

Classroom Bites

Bison

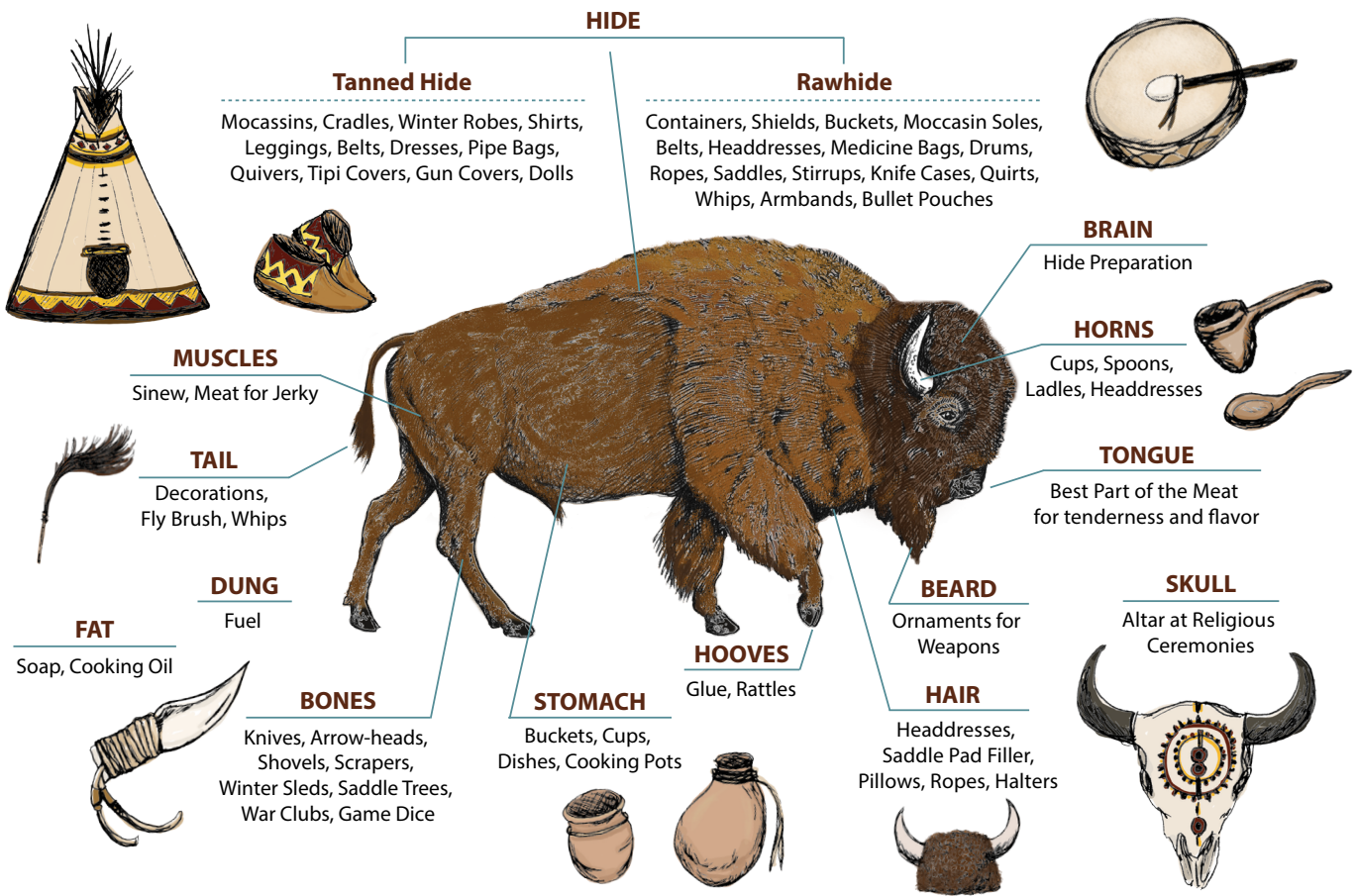


Did You Know

- Bison are the largest land mammals in North America. Male bison (called bulls) weigh up to 2,000 pounds and stand 6 feet tall, while females (called cows) weigh up to 1,000 pounds and reach a height of 4-5 feet. Bison calves weigh 30-70 pounds at birth.
- Bison calves tend to be born from late March through May and are orange-red in color. After a few months, their hair starts to change to dark brown and their characteristic shoulder hump and horns begin to grow.
- Though large, bison can run up to 35 miles per hour. They can spin around quickly, jump high fences, and are strong swimmers. Due to their powerful head and horns, bison are incredibly dangerous to anyone they consider to be a threat.



