



2001 Broadway | PO Box 1333  
Marble Falls, TX 78654  
830-798-2157

## **Pre- and Post-Visit Materials**

Dear Educator,

A museum visit is always an exciting and enriching experience for students. By incorporating a few simple activities into your classroom, you can enhance their visit and make it even more meaningful.

During your visit, your class will delve into Marble Falls' and Central Texas' past. They will learn about school life 100 years ago, when our building was the only school in Marble Falls. Students will also explore a kitchen without electricity and meet Rockie, a 700-year-old bison skeleton. To help your students make the most of their time at the museum, we have assembled some suggested materials and activities.

The pre-visit materials will familiarize them with the topics they will encounter on the day of the field trip. The post-visit materials will encourage them to expand on and reflect upon their experience after returning from the museum.

We understand that you may need to tailor these lessons to suit your classroom and your students' needs. Please feel free to use the included handouts as they are or create your own.

If you have any questions or require additional information on resources for students and educators, please don't hesitate to reach out to us.

The Falls on the Colorado Museum  
830-798-2157  
[focmuseumchair@gmail.com](mailto:focmuseumchair@gmail.com)

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# Pre-Visit Class Discussion Ideas

- Open with questions like: Who has been to a museum? What do museums offer that can't be found in a book or online? Why is it important to study history and culture? How is visiting a museum different from visiting another cultural site or attraction such as a zoo or park? Why do you think museums are an important part of communities?
- Make an experience chart to discuss what students know about The Falls on the Colorado Museum, what they think they might see and what they want to learn. Save this chart for discussion after the trip. Alternatively, you may use the "When I Visit The Falls on the Colorado Museum..." worksheet provided in this guide on page 4.



Name: \_\_\_\_\_

Date: \_\_\_\_\_

### When I Visit The Falls on the Colorado Museum...

Directions: Use this worksheet to show what you would like to see and learn when you visit The Falls on the Colorado Museum.

*When I visit The Falls on the Colorado Museum, I'd like to see...*

*When I visit The Falls on the Colorado Museum, I'd like to learn...*

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# Kitchen Without Electricity

## Lesson Plan

**Objective:** The purpose of this lesson is to provide specific questions and activities to accompany an elementary field trip to the Falls on the Colorado Museum. Students will compare and contrast elements of their own lives with those 100+ years ago.

**Grade Levels:** K-5th

### Applicable TEKS:

1. Kindergarten Social Studies
  - a. (12) Science, technology, and society. The student understands ways technology is used in the home and school and how technology affects people's lives. The student is expected to:
    - (A) identify examples of technology used in the home and school;
    - (B) describe how technology helps accomplish specific tasks and meet people's needs; and
    - (C) describe how his or her life might be different without modern technology.
  - b. (13) Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - (A) gather information about a topic using a variety of valid oral and visual sources such as interviews, music, pictures, symbols, and artifacts with adult assistance; and
    - (B) sequence and categorize information.
  - c. (14) Social studies skills. The student communicates in oral and visual forms. The student is expected to:
    - (A) place events in chronological order;
    - (B) use social studies terminology related to time and chronology correctly, including before, after, next, first, last, yesterday, today, and tomorrow;
    - (C) express ideas orally based on knowledge and experiences; and
    - (D) create and interpret visuals, including pictures and maps.
  - d. (15) Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

## 2. 1st Grade Social Studies

- a. (15) Science, technology, and society. The student identifies individuals who created or invented new technology and understands how technology affects daily life, past and present. The student is expected to:
  - (A) describe how technology has affected the ways families live;
  - (B) describe how technology has affected communication, transportation, and recreation
- b. (16) Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
  - (A) gather information about a topic using a variety of valid oral and visual sources such as interviews, music, pictures, symbols, and artifacts with adult assistance; and
  - (B) sequence and categorize information.
- c. (17) Social studies skills. The student communicates in oral, visual, and written forms. The student is expected to:
  - (A) use a simple timeline to distinguish among past, present, and future;
  - (B) use a calendar to describe and measure time in days, weeks, months, and years;
  - (C) express ideas orally based on knowledge and experiences;
  - (D) create and interpret visual and written material; and
  - (E) use social studies terminology correctly.
- d. (18) Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

## 3. 2nd Grade Social Studies

- a. (13) Science, technology, and society. The student understands how science and technology have affected life, past and present. The student is expected to:
  - (A) describe how science and technology have affected communication, transportation, and recreation; and
  - (B) explain how science and technology have affected the ways in which people meet basic needs.
- b. (15) Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
  - (A) gather information about a topic using a variety of valid oral and visual sources such as interviews, music, pictures, maps, and artifacts; and
  - (B) interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, predicting, comparing, and contrasting.

- c. (16) Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
  - (A) describe the order of events by using designations of time periods such as historical and present times;
  - (B) apply vocabulary related to chronology, including past, present, and future;
  - (C) create and interpret timelines for events in the past and present;
  - (D) use social studies terminology correctly;
  - (E) express ideas orally based on knowledge and experiences; and
  - (F) create written and visual material such as stories, maps, and graphic organizers to express ideas.
- d. (17) Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

#### 4. 3rd Grade Social Studies

- a. (13) Science, technology, and society. The student understands how individuals have created or invented new technology and affected life in various communities, past and present.
- b. (14) Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
  - (A) gather information, including historical and current events and geographic data, about the community using a variety of resources;
  - (B) interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting; and
  - (C) interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps.
- c. (15) Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
  - (A) use social studies terminology correctly;
  - (B) create and interpret timelines;
  - (C) apply the terms year, decade, and century to describe historical times;
  - (D) express ideas orally based on knowledge and experiences; and
  - (E) create written and visual material such as stories, pictures, maps, and graphic organizers to express ideas.
- d. (16) Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a

problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

5. Technology Applications (TAC Chapter 126)

- a. 1st grade: (4) Creativity and innovation--emerging technologies. The student understands that technology is dynamic and impacts different communities. The student is expected to identify examples of how technology has impacted different communities.
- b. 2nd grade: (4) Creativity and innovation--emerging technologies. The student demonstrates an understanding that technology is dynamic and impacts different communities. The student is expected to identify and analyze how technology impacts different communities.
- c. 3rd grade: (4) Creativity and innovation--emerging technologies. The student demonstrates an understanding that technology is dynamic and impacts different communities. The student is expected to define emerging technologies.
- d. 4th grade: (4) Creativity and innovation--emerging technologies. The student demonstrates an understanding that technology is dynamic and impacts different communities. The student is expected to identify examples of emerging technologies.
- e. 5th grade (4) Creativity and innovation--emerging technologies. The student demonstrates an understanding that technology is dynamic and impacts different communities. The student is expected to predict how emerging technologies may impact different communities.



# Kitchen Without Electricity

## Pre-Field Trip Activities

Here are some suggestions for preparing various levels of students for the field trip (1-2 45 minute class periods):

1. Prior to engaging students in the following activity, ask them to go home and observe their own kitchens, making a list of various tools and appliances used by them or their family. [Use a chart with images for younger students to circle, if needed]
2. The next day, ask students individually or in groups to brainstorm the different types of appliances that they find and/or use in their kitchens at home (5-15 minutes). Alternatively, for a longer assignment, have students draw a picture of their kitchen, including and labeling different appliances and tools (20-30 minutes).
3. After students have brainstormed or drawn their picture, ask students to share the kitchen appliances/tools they identified.
4. As students are sharing their ideas, write them down on a whiteboard, or use a Parking Lot-style website. Make two categories on the board: Electric vs Non-Electric. Ask students whether particular items are powered by electricity or not, and record them in the appropriate category (10-15 minutes).
5. Depending on the grade level, the teacher can wrap up the lesson here by reflecting on how much we depend upon electricity, either orally or using an Exit Ticket (5-10 minutes).
6. To extend the lesson, ask students to brainstorm again, either individually or in groups, to consider how the functions of a modern kitchen could be accomplished without electricity (i.e. “how can we cook food without an electric oven or microwave?”). The teacher could assign a particular appliance or function to an individual or group for more specific results (oven, refrigerator, toaster, etc.).

# Kitchen Without Electricity

## Post-Field Trip Discussion

Here are some suggested questions to pose to students following the conclusion of the field trip:

1. What were the physical characteristics of the objects you saw at the Museum (weight, shape, etc)? How do they compare with their modern counterparts?
2. Do you think our modern appliances are better than the older tools? Why or why not?
3. Of all the objects at the Museum, which one seemed like the easiest to use? Which one would be the hardest? Explain your answers.
4. In your opinion, what is the most important thing powered by electricity in your home? Why did you choose that object?
5. Given what you know about technology at home from the past and in the present, what technologies do you predict appearing in the future?

### Extension Activity

Instruct students to go home and ask the older members of their family (parents, grandparents) if they ever lived without electricity. It could be their own memory or what they remember about their ancestors' lives.



# School Life: Then and Now

## Lesson Plan

**Objective:** The purpose of this lesson is for students to use images and artifacts related to the Old Granite School to compare and contrast school life in Marble Falls then versus now.

