DUNG:
Fuel

STOMACH:
Buckets, Cups, Dishes, Cooking Pots



HAIR:
Headdresses, Saddle Pad Filler, Pillows, Ropes, Halters





- Bison roamed from Alaska in the north to Mexico in the south, and from California in the west to New York and Georgia in the east.
- Their original rangelands covered two-thirds of the North American continent

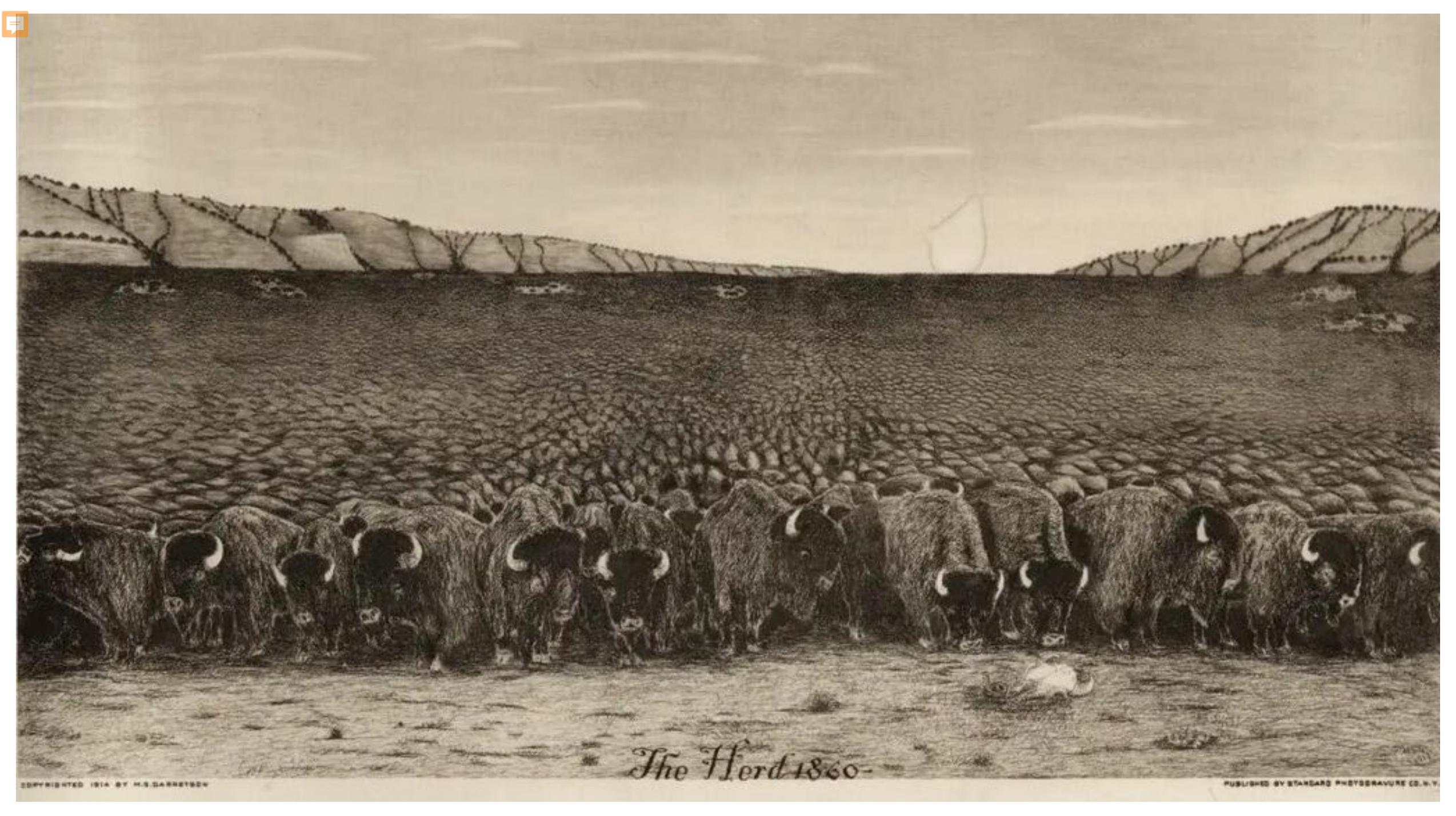




History of the Buffalo



- 1800s an estimated 60 million bison roamed the Great Plains
- Near extinction in late 1800's, for several reasons:
 - **Industrial Hunters** High demand for bison hides, meat, and bones.
 - **Railroad Expansion** – As railroads were built across the West, bison herds were disrupted and railroad companies hired hunters to clear the land.
 - **U.S. Government Policy** – The government encouraged bison hunting as a way to force Native American tribes off their lands. By destroying the bison, which many tribes depended on for food, clothing, and shelter, they hoped to weaken Native communities and make them move to reservations.
 - **Settlement of the West** – As more settlers moved west, bison lost their grazing lands to farms and ranches.
- Compared to today's population-- from 60 Million to 500,000: A 99% Decline



The Herd 1860-



What Makes Buffalos Mammals?

Backbone

- Buffalo have a strong backbone (spine) that supports their huge, heavy bodies, just like you do!

Warm-Blooded

- Buffalo can keep their bodies warm even when it's freezing cold outside, sometimes as cold as -40°F !

Breathing and Heartbeat

- Buffalo breathe air with their lungs and have a large heart that pumps blood, just like people do.

Hair and Fur

- Buffalo have thick, dark brown fur that grows extra shaggy in winter and falls off in big patches during spring.

Baby Buffalo Drink Milk

- Mother buffalo make milk to feed their babies, called calves, for about 7-8 months.

Buffalo Babies

- Gestation: ~9 months
- Calves born with reddish-orange hair, fur turns brown by fall