- Bison have been a critical species to tribes in Montana and the region for thousands of years, providing them with food, clothing, fuel, tools, shelter, and spiritual value. Every reservation in Montana has reestablished bison herds on tribal lands.
- Because of the way bison naturally roam on the prairies, they help aerate and fertilize the soil, spread seeds of important plants, and even help the plants germinate.
- In 2014, the Buffalo Treaty was signed between 13 different Indigenous nations in Canada and the United States. This treaty recognizes these nations as safe places for bison. As of 2021, 31 nations have signed the treaty. More information can be found at buffalotreaty.com.



Selection

While there are eight primal cuts of bison meat—chuck, brisket, rib, short plate, short loin, flank, sirloin, and round—bison is most commonly available in burger form due to the lower fat content than beef. While bison lacks marbling, it is possible to serve tender, juicy cuts of meat with the proper preparation.

Montana schools can purchase bison that has been slaughtered and processed in either an official Montana Department of Livestock-inspected (state-inspected) or a USDA-inspected (federally-inspected) facility. For a list of state-inspected facilities visit the Montana Department of Livestock's website (<http://liv.mt.gov/MI/state-inspected-plants.mcp>) and the USDA's website (www.fsis.usda.gov/wps/portal/fsis/topics/inspection/mpi-directory) for federally-inspected facilities.

Uninspected game meat is not allowed to be served in FNS Child Nutrition Programs except when facilities, including schools, and sites operated by Native American tribes and tribal organizations that primarily serve Native Americans accept donations of game meat. In this specific case, the program operator takes on a number of responsibilities to ensure that the food is stored and served safely and that its origins and the processes followed are well documented. See sources for more details.

Storage

Keep buffalo meat refrigerated below 40°F or frozen at or below 0°F. Ground bison can be refrigerated for one to two days or frozen for three to four months. Steaks and roasts can be refrigerated for three to five days or frozen for six to twelve months.

Cooking

Generally, cooking time is dependent on type of cut, size of meat, and desired doneness. For a complete guide to cooking bison, see *How to Cook with Bison* (www.bisoncentral.com/how-to-cook-bison).

Broil. Preheat oven for 10 minutes. Add seasonings, if desired. Move your broiler rack away from the heat about a notch lower than where you normally broil beef steaks. Expect a buffalo steak to cook one-third faster than a beef steak. Bison steaks are best when cooked medium rare to medium to maintain the moisture and flavor of the meat. It is not recommended to cook buffalo meat past medium.

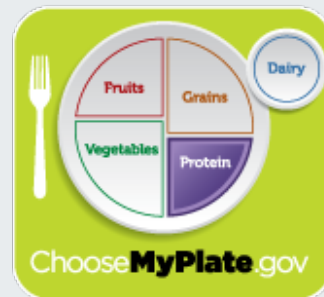
Brown. Brown and cook ground buffalo in a skillet, using spatula to maintain even consistent temperature. Ground bison is safe when it has reached a temperature of 160°F.

Dry. Cut semi-frozen roast into ¼ inch strips, season, then dry at 150°F - 170°F in an oven for 3-4 hours or in a dehydrator at 145°F for 6-8 hours or until jerky is dry but flexible.

Cook Safely. Cook to an internal temperature of 145°F for steaks and roasts; 160°F for ground bison. Questions? Visit www.foodsafety.gov and click on Keep Food Safe.