**Grade Levels:** 3-5, 7

### Applicable TEKS:

1. 3rd Grade Social Studies
  - a. (13) Science, technology, and society. The student understands how individuals have created or invented new technology and affected life in various communities, past and present.
  - b. (14) Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - (A) gather information, including historical and current events and geographic data, about the community using a variety of resources;
    - (B) interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting; and
    - (C) interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps.
  - c. (15) Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
    - (A) use social studies terminology correctly;
    - (B) create and interpret timelines;
    - (C) apply the terms year, decade, and century to describe historical times;
    - (D) express ideas orally based on knowledge and experiences; and
    - (E) create written and visual material such as stories, pictures, maps, and graphic organizers to express ideas.
  - d. (16) Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

2. 4th Grade Social Studies

- a. (19) Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
  - (A) differentiate between, locate, and use valid primary and secondary sources such as technology; interviews; biographies; oral, print, and visual material; documents; and artifacts to acquire information about Texas;
  - (B) analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
  - (C) organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps; and
  - (D) identify different points of view about an issue, topic, historical event, or current event.
- b. (21) Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
  - (A) use social studies terminology correctly;
  - (B) incorporate main and supporting ideas in verbal and written communication;
  - (C) express ideas orally based on research and experiences; and
  - (D) create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies.

3. 3rd Grade English Language Arts and Reading

- a. (1) Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
  - (A) listen actively, ask relevant questions to clarify information, and make pertinent comments;
  - (B) follow, restate, and give oral instructions that involve a series of related sequences of action;
  - (C) speak coherently about the topic under discussion, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively;
  - (D) work collaboratively with others by following agreed-upon rules, norms, and protocols; and
  - (E) develop social communication such as conversing politely in all situations.

4. 4th Grade English Language Arts and Reading
  - a. Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - (A) listen actively, ask relevant questions to clarify information, and make pertinent comments;
    - (B) follow, restate, and give oral instructions that involve a series of related sequences of action;
    - (C) express an opinion supported by accurate information, employing eye contact, speaking rate, volume, enunciation, and the conventions of language to communicate ideas effectively; and
    - (D) work collaboratively with others to develop a plan of shared responsibilities.
  
5. 5th Grade English Language Arts and Reading
  - a. Developing and sustaining foundational language skills: listening, speaking, discussion, and thinking--oral language. The student develops oral language through listening, speaking, and discussion. The student is expected to:
    - (A) listen actively to interpret verbal and non-verbal messages, ask relevant questions, and make pertinent comments;
    - (B) follow, restate, and give oral instructions that include multiple action steps;
    - (C) give an organized presentation employing eye contact, speaking rate, volume, enunciation, natural gestures, and conventions of language to communicate ideas effectively; and
    - (D) work collaboratively with others to develop a plan of shared responsibilities.
  
6. 7th Grade Social Studies
  - a. (10) Geography. The student understands the characteristics, distribution, and migration of population in Texas in the 19th, 20th, and 21st centuries. The student is expected to:
    - (A) identify why immigrant groups came to Texas and where they settled;
    - (B) describe how immigration and migration to Texas have influenced Texas;
    - (C) describe the structure of the population of Texas using demographic concepts such as growth rate and age distribution; and
    - (D) analyze the effects of the changing population distribution and growth in Texas and the additional need for education, health care, and transportation.

# School Life: Then and Now

## Pre-Field Trip Activities

### Materials

- Reading Passage 1: Short history of the Old Granite School with photographs
- Timeline
- Reading Passage 2: Excerpt from former student who attended in 1920s
- Image 1: Hand bell
- Image 2: Writing Slate
- Image 3: Teacher's rules
- Compare and Contrast worksheet

### Historical Context of the Old Granite School:

The Falls on the Colorado Museum is housed inside the Old Granite School, which is over 130 years old. Thousands of Marble Falls students went to school in this building. When it was built in 1891, it was originally a men's university, and the students (or their families) had to pay tuition to attend. A few years later, the university began accepting female students. In 1909 the people of Marble Falls voted to make it a free public school accepting all 11 grades. In those early years, students finished their education in grade 11 (Texas Schools adopted the 12-grade system around 1940).

Generations of Marble Falls students attended classes in the Old Granite School. By the 1980's only kindergarten students and school administrative offices were in the building. It sat vacant for a few years, until The Falls on the Colorado Museum moved into it in 2010. The museum now uses the building to preserve and present the history of Marble Falls and Central Texas.

# School Life: Then and Now

## Pre-Field Trip Activities

### Instructions:

1. Introduction (10 minutes):
  - a. Have students read the short history of the Old Granite School (Reading Passage 1) and review the timeline. Show students images of the Old Granite School from 100 years ago.
  - b. Ask students to identify differences between school back then and school today.
2. Artifact Exploration (15 minutes):
  - a. Pass around the primary sources related to the Old Granite School (writing slate, hand bell, teacher's rules and Reading Passage 2)
  - b. Allow students to ask questions about the items.
  - c. Discuss each item and compare school 100 years ago versus the present.
3. Comparison Activity (20 minutes):
  - a. Divide students into small groups.
  - b. Give each group a set of source material related to the Old Granite School.
  - c. Have students use the venn diagram on the Compare and Contrast activity page to compare and contrast school life in Marble Falls 100 years ago with school life today.
  - d. Encourage them to discuss differences in classrooms, teaching methods, materials, and student life.
4. Group Presentations (15 minutes):
  - a. Have each group present their findings to the class.
  - b. Discuss similarities and differences between school life then and now as a class.
5. Conclusion (5 minutes):
  - a. Summarize the key differences between school life in Marble Falls then and now.
  - b. Reinforce the idea that schools have changed over time due to advancements in technology, teaching methods, and societal norms.

\*Modification for 7th graders: Add more advanced discussion questions. Encourage students to research and present additional information about the historical context of the Old Granite School and education in Marble Falls.

### Extension Activities:

1. Have students write a short story about a student or teacher in the Old Granite School. They can be creative and make up names for characters but they should use facts and details about school life 100 years ago that they learned in the other activities.
2. Have students write a 5-10 sentences about how they imagine school life might change in the future. Prompt questions can include the following: Imagine students from 100 years in the future could see a picture of your classroom. What do you think they might find odd or different about your class? What do you think might still be the same?

# Reading Passage 1



Marble Falls Alliance University, 1898

## A Short History of the museum building, the Old Granite School:

The Falls on the Colorado Museum is inside the Old Granite School, which is more than 130 years old. Many kids in Marble Falls went to school in this building. When it was built in 1891, it was a school just for boys, and they had to pay money to go there. Later, girls were allowed to go too. In 1909, people in Marble Falls voted to make it a free school for all students through 11th grade. Back then, school ended after 11th grade. A little later, around 1940, Texas schools added 12th grade.

Kids in Marble Falls kept going to school in this building for many years. By the 1980s, kindergarteners and school workers were in the building. But in 2004, the school moved out. It was empty for a while until The Falls on the Colorado Museum moved in during 2010. Now, the museum uses the building to tell stories about the history of Marble Falls and Central Texas.