- No hump
- Walk within hours
- Nurse for 7-8 months
- Mother-calf bond is very strong



Physical Appearance



- Fur: Thick, shaggy brown fur that sheds in spring birds use it to build nests!
- Massive Head: Wide, powerful head used like a snowplow to find grass under deep snow.
- Shoulder Hump: muscle for head movement in snow
- Split Hooves: Two-toed hooves on each foot help them walk, run, and climb.
- Tail Signals: Tail stands up when buffalo are alarmed and swishes to swat flies.
- Senses: Poor eyesight but amazing hearing and smell to detect danger far away.



Interesting Facts

- Largest mammal in North America
- Speed: up to 35 mph
- Sounds: roar, grunt, bellow
- Can jump 6 feet vertically
- Excellent swimmers
- Roll in dirt/dust baths (wallowing) – to shed fur, creates habitat
- Both males and females have horns
- Both males and females have horns



Diet & Digestion

- Herbivores
- Ruminants: 4-compartment stomach
- Eat grasses, sedges, forbs
- Graze 9-11 hours daily
- Can find food under snow using their massive heads as plows
- Their grazing patterns benefit prairie ecosystems





Health & Longevity

- Wild bison typically live 10–20 years
- Veterinary care includes parasite prevention (Include an image of a ranger caring for buffalo.)
- Threats: harsh winters, predators (wolves, bears for calves), disease
- Adaptations: thick skull protects from cold, can survive -40°F weather





Tribal Bison Restoration Efforts

- Indigenous Nations Leading Buffalo Recovery
 - The Inter Tribal Buffalo Council (ITBC)
 - Founded in 1992 by 19 tribes
 - Now represents 82+ tribes managing ~20,000+ bison
 - Mission: Restore bison to tribal lands and restore spiritual/cultural connections
- Why Restoration Matters
 - Ecological restoration of prairie lands
 - Food sovereignty and traditional diets
 - Healing from historical trauma
 - Physical, spiritual and cultural reconnections with buffalo relatives for tribes
 - Economic opportunities for tribal communities