Nutrition Information

According to the USDA National Nutrient Database, bison is a rich source of protein (22 g per serving), which is important for building and repairing tissues, as well as making hormones and enzymes. The meat also contains a preventative ratio of omega-6 to omega-3 fatty acids, at 4:1 (the typical western diet is around 15:1). These fatty acids are considered essential because we cannot make them naturally in our bodies. Omega-3 fatty acids are especially important for preventing heart disease and reducing inflammation. Additionally, bison is high in vitamin B12, a water-soluble vitamin that is important in building red blood cells, supporting bone health, and balancing mood. A single serving can satisfy one fifth of daily iron needs for most individuals (about 3.5mg per serving), an important mineral that promotes growth and development by way of proteins that are made by the body to deliver oxygen to our muscles.



For more information on the nutrition information of this delicious meat, visit <https://greatrangebison.com/bison-nutrition-information/>.



Book Nook

Camas and Sage: A Story of Bison Life on the Prairie, by Dorothy Hinshaw Patent

The Buffalo are Back, by Jean Craighead George

Bison for Kids, by Todd Wilkinson

Buffalo Song, by Joseph Bruchak



Activities

“Have you ‘herd’ of bison?”

Adapted from “The 10,000 Year Significance of Bison: A Curriculum Sequence on the Past, Present and Future of Bison” (<https://projectarchaeology.org/download/8993/>)

Grades

K-6

Younger students can discuss questions rather than write them, but can still engage with material.

Objectives

Students will:

- Be introduced to bison (also known as buffalo) by watching a documentary about the bison living in Yellowstone National Park. During the film, students will complete a film worksheet.
- Will understand: How bison have adapted to their eco-niche taking into account environmental, seasonal, and predatory pressures. They will also gain an understanding about the various bison structural and behavioral adaptations that have contributed to general species and reproductive success.

Supplies

Worksheet for each student, found in teacher guide: <https://projectarchaeology.org/download/8993/>

Directions

Part 1: An Introduction to Bison

- The teacher will introduce students to bison as a species, its major characteristics, location, habitat, etc. by presenting the provided PowerPoint “An Introduction to Bison”. The PowerPoint is available with this curriculum, the outline of which is provided below. Following the presentation, students will then watch “Bison: Documentary on the Buffalo of Yellowstone” (approximately 55 minutes) available online on YouTube (<https://www.youtube.com/watch?v=dR65SMn2VeQ>).
- Students will take notes on the corresponding worksheet provided (**Worksheet 1: Bison Documentary on the Buffalo in Yellowstone**). Note: The worksheets can be adapted for the optional videos as well.
- Bison: Documentary on the Buffalo of Yellowstone Video: <https://www.youtube.com/watch?v=dR65SMn2VeQ> (Bison in National Parks)

- If continuation to lesson 2 of this unit is planned, give students **Handout 1: Student Instructions for Group Poster Project** which explains the rest of the lesson module sequence.
- Time allowing, students can be asked to write about how certain adaptations and behaviors have helped bison survive and thrive or discuss these adaptations in a group setting.

What’s in a name?

The American bison goes by many names, including the colloquial term buffalo. These materials use bison and buffalo interchangeably. The scientific name is *Bison bison*. Indigenous people from this area have used other names for these massive creatures long before any of these scientific terms were used:

Blackfoot (Niitsitapi) – innii

Assiniboine (Nakoda) – tatanga

Sioux (Dakota) – tatanka

Salish (Sélish) – q̓weyq̓way

Crow (Apsalooke) – bishée

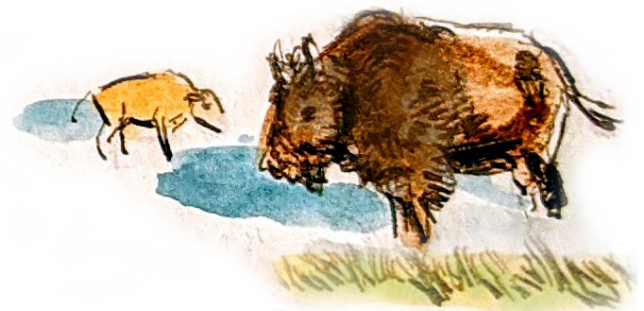
Cheyenne (Tsetsêhesêstâhase) – hotoa'e

Gros Ventre (A'aninin) – eneečee

Ojibwe (Anishinabe) – bizhiki

Kootenai (Ktunaxa) – Kamququkuᑦ ʔiyamu

Watch the Montana Harvest of the Month bison video to hear pronunciations of buffalo in several of these languages.