Old Granite School Building, 1907

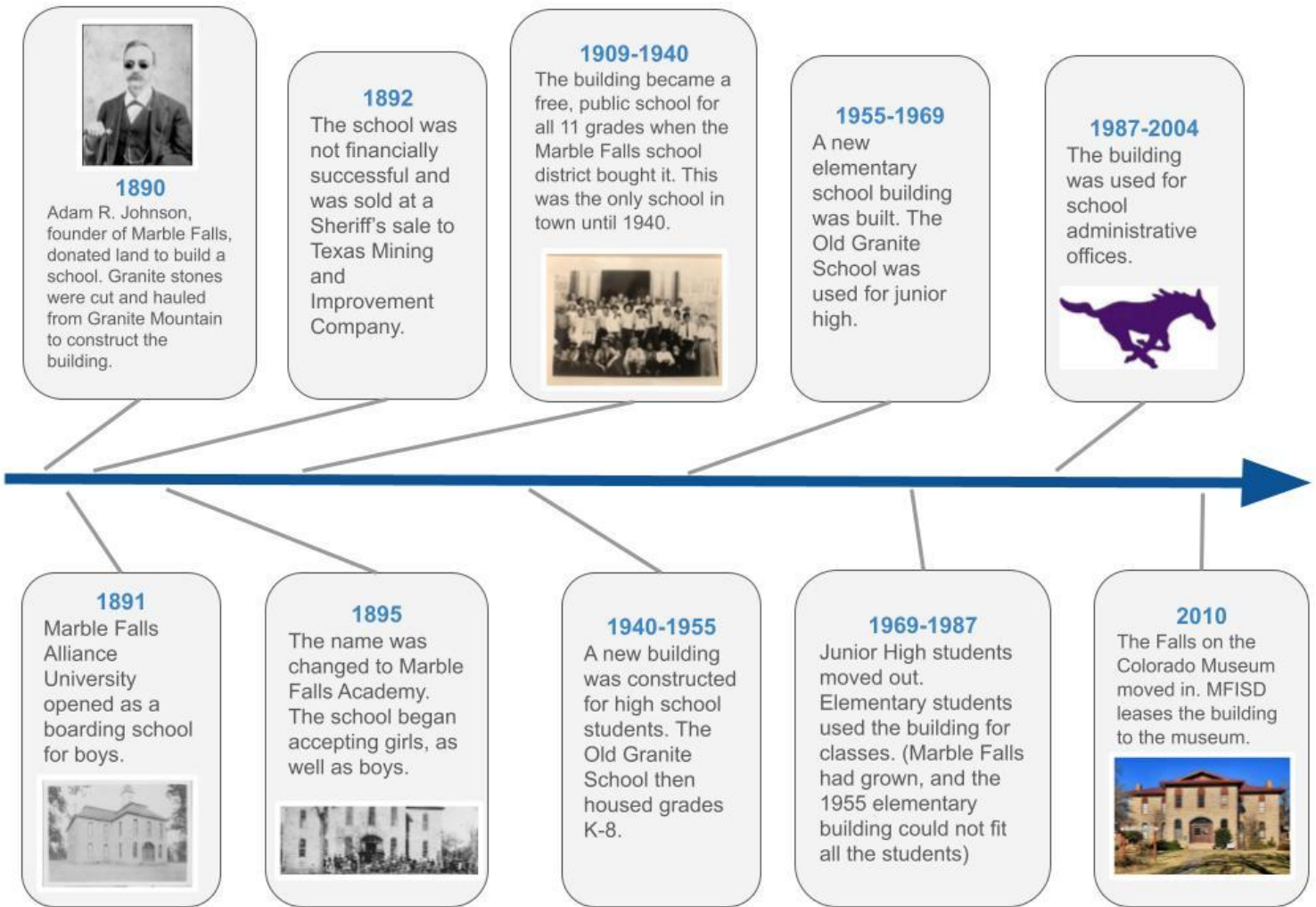


The Falls on the Colorado Museum, 2023



# Timeline

## Timeline of the Old Granite School



# Reading Passage 2

Read this excerpt from a former student who remembered entering the Old Granite School as a first grader 100 years ago in 1923:

*“There was no gymnasium, no auditorium, no cafeteria, no vocational ag shop or courses, and no turf on the football field, only granite gravel and sandburrs. [...] School buses as such were some years coming, although various families pooled transportation in their Model Ts and a lot of kids walked to school, and some, coming from longer distances, rode horseback.”*

- Walter Richter, during a speech re-dedicating the Old Granite School Building, October 24, 1982.



Ann Miller Harrison's class pictured in front of the Old Granite School. Circa 1915. Madolyn Frasier Collection

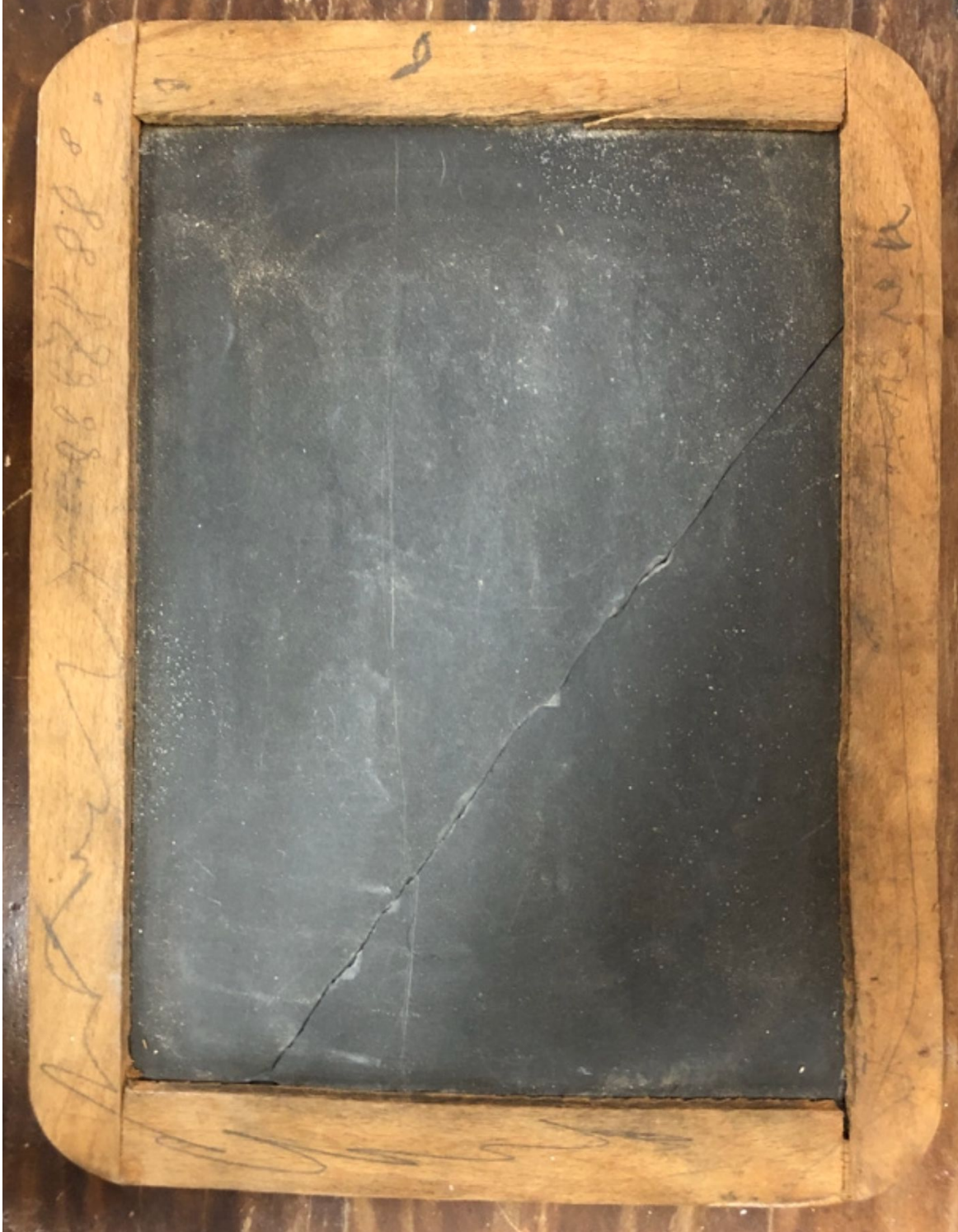
# Image 1

## Hand Bell



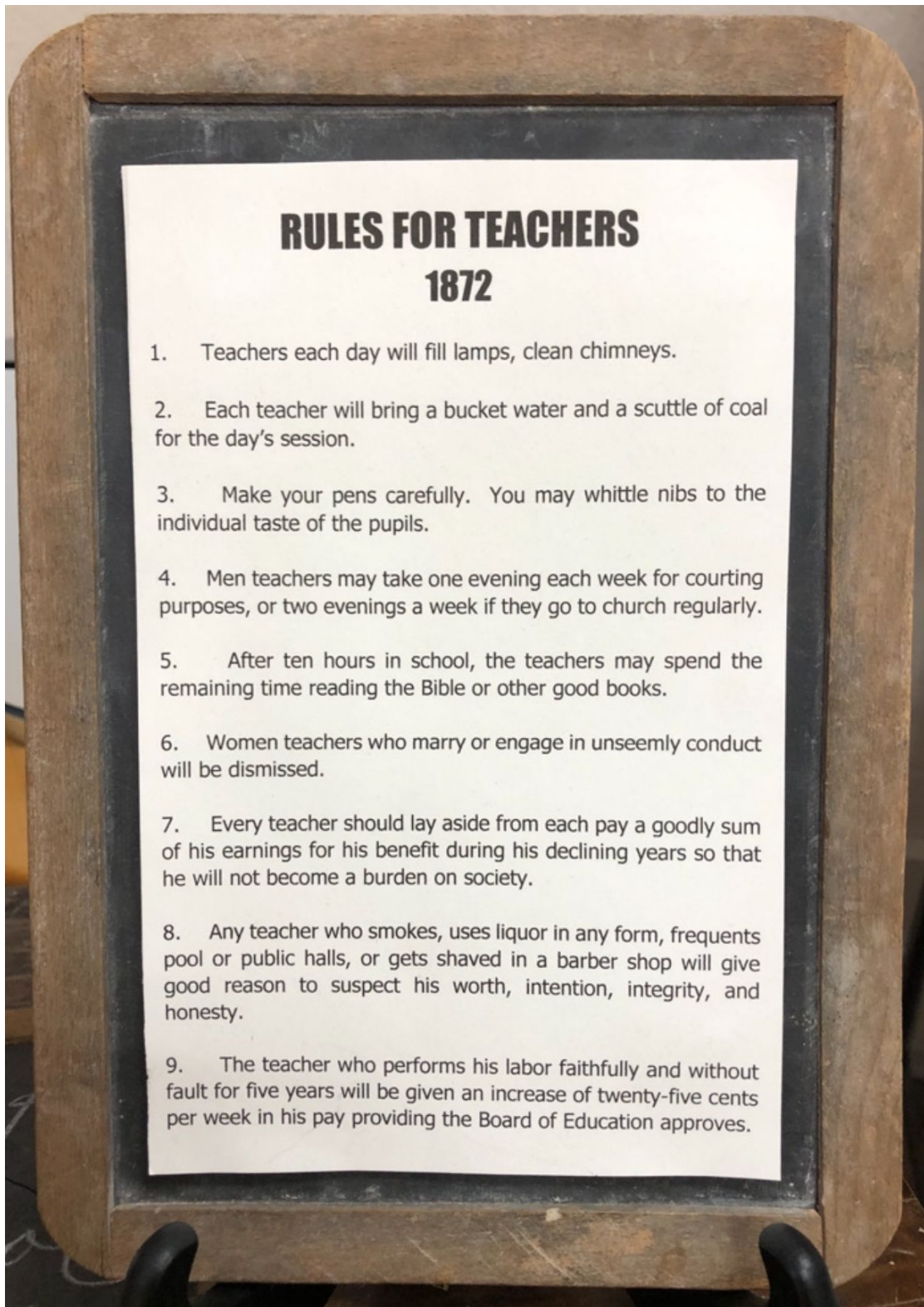
# Image 2

## Writing Slate



# Image 3

## 1872 Rules for Teachers



# Compare and Contrast

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Directions: Look at the sources (list). Find similarities and differences between school life 100 years ago and today by completing the Venn diagram below. List details from the photos and what you see in your own classroom.

**School Today**

**Old Granite School**

# Introduction to the American Bison: Lesson Plan

**Objective:** The purpose of this lesson is for students to familiarize themselves with the parts and geographic range of the American Bison (AKA buffalo), prior to a field trip to the Falls on the Colorado Museum.

**Grade Levels:** 3-4

## **Applicable TEKS:**

1. 3rd Grade Science
  - a. (12) Organisms and environments. The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - (A) explain how temperature and precipitation affect animal growth and behavior through migration and hibernation and plant responses through dormancy;
    - (B) identify and describe the flow of energy in a food chain and predict how changes in a food chain such as removal of frogs from a pond or bees from a field affect the ecosystem;
    - (C) describe how natural changes to the environment such as floods and droughts cause some organisms to thrive and others to perish or move to new locations; and
    - (D) identify fossils as evidence of past living organisms and environments, including common Texas fossils.
  - b. (13) Organisms and environments. The student knows that organisms undergo similar life processes and have structures that function to help them survive within their environments. The student is expected to:
    - (A) explore and explain how external structures and functions of animals such as the neck of a giraffe or webbed feet on a duck enable them to survive in their environment; and
    - (B) explore, illustrate, and compare life cycles in organisms such as beetles, crickets, radishes, or lima beans.
2. 4th Grade Science
  - a. (12) Organisms and environments. The student describes patterns, cycles, systems, and relationships within environments. The student is expected to:
    - (A) investigate and explain how most producers can make their own food using sunlight, water, and carbon dioxide through the cycling of matter;
    - (B) describe the cycling of matter and flow of energy through food webs, including the roles of the Sun, producers, consumers, and decomposers; and
    - (C) identify and describe past environments based on fossil evidence, including common Texas fossils.

# Introduction to the American Bison: Pre-Field Trip Activity

## Materials:

- Image 1: Diagram of bison parts
- Image 2: Map of historic bison range
- Image 3: Map of current bison range

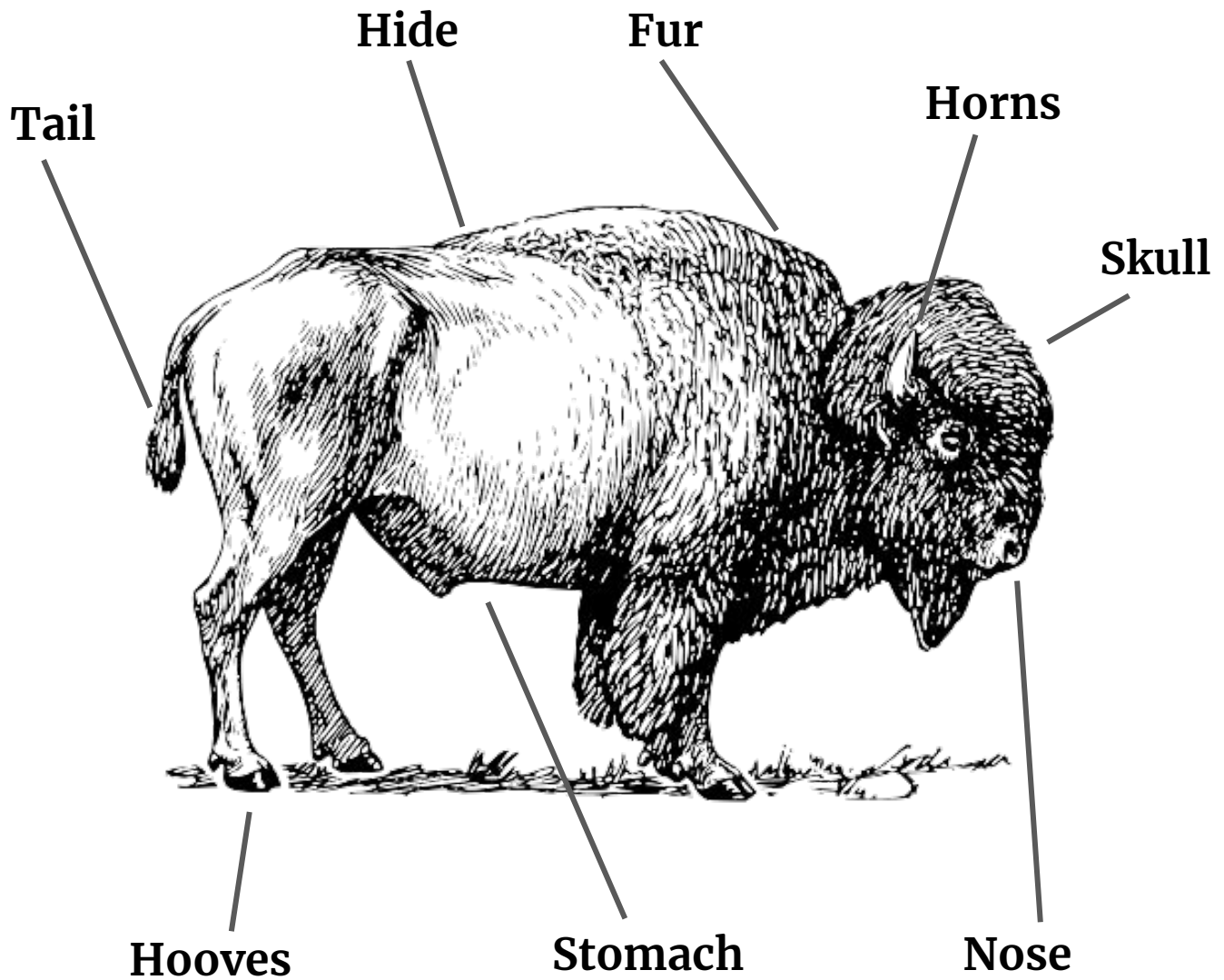
## Instructions

1. To introduce the topic, start a class discussion (5-10 minutes) to find out what students know about the American bison (also called the American buffalo). Questions you might ask include:
  - a. What is a bison? What do they look like?
  - b. When did they live in America? And where?
  - c. Have you ever seen a bison? If so, where?
2. After the introductory discussion, pass out the two maps and the diagram of bison parts to individual students or groups of 2-3 students.
3. Ask students first to study the diagram of bison parts (Image 1). Have students brainstorm and write down 2-3 functions for each part of the bison's body. In addition, ask students to compare Image 2 and Image 3, then brainstorm explanations to the following questions (15-20 minutes):
  - a. Herds of bison did not always stay in the same place, but moved around in patterns of migration. Why?
  - b. Bison used to number in the millions, but today there are only about 30,000 bison living in the wild. Why?
4. Following the previous step's activity, engage the whole class in a discussion of each bison part, asking students to share their ideas then comparing them to the actual uses listed below (10-20 minutes):
  - a. Thick hide of the bison keeps it warm and protects it from predators
  - b. Bison have thick fur in front of their faces to protect them from cold, winter storms.
  - c. Bison fur is thick and warm in the winter but can be molted or shed in the summer when the temperature is warmer.
  - d. Bison hooves are sturdy and help them to dig away snow from the ground in the winter. Their hooves can also be used as a weapon, to kick away predators.
  - e. Bison stomachs have four chambers that have special microorganisms to help them digest the grass that they eat.

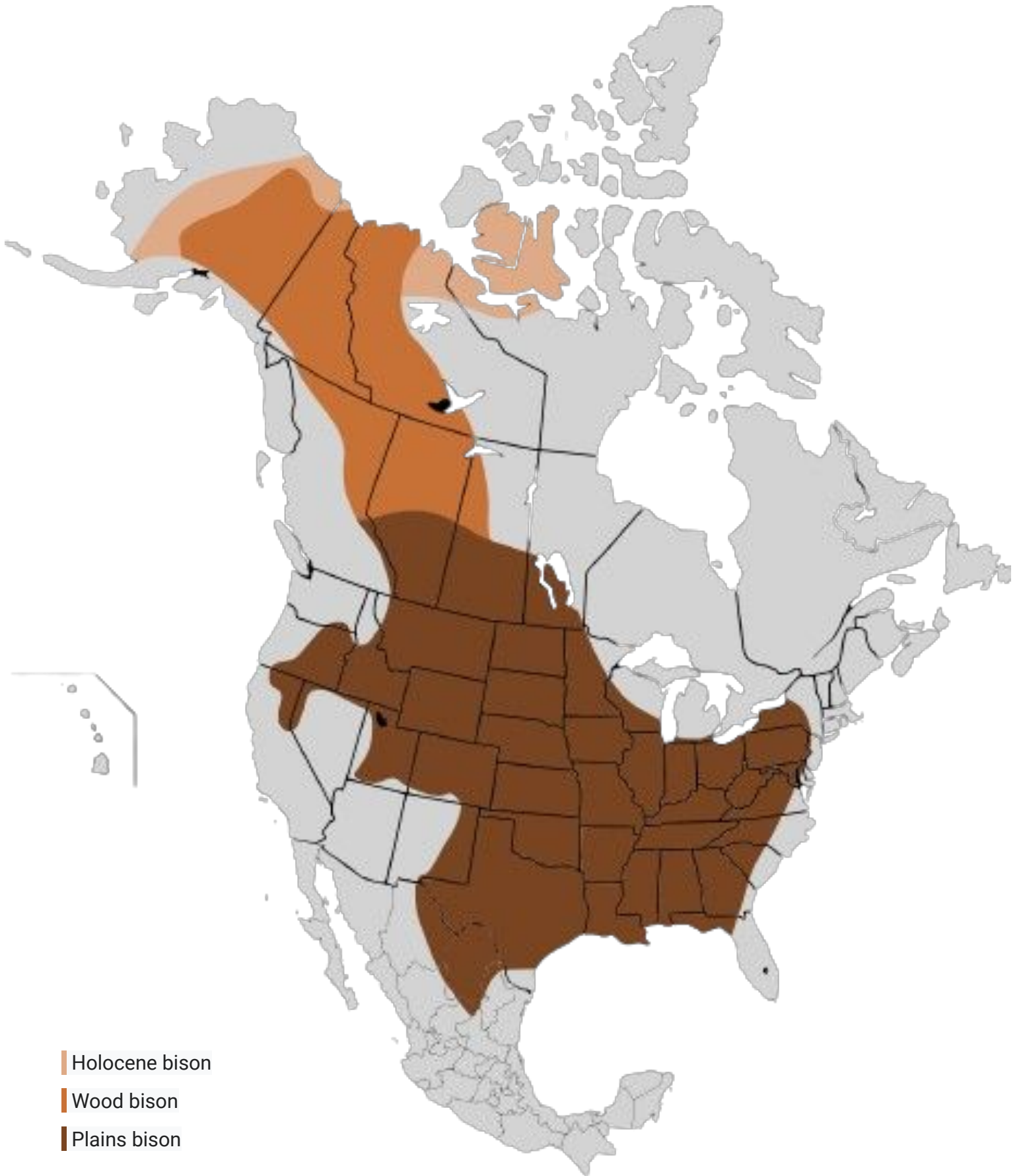


- f. Bison noses are wedge-shaped, which helps them to push snow out of the way when looking for grass to eat in the winter.
  - g. Bison have very thick skulls. Sometimes bison will use their heads as a weapon and they head-butt predators and other bison.
  - h. Both male and female bison have horns for protection.
  - i. Like cows, bison use their tails as a flyswatter to deflect biting and stinging insects.
5. To close the lesson, ask students to volunteer their answers to the questions related to Image 1 and Image 2. Use the following information to assess the accuracy of student responses:
- a. The American bison is the largest land mammal in North America. Bison traveled in herds across a large area of grassland that stretched from Alaska to the Gulf of Mexico during different time periods in history. They played a very important part in the prairie ecosystem, and they were a major resource for the Native Americans. During the fall and winter, they would travel south where it was warmer, then return to the north in the spring to graze upon newly-grown grasslands.
  - b. Bison once roamed in vast herds, but they nearly became extinct in the 19th century due to human activities: commercial hunting and the exposure to diseases from domestic cattle. In addition, the United States intentionally massacred bison herds in order to deprive Native Americans of their resources and accelerate their assimilation to American culture. Through more recent conservation efforts, bison numbers slowly have recovered. Today, about 30,000 wild bison live in North American reserves.

# Diagram of Bison Parts



# Map of the original distribution of bison in North America



# Map showing the distribution of plains bison and wood bison in North America as of 2003.



# Bison and the American Indian: Lesson Plan

**Objective:** The purpose of this lesson is for students to explore the important role bison played in the daily life of American Indians by learning how they used different bison parts and associating historical bison parts with modern items.

**Grade Levels:** 4

## **Applicable TEKS:**

### 1. 4th Grade Social Studies

- a. (1) History. The student understands the origins, similarities, and differences of American Indian groups in Texas before European exploration. The student is expected to:
  - (A) explain the possible origins of American Indian groups in Texas;
  - (B) identify and compare the ways of life of American Indian groups in Texas before European exploration such as the Lipan Apache, Karankawa, Caddo, and Jumano;
  - (C) describe the cultural regions in which American Indians lived such as Gulf, Plains, Puebloan, and Southeastern; and
  - (D) locate American Indian groups remaining in Texas such as the Ysleta Del Sur Pueblo, Alabama-Coushatta, and Kickapoo.
- b. (9) Economics. The student understands the basic economic activities of early societies in Texas. The student is expected to:
  - (A) explain the economic activities various early American Indian groups in Texas used to meet their needs and wants such as farming, trading, and hunting; and
  - (B) explain the economic activities early settlers to Texas used to meet their needs and wants.
- c. (19) Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
  - (A) differentiate between, locate, and use valid primary and secondary sources such as technology; interviews; biographies; oral, print, and visual material; documents; and artifacts to acquire information about Texas;
  - (B) analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;

- (C) organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps; and
  - (D) identify different points of view about an issue, topic, historical event, or current event.
- d. (21) Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
- (A) use social studies terminology correctly;
  - (B) incorporate main and supporting ideas in verbal and written communication;
  - (C) express ideas orally based on research and experiences; and
  - (D) create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies.

# Bison and the American Indian Pre-Field Trip Activity

## Materials:

- Image 1 - Diagram of Bison Parts
- Bison Parts Worksheet
- Image 2 - Bison Parts and Their Uses