Notable Tribal Buffalo Herds

- **Fort Peck Assiniboine & Sioux** (Montana)
300+ bison herd
- **Blackfeet Nation** (Montana)
Working to restore genetically pure herds
- **Rosebud Sioux** (South Dakota):
Wolakota Buffalo Range - one of largest
Native-managed herds
- **Northern Arapaho** (Wyoming)
Restoring bison to treaty lands
- **Oglala Sioux** (Pine Ridge)
Managing herds for cultural and economic purposes
- **Nambé Pueblo** (New Mexico)
Managing a small herd of 21 for cultural purposes





How You Can Be a Buffalo Helper

- **Learn** your tribe's names for and stories about buffalo
- **Listen** respectfully when elders share their knowledge
- **Visit** buffalo herds carefully and quietly with your family
- **Share** what you learn with others
- **Respect** the land where buffalo live
- **Remember** that buffalo are sacred to many Native peoples
- **Read** books by Native authors about buffalo and history
- **Thank** the buffalo for teaching us about survival and strength



Nutrition & Cultural Pride

Eating buffalo meat is part of cultural restoration. It's lean, high in protein, and healthier than many store-bought meats. When we eat buffalo, we honor traditions and strengthen our bodies.

Nutritional benefits of buffalo:

- Lean protein source with about 2.4 g fat per 4 oz, compared to beef which has 9 g.
- Nearly twice the iron of beef, aiding oxygen transport and preventing fatigue.
- High in B vitamins, especially B12 for brain function and energy.
- Provides zinc, selenium (immune support) and omega-3s (heart health).



TEACHER EXAMPLE**Indigenous Languages Vocabulary Sheet (6-8)****Directions:**

In Column 1, rewrite the word in English. In Column 2, write the definition of the word in your own words, then in Column 3 rewrite in Native language (if available). If it's not available, you may use the Native language of a neighbor, friend, or community member.

Vocabulary Word	English Rewrite	Definition	Cherokee
			Language Rewrite
Bison/Buffalo			ᎠᎩᎠ, pronounced ya-na-sa
Harvest			ulagohvsdi (pronounced oo-lah-go-huh-s-dee)
Herbivore			
Ruminant			
Commercial Hunting			
Subsistence			
Ecosystem			

STUDENT WORKSHEET**Name:** _____**Date:** _____**Indigenous Languages Vocabulary Sheet (6-8)****Directions:**

In Column 1, rewrite the word in English. In Column 2, write the definition of the word in your own words, then in Column 3 rewrite in Native language (if available). If it's not available, you may use the Native language of a neighbor, friend, or community member.

Vocabulary Word	English Rewrite	Definition	Language Rewrite
Bison/Buffalo			
Harvest			
Herbivore			
Ruminant			
Commercial Hunting			
Subsistence			
Ecosystem			

Name: _____

Date: _____

Buffalo/Bison in Language and Use

Buffalo or Bison? Understanding Names and Identity

Read the information below, then answer the questions that follow.

- "Buffalo" is the common name used for centuries in North America
- "Bison" is the scientifically correct name
- Most Native people use both terms interchangeably

1. Why do you think both names are acceptable to use? Explain your reasoning.

Cultural Significance - Names Across Nations

Buffalo/bison are significant to over 80 Indigenous tribes across North America.

2. Search the correct name in Indigenous languages for Bison, then try to pronounce the name correctly. Note the special meaning, if known.

Indigenous Nation	Word for Buffalo	Special Meaning (if known)
Lakota/Dakota		
Blackfoot		
Cheyenne		
Comanche		
Navajo		

3. What does the Lakota/Dakota name "Tatanka" mean? Why might this meaning be significant?

Respecting the Bison by Using All Parts

Indigenous people use every part of the buffalo, thereby wasting nothing. This shows respect for the animal and understanding of how precious life is.