Recipes

Bison Lentil Chili

Source: Big Sky School District

Servings

6

Ingredients

- 2 tsp Olive oil
- 1 1/2 cups Yellow onion
- 2/3 cup Green pepper
- 1 Tbsp 1/2 tsp Garlic
- 3/4 lb Ground bison
- 1/2 cup Lentils, *dried, Spanish brown lentil or similar*
- 2 1/2 tsp Cumin
- 1 Tbsp Chili powder
- 2 tsp Smoked paprika
- 1/3 cup Tomato paste, *low sodium*
- 1 3/4 cups Diced tomatoes, *no salt added*
- 1 1/4 cups Beef broth
- 1 1/2 cups Kidney beans, *low sodium, drained and rinsed*
- 1 1/2 cups Pinto beans, *low sodium, drained and rinsed*
- 1 tsp Lime juice
- 3 Tbsp Cilantro

Preparation

1. Heat oil in medium or large pot.
2. Add onions, peppers, and garlic and sauté until soft.
3. Add bison and cook until browned, breaking up chunks. Stir in spices and mix until bison is fully cooked and fully coated in spices.
4. Add tomato paste, diced tomatoes, broth, beans, lentils, and lime juice.
5. Bring to a boil, then lower heat and allow to simmer, stirring occasionally, until chili thickens, and lentils are cooked through (about 35 minutes). Add more water if too thick.
6. Add chopped cilantro before serving.

Butternut Bison Lasagna

Adapted from IndigiKitchen

Servings

6

Ingredients

- 1 lb Ground bison
- 1 15 oz can Tomato sauce, *low sodium*
- 1 small Onion or wild onion, *minced*
- 1 tsp Garlic powder
- 1 tsp Dried basil
- 1 tsp Dried oregano
- 1 tsp Salt
- 1/2 tsp Ground black pepper
- 1 tsp Olive oil
- 1 large Butternut squash, *peeled and cut into 1/2 in slices*
- 3/4 cup Mozzarella cheese, *shredded (optional)*

Preparation

1. Preheat oven to 400°F.
2. Add bison to pan. Cook on med-high heat until browned, about 6 minutes.
3. Add the tomato sauce, onion, garlic, basil, oregano, salt, and pepper. Turn heat down to low and let simmer for about 10 minutes, with a lid.
4. Assemble the lasagna in a 7x11 inch baking dish, or another medium sized dish. Add oil to the bottom of a baking dish, alternate layers of butternut squash slices with the meat sauce. Keep making layers until all the ingredients are used. Finish with meat sauce on top.
5. Optional: top with mozzarella.
6. Bake for about 50 minutes with foil on top, or until squash is soft. Remove foil and cook for another 5-10 minutes until cheese is golden.

Dig Deeper

For sources and photo credits along with more recipes, lessons, quick activities, resources, and guides, visit: mtharvestofthemonth.org.

4 Montana Harvest of the Month: **Bison**



The Montana Harvest of the Month program showcases Montana grown foods in Montana communities. This program is a collaboration between Montana Farm to School, Office of Public Instruction, Montana Team Nutrition Program, National Center for Appropriate Technology, Montana State University Extension, Gallatin Valley Farm to School, FoodCorps Montana, Montana Organic Association, and Montana Department of Agriculture. More information and resources are available at: <https://mtharvestofthemonth.org>.

Funds were provided in part by USDA Team Nutrition Training grants, USDA funds, USDA Farm to School grants, Montana Healthcare Foundation, Northern Pulse Growers Association, Montana Department of Public Health and Human Services, Montana School Nutrition Association, Montana Department of Agriculture Specialty Crop Block Grant, Montana Grains Foundation, Dairy MAX, Montana Pulse Crop Committee, Montana Wheat and Barley Committee. This institution is an equal opportunity provider and employer. The Montana State University Extension Service is an ADA/EO/AA/Veteran's Preference Employer and Provider of Educational Outreach.