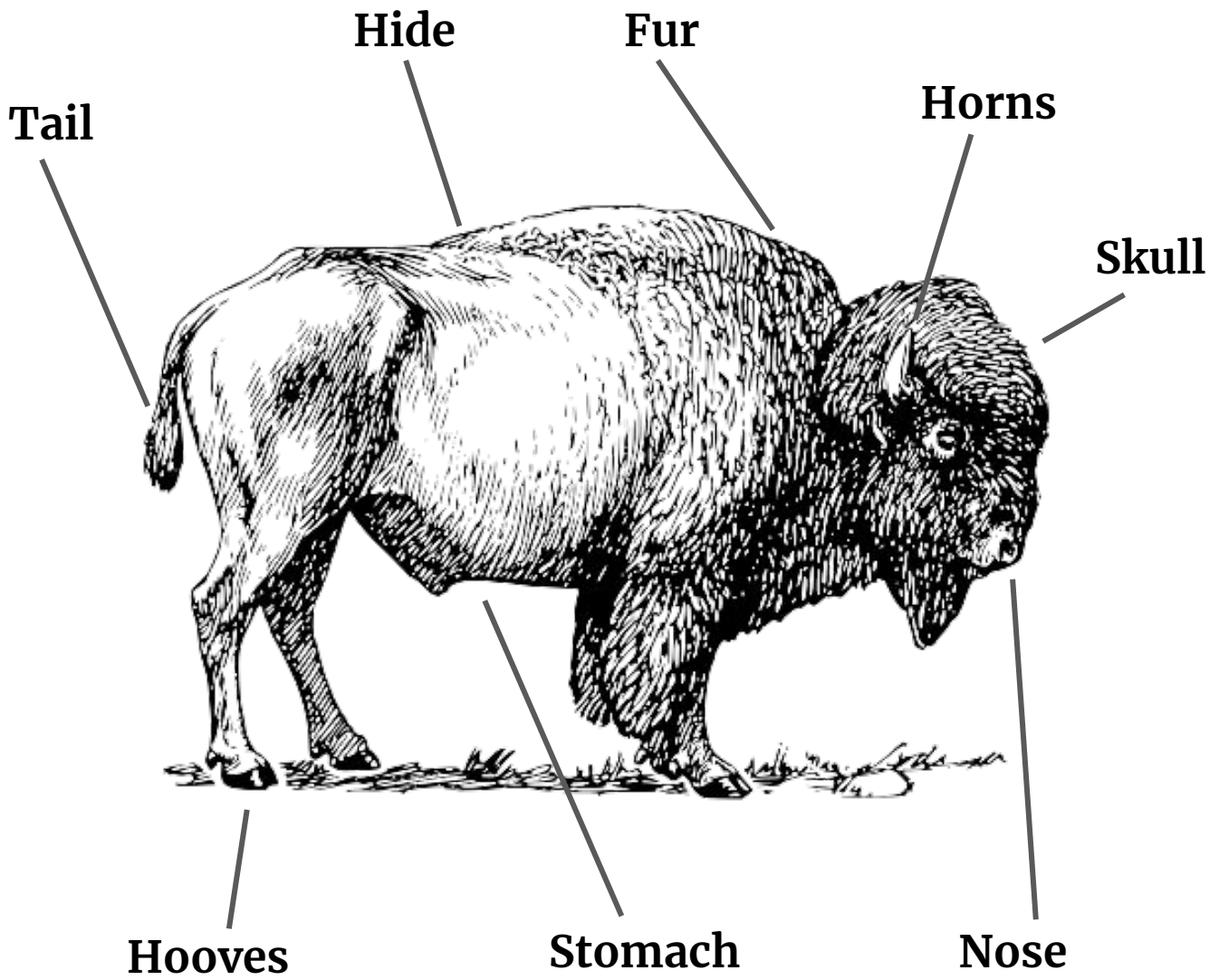
## Instructions

1. To introduce the topic, start a class discussion (5-10 minutes) with students concerning where their families go to get household supplies, like food and tools. Questions you might ask include:
  - a. Where does your family go to buy groceries?
  - b. Is your family more likely to make things at home, or buy ready-to-use items at the store?
2. After the introductory discussion, pass out the Bison Parts Worksheet and the diagram of bison parts (Image 1) to individual students or groups of 2-3 students. As you do so, explain to students that ancient Native Americans did not have modern conveniences like grocery stores and restaurants. Instead, they relied on their environment to supply their needs, and different parts of animals like a bison could have a variety of uses.
3. Ask students to use the diagram of bison parts (Image 1) to match different parts of the bison to the items that could be made from them on the Bison Parts Worksheet (15-20 minutes). Emphasize to students that it is okay to not know the answer! Encourage them to make educated guesses based on the nature and function of each bison part and item.

NOTE: There are important internal parts of the bison that are not labeled in Image 1, such as bones, tendons, and meat (muscles, fat, etc). Make sure students are aware that they should consider these elements as well when brainstorming about the items.

4. After students have finished the worksheet, distribute copies of Bison Parts and Their Uses (Image 2) or otherwise display the chart so that students can check their answers. Ask students about which item-part matches confused them and explain as needed.
5. Extension: Divide students into small groups and have them brainstorm additional items that bison parts could have provided for people. Have them present their findings and reasoning to the rest of the class.

# Diagram of Bison Parts





# Bison Parts Worksheet

Where can you go to find all the things you need on a daily basis in one place? For most of us, that's a superstore, like Walmart. The American Bison was the historical equivalent of a Walmart for Native Americans. The bison provided the Native Americans with everything they needed for survival.

Using the bison chart (Image 1), identify which parts of the bison were used to make the following items.

Pot/storage container \_\_\_\_\_

Flyswatter \_\_\_\_\_

Cup and spoon \_\_\_\_\_

Pieces of wood/fuel starter \_\_\_\_\_

canteen/water bottle \_\_\_\_\_

Pillow stuffing \_\_\_\_\_

Beef jerky \_\_\_\_\_

Clothing/Shoes \_\_\_\_\_

Trowel/digging utensil \_\_\_\_\_

Beads (for necklace) \_\_\_\_\_

Soap \_\_\_\_\_

Small knife/sewing needles \_\_\_\_\_

Game pieces \_\_\_\_\_

Thread \_\_\_\_\_

Glue \_\_\_\_\_

# Bison Parts and Their Uses

## 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

**Skull:** Prayer Ceremonies

**Teeth:** Beads for Necklace



**Fat:** Soap, Cooking Oil

**Tongue:** Best Part of the Meat

**Tendons:** String, Thread

**Beard:** Ornaments for Apparel and Weapons

**Bones:** Knives, Arrow-heads, Shovels, Scrapers, Winter Sleds, Saddle Trees, War Clubs, Game Dice

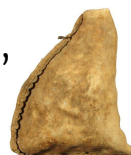
**Bladder:** Sinew Pouches, Quill Pouches, Small Medicine Bags

**Hooves:** Glue, Rattles

**Hair:** Headdresses, Saddle Pad Filler, Pillows, Ropes, Halters



**Stomach:** Buckets, Cups, Dishes, Cooking Pots



**Bison chip:** Fuel



# The Early Bison Hunt: Lesson Plan

**Objective:** Students will understand that changes in technology have led to different bison hunting techniques over time.

**Grade Levels:** K-4, 7

## **Applicable TEKS:**

1. Kindergarten Social Studies
  - a. (12) Science, technology, and society. The student understands ways technology is used in the home and school and how technology affects people's lives. The student is expected to:
    - (A) identify examples of technology used in the home and school;
    - (B) describe how technology helps accomplish specific tasks and meet people's needs; and
    - (C) describe how his or her life might be different without modern technology.
  - b. (13) Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
    - (A) gather information about a topic using a variety of valid oral and visual sources such as interviews, music, pictures, symbols, and artifacts with adult assistance; and
    - (B) sequence and categorize information.
  - c. (14) Social studies skills. The student communicates in oral and visual forms. The student is expected to:
    - (A) place events in chronological order;
    - (B) use social studies terminology related to time and chronology correctly, including before, after, next, first, last, yesterday, today, and tomorrow;
    - (C) express ideas orally based on knowledge and experiences; and
    - (D) create and interpret visuals, including pictures and maps.
  - d. (15) Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

## 2. 1st Grade Social Studies

- a. (15) Science, technology, and society. The student identifies individuals who created or invented new technology and understands how technology affects daily life, past and present. The student is expected to:
  - (A) describe how technology has affected the ways families live;
  - (B) describe how technology has affected communication, transportation, and recreation
- b. (16) Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
  - (A) gather information about a topic using a variety of valid oral and visual sources such as interviews, music, pictures, symbols, and artifacts with adult assistance; and
  - (B) sequence and categorize information.
- c. (17) Social studies skills. The student communicates in oral, visual, and written forms. The student is expected to:
  - (A) use a simple timeline to distinguish among past, present, and future;
  - (B) use a calendar to describe and measure time in days, weeks, months, and years;
  - (C) express ideas orally based on knowledge and experiences;
  - (D) create and interpret visual and written material; and
  - (E) use social studies terminology correctly.
- d. (18) Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

## 3. 2nd Grade Social Studies

- a. (13) Science, technology, and society. The student understands how science and technology have affected life, past and present. The student is expected to:
  - (A) describe how science and technology have affected communication, transportation, and recreation; and
  - (B) explain how science and technology have affected the ways in which people meet basic needs.
- b. (15) Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
  - (A) gather information about a topic using a variety of valid oral and visual sources such as interviews, music, pictures, maps, and artifacts; and
  - (B) interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, predicting, comparing, and contrasting.

- c. (16) Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
  - (A) describe the order of events by using designations of time periods such as historical and present times;
  - (B) apply vocabulary related to chronology, including past, present, and future;
  - (C) create and interpret timelines for events in the past and present;
  - (D) use social studies terminology correctly;
  - (E) express ideas orally based on knowledge and experiences; and
  - (F) create written and visual material such as stories, maps, and graphic organizers to express ideas.
- d. (17) Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

#### 4. 3rd Grade Social Studies

- a. (13) Science, technology, and society. The student understands how individuals have created or invented new technology and affected life in various communities, past and present.
- b. (14) Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
  - (A) gather information, including historical and current events and geographic data, about the community using a variety of resources;
  - (B) interpret oral, visual, and print material by sequencing, categorizing, identifying the main idea, distinguishing between fact and opinion, identifying cause and effect, comparing, and contrasting; and
  - (C) interpret and create visuals, including graphs, charts, tables, timelines, illustrations, and maps.
- c. (15) Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
  - (A) use social studies terminology correctly;
  - (B) create and interpret timelines;
  - (C) apply the terms year, decade, and century to describe historical times;
  - (D) express ideas orally based on knowledge and experiences; and
  - (E) create written and visual material such as stories, pictures, maps, and graphic organizers to express ideas.
- d. (16) Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others. The student is expected to use problem-solving and decision-making processes to identify a problem, gather information, list and consider options, consider advantages and disadvantages, choose and implement a solution, and evaluate the effectiveness of the solution.

5. 4th Grade Social Studies

- a. (1) History. The student understands the origins, similarities, and differences of American Indian groups in Texas before European exploration. Student is expected to:
  - (A) explain the possible origins of American Indian groups in Texas;
  - (B) identify and compare the ways of life of American Indian groups in Texas before European exploration such as Lipan Apache, Karankawa, Caddo, & Jumano;
  - (C) describe the cultural regions in which American Indians lived such as Gulf, Plains, Puebloan, and Southeastern; and
  - (D) locate American Indian groups remaining in Texas such as the Ysleta Del Sur Pueblo, Alabama-Coushatta, and Kickapoo.
- b. (4) History. The student understands the political, economic, and social changes in Texas during the last half of the 19th century. The student is expected to:
  - (A) describe the impact of the Civil War and Reconstruction on Texas;
  - (B) explain the growth, development, and impact of the cattle industry such as contributions made by Charles Goodnight, Richard King, and Lizzie Johnson;
  - (C) explain the effects of the railroad industry on life in Texas, including changes to cities and major industries; and
  - (D) explain the effects on American Indian life brought about by the Red River War, building of U.S. forts and railroads, and loss of buffalo.
- c. (9) Economics. The student understands the basic economic activities of early societies in Texas. The student is expected to:
  - (A) explain the economic activities various early American Indian groups in Texas used to meet their needs and wants such as farming, trading, and hunting; and
  - (B) explain the economic activities early settlers to Texas used to meet their needs and wants.
- d. (19) Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of valid sources, including technology. The student is expected to:
  - (A) differentiate between, locate, and use valid primary and secondary sources such as technology; interviews; biographies; oral, print, and visual material; documents; and artifacts to acquire information about Texas;
  - (B) analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
  - (C) organize and interpret information in outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps; and
  - (D) identify different points of view about an issue, topic, historical event or current event.
- e. (21) Social studies skills. The student communicates in written, oral, and visual forms. The student is expected to:
  - (A) use social studies terminology correctly;
  - (B) incorporate main and supporting ideas in verbal and written communication;
  - (C) express ideas orally based on research and experiences; and
  - (D) create written and visual material such as journal entries, reports, graphic organizers, outlines, and bibliographies.

6. 7th Grade Social Studies

- a. (2) History. The student understands how individuals, events, and issues through the Mexican National Era shaped the history of Texas.
- b. (6) History. The student understands how individuals, events, and issues shaped the history of Texas from Reconstruction through the beginning of the 20th century. The student is expected to:
  - i. (A) identify significant individuals, events, and issues, including the factors leading to the expansion of the Texas frontier, the effects of westward expansion on American Indians, the buffalo soldiers, and Quanah Parker
  - ii. (C) identify significant individuals, events, and issues, including the effects of the growth of railroads and the contributions of James Hogg
- c. (19) Science, technology, and society. The student understands the impact of scientific discoveries and technological innovations on the political, economic, and social development of Texas. The student is expected to:
  - i. (A) compare types and uses of technology, past and present
  - ii. (D) evaluate the effects of scientific discoveries and technological innovations on the use of resources such as fossil fuels, water, and land
- d. (20) Social studies skills. The student applies critical-thinking skills to organize and use information acquired through established research methodologies from a variety of valid sources, including technology. The student is expected to:
  - i. (A) differentiate between, locate, and use valid primary and secondary sources such as media and news services, biographies, interviews, and artifacts to acquire information about Texas;
  - ii. (B) analyze information by applying absolute and relative chronology through sequencing, categorizing, identifying cause-and-effect relationships, comparing, contrasting, finding the main idea, summarizing, making generalizations and predictions, and drawing inferences and conclusions;
  - iii. (C) organize and interpret information from outlines, reports, databases, and visuals, including graphs, charts, timelines, and maps

# The Early Bison Hunt: Pre-Visit Activity

## Materials:

- Image 1: Atlatl
- Watch video “How to Throw an Atlatl” by National Geographic <https://www.youtube.com/watch?v=NHgUMUk3YwY>
- Image 2: Clovis spear points
- Image 3: Hunting Tactics Before Horses
- Image 4: Bow and Arrow on Horseback
- Image 5: Parts of an Arrow
- Reading Passage - Francis Parkman
- Image 6: Firearms and the Railroad

## Type of Activity: Varied based on grade level:

1. Elementary: Teacher-led discussion of shifts in hunting technology, reinforced with worksheet
2. Secondary: Document-Based Question

## Elementary Instructions:

1. Begin a class discussion by asking students if they know what a bison (aka buffalo) is and if they know how people used to hunt them. **Have students record their responses under Question 1 in the worksheet.** Display Image 1 and Image 2, as well as the video of hunting with an atlatl, explaining that this was one of the earliest tools used for hunting bison. The points were fashioned out of stone, such as obsidian, chert or jasper. Early hunters would mount the points onto the end of a spear and propel it with an atlatl.
2. Ask students to imagine themselves as an early human hunter with nothing but an atlatl. What strategies would you use to hunt safely and successfully? **Have students record their responses under Question 2 in the worksheet.** Explain that spears could be used only in close proximity and at great risk to the hunter. To simply sneak up on a herd and take down an animal was very difficult and dangerous. Bison can run up to 35 miles per hour and they have sharp horns and powerful feet. It would take many spears thrown very hard and at just the right points to take down a full-sized bison. Early humans learned special techniques for successfully hunting bison. Display Image 3 and ask students to evaluate this strategy. There were other strategies that were used as well. For example, a group of hunters might drive the herd of bison into a ravine, a narrow canyon, or a river to make an effective trap.
3. Display Images 4 and 5. Explain that as technology advanced, people developed new tools, such as the bow and arrow, which changed the way bison were hunted. At first, arrow points continued to be made of stone, but trade with European settlers eventually introduced metal arrowheads. In addition, explain that there were no horses in North America until the Spanish explorers brought them over in the late 1400s. Ask students to imagine how hunting bison would have been different with bows and arrows versus



atlatls, and horses versus on foot. **Have students record their responses under Question 3 in the worksheet.**

4. **Display the Reading Passage. Read out Question 4 from the worksheet and have students record their responses.**
5. **Display Image 6. Discuss how this represents a significant change in hunting techniques and how technology continued to evolve. Ask students to consider the long-term consequences of these hunting tactics. **Have students record their responses under Question 5 in the worksheet.****
6. **Extension: Divide the students into small groups. Give each group a piece of paper and ask them to draw a timeline. Have them place the atlatl, Clovis spear points, horses, bow and arrow, and firearms on the timeline in chronological order. Encourage them to add any other important technological advancements they know of. Have each group present their timeline to the class.**

### **Secondary Instructions:**

1. The secondary version of this activity is designed to be more independent and student-centered, but the teacher can certainly use the information and worksheet from the elementary version to activate prior knowledge or fill information gaps.
2. Distribute copies of Images 1-6 and the Reading Passage to each student, or otherwise find a way that each student can view the materials. Have students watch the atlatl video as well.
3. Ask students to respond to the following prompt on paper or in a word processor on their school device, using the materials from Step 2 as evidence: **“Explain how innovations in technology impacted the way in which humans hunted bison in North America.”**
4. Students should attempt to use all or most of the documents as evidence in their response. The recommended response length is 3-5 paragraphs. The exact number of documents used, as well as the target length of the response, ultimately falls to teacher discretion.

# The Early Bison Hunt: Student Worksheet

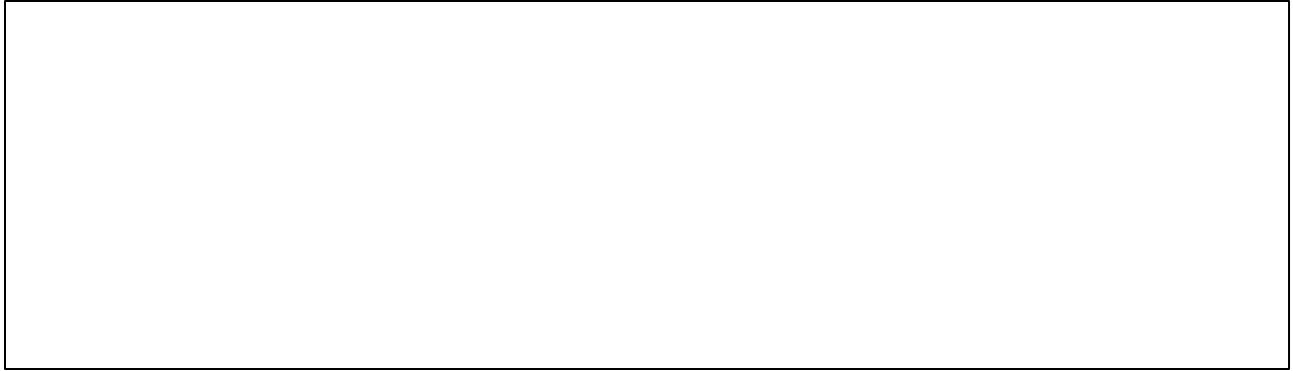
Instructions: Your class is talking about how changes in technology affected the way in which humans hunted bison over time. At certain times, your teacher will pause the discussion and ask you to write down your thoughts in response to certain questions. Please record your answers in the spaces below.

1. Brainstorm: What tools would be effective in taking down a large animal like a bison?

2. Imagine that you are an early human hunter, armed only with the weapon from the video. What are some potential strategies you could employ to successfully hunt a bison?

3. Over time, many Native Americans started using the bow and arrow for hunting bison. After horses were introduced to the Americas following European contact, they also rode on horses. What advantages would these new technologies have over previous hunting methods?

4. Humans invented firearms over 500 years ago, but in the early days they were slow and inefficient. By the 1800s, however, the effectiveness of firearms was much improved. Based on your own knowledge and the description found in the reading passage, how did firearms impact the way in which humans hunted bison?



5. Take a look at Image 6, which depicts people shooting bison from a train. What might be the long term consequences of hunting bison in such a manner?



# Image 1

## Atlatl



A hunter uses an atlatl to launch a spear at a prehistoric bison.  
*Illustration courtesy of National Park Service/Patrick Myers. Public Domain*



# Image 2

## Clovis Spear Point



These stone spear points are associated with early modern humans in North America between roughly 13,500–13,000 years ago. The Clovis points would be attached to a spear or dart and thrown using an atlatl.

*Image courtesy of Emma Groeneveld, World History Encyclopedia. Public Domain.*

# Image 3



**“Stalking buffalo in wolf skins” by George Catlin (1796–1872)**  
*Image courtesy of Smithsonian American Art Museum. Retrieved from: [commons.wikimedia.org](https://commons.wikimedia.org)*

# Image 4

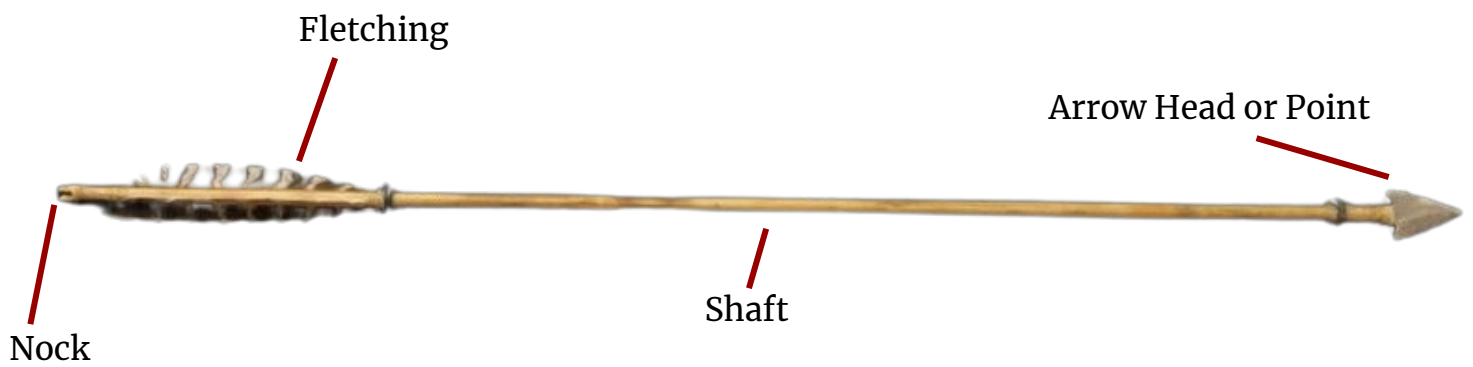
## Bow and Arrow



“Buffalo Hunt, Chase” lithograph by George Catlin, 1884.  
*Image courtesy of Smithsonian Art Museum. Public Domain.*

# Image 5

## Parts of an Arrow





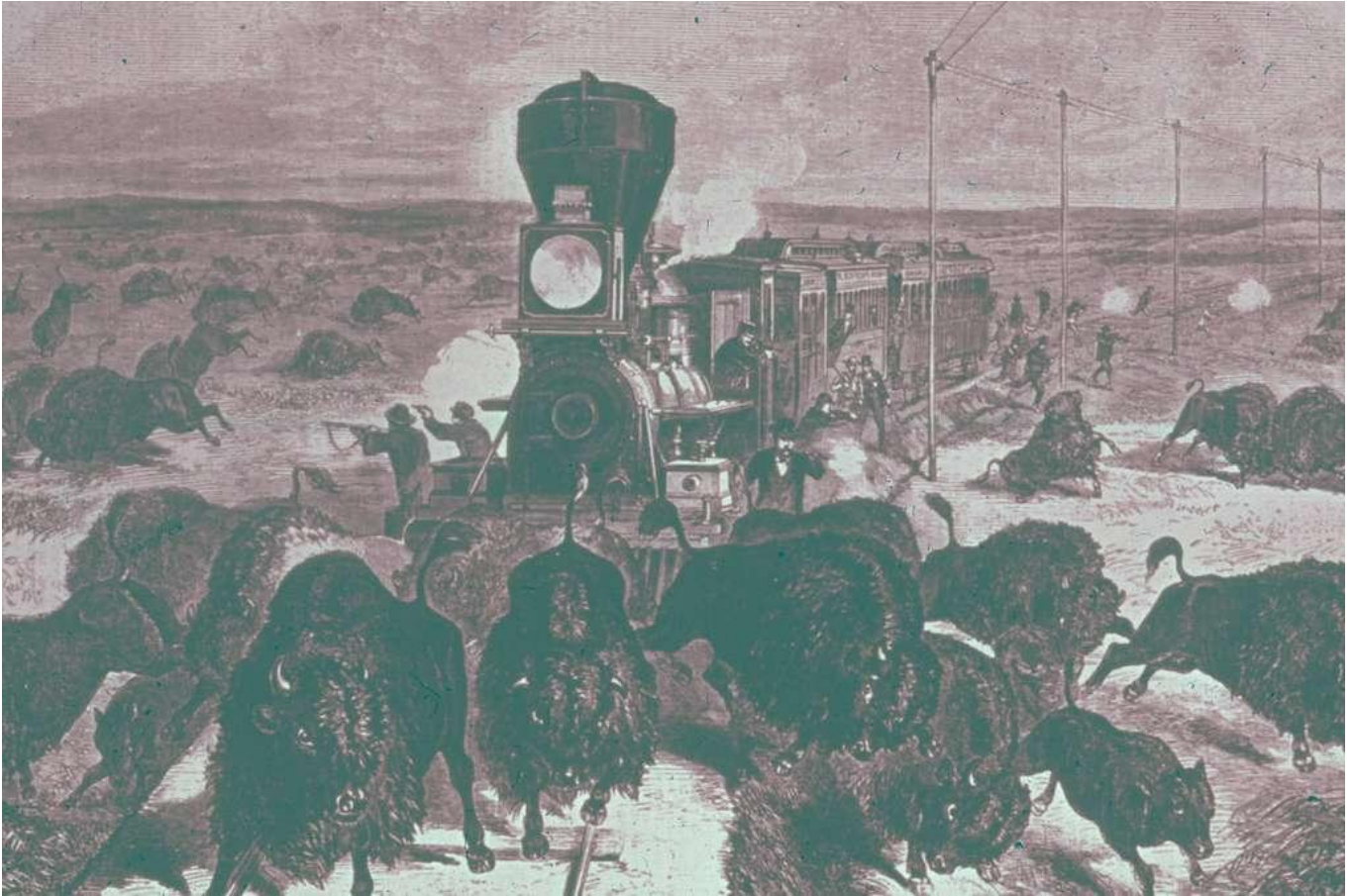
# Reading Passage

**Excerpt from Francis Parkman's book, *The California and Oregon Trail* (1849)**

“In the midst of the flying herd, where the uproar and the dust are thickest, it never wavers for a moment; he drops the rein and abandons his horse to his furious career; he levels his gun, the report sounds faint amid the thunder of the buffalo ... A practiced and skillful hunter, well mounted, will sometimes kill five or six cows in a single chase, loading his gun again and again as his horse rushes through the tumult. An exploit like this is quite beyond the capacities of a novice...With a bold and well trained horse the hunter may ride so close to the buffalo that as they gallop side by side he may reach over and touch him with his hand; nor is there much danger in this as long as the buffalo's strength and breath continue unabated; but when he becomes tired and can no longer run at ease, when his tongue lolls out and foam flies from his jaws, then the hunter had better keep at a more respectful distance; the distressed brute may turn upon him at any instant; and especially at the moment when he fires his gun.”

# Image 6

## Firearms and the Railroad



People shoot at a herd of bison from a railroad. The illustration is from *Frank Leslie's Illustrated Newspaper* published June 3, 1871.  
*Image courtesy of Library of Congress.*

# Post-Visit Reflection

The following class reflection ideas are intended to help your students reflect on what they saw, what they learned, and how it relates both to their school lessons and to their community.

## Post-Visit Class Reflection Ideas:

- Review the experience chart your class created before the visit. What did they see during their tour? What did they learn?
- Have students write letters to the Museum about their visit – we love hearing from you! Letters and projects can be sent to The Falls on the Colorado Museum, PO Box 1333, Marble Falls, TX 78654 or via email at [focmuseum@gmail.com](mailto:focmuseum@gmail.com).
- Have students record their experiences at the Museum in a creative journal project using words, drawings, or pictures. Then, have students share one or two things they found most interesting with the class.
- Create a classroom museum. Discuss with students the importance of museums in preserving culture and history for future generations, and have students draw a picture or bring in an object from home to share with the class. Why is the object important to you, and why should it be included in the class museum?