4. Match each buffalo part to its use:

Buffalo Part	How It Can Be Used? (Write the letter from the bank below)
Meat	Clothing, tepees, blankets, moccasins
Hide (skin)	Tools, knives, arrow heads, sleds, toys, needles
Bones	Rope, stuffing for pillows, saddle pad filler, halters
Horns	Soap, cooking oil
Hair	Food for eating fresh, dried meat (jerky), fat for cooking
Fat	Buckets, cups, dishes, cooking pots
Stomach	Altar at religious ceremonies
Skull	Cups, spoons, ladles, decorations for weapons

5. Why is it important to use every part of the buffalo? Explain in your own words.

Name: _____ Date: _____

History of Bison to Near Extinction and Buffalo Biology

Study the timeline and information about buffalo population changes:

Time Period	What Happened
1800s (early)	Estimated 60 million bison roamed the Great Plains
1850s-1880s	Mass slaughter: Industrial hunters killed bison for hides, meat, and bones. Railroads disrupted herds. U.S. government encouraged killing to force Native peoples onto reservations.
1889	Fewer than 1,000 bison remained (99.998% decline)
1900s	Conservation efforts begin (mostly by non-Indigenous groups)
1992	Inter-Tribal Buffalo Council founded by 19 tribes
Today	Approximately 500,000 bison; 82+ tribes managing ~20,000 bison

1. Calculate: What percentage of the original 60 million bison population exists today? Show your work.

Calculation: $500,000 \div 60,000,000 =$ _____

Percentage: _____ %

2. List THREE reasons why bison were nearly driven to extinction:

- 1) _____
- 2) _____
- 3) _____

3. How did the near extinction of bison affect Indigenous peoples? Explain at least TWO major impacts.

Buffalo Biology

4. Buffalo are mammals. List the five characteristics that make them mammals:

- 1) _____
- 2) _____
- 3) _____
- 4) _____
- 5) _____

5. Match each buffalo body part to its function or adaptation:

Body Part	Function/Adaptation (Write letter)
_____ Shoulder hump	A. Works like a snowplow to clear deep snow
_____ Massive head	B. Powerful muscle for moving head in snow
_____ Thick fur	C. Protects brain from extreme cold
_____ Thick skull	D. Insulation; survives -40°F weather
_____ Split hooves	E. Distributes weight; provides traction
_____ Excellent hearing/smell	F. Detects predators over a mile away

6. Buffalo are herbivores. What does that mean?

- a) They eat only meat
- b) They eat plants
- c) They eat both plants and meat

7. Buffalo are ruminants. Explain this term:

Ruminant: _____

8. Why do buffalo roll in dirt?

- a) To cool off
- b) To shed fur and keep insects away
- c) To hide from predators

9. Explain how buffalo rolling in dirt, “wallowing”, helps the ecosystem (earth).

10. Circle three interesting facts you learned about buffalo:

- Can run up to 35 mph
- Can jump 6 feet vertically
- Are excellent swimmers
- Roll in dirt (wallowing) to shed fur and deter insects
- Both males and females have horns
- Make sounds including roars, grunts, and bellows
- Are the largest mammal in North America

Name: _____ Date: _____

Buffalo Nutrition and Restoration Efforts

Compare the nutritional content of buffalo meat to beef (per 100g serving):

Nutrient	Buffalo/Bison	Beef (80% lean)
Calories	146	254
Protein	24g	17g
Total Fat	7g	20g
Saturated Fat	2.7g	8g
Iron	3.4mg	2.0mg

1. Based on the table above, how is buffalo meat healthier than beef?

List 3 ways:

- 1) _____
- 2) _____
- 3) _____

2. Why is iron important for your body? Research if needed.

3. Which nutrients show the biggest difference between buffalo and beef, and why might that matter for your health?

4. Buffalo are called a "keystone species." Research this term and explain what it means and why buffalo are considered keystone species:

5. Food Sovereignty means the right of people to choose healthy, culturally appropriate food, like buffalo. Explain why buffalo restoration is important for Indigenous food sovereignty:

6. What is the Inter-Tribal Buffalo Council (ITBC)? Include when it was founded and what it does:

7. Imagine you are explaining to your classmates why bringing buffalo back to tribal lands matters today. Write a short paragraph that includes at least three reasons why buffalo restoration is important to Indigenous nations. Think about cultural traditions, food, the environment, and community healing:
