



ETHNOBOTANY: PEOPLE AND PLANTS

Lesson 5: Changing Landscapes

Utah Core Curriculum Alignment 4th Grade Social Studies Standard 2:	Intended Learning Outcomes: Science
Students will understand how Utah's history has been shaped by many diverse people, events and ideas.	Extension Lesson: <ul style="list-style-type: none">• Use observations to construct a reasonable explanation.• Explain science concepts and principles using their own words and explanations.• Use available reference sources to obtain information.

Enduring Understandings

There is documented evidence of the presence of humans for over 10,000 years in the geographical area known as the State of Utah. Spanish explorers (Juan Rivera and Dominguez/Escalante) in the 1700s were the first Europeans who encountered these native people. Other European explorers, trappers, and immigrant settlers soon followed. Over time, each group used the native plants they found here as rich resources for survival.

Essential Questions

Who were the different groups of people who settled in Utah? How did these different groups use the native plants found here for their survival? How did that shape Utah's history?

Background Information

See enclosed Lesson Six document: A Brief History of Utah – Paleo to present day (historytogo).



Lesson Plan

Materials

BB = Materials included in Botany Bin

- BB Native American Uses of Plants Indigenous to Utah Table, laminated
- BB Immigrant Uses of Native and Introduced Plants
- BB A Brief History of Utah (from www.historytogo.utah.gov) divided into five sections. Make a copy of one (different) section for each student.
- 12" x 3" strips of paper; one for each student for the warm-up activity; five additional strips for the group activity
- highlighters
- Post-it notes
- Optional: BB Plant Name and Use Matching Cards, laminated
- Optional: BB Key: Plant Name and Use Matching Table, laminated
- Optional: BB Acorn Pancakes, Dandelion Salad & 33 Other Recipes
 - Optional: ingredients and cooking utensils for a recipe from the above book.
- Optional: "How Grizzly Bear Climbed the Mountain" in Keepers of the Night, Caduto and Bruchac, or other stories listed in Extensions.

Procedure

Warm-up

Have students write down eight important dates in their lives, starting with their birth, on eight separate Post-it notes. Give them a 12" x 3" strip of paper and have them arrange their events into a chronological timeline on the paper. Hang the strips around room and give students about five minutes to browse over one another's timelines. Discuss how a timeline is a helpful tool for getting a quick "snapshot" of a given time period. Timelines focus attention on some of the most important events in history and allow us to view them with a broad perspective.

Activity

Divide students into five groups. Have each group select a Facilitator, a Recorder, a Reporter, and a Timer. Give each group copies (enough for each person to have his/her own copy) of one section of the Brief History of Utah, highlighters, a second strip of 12" x 3" paper, and Post-it notes. Instruct them to read the section they have been given and highlight important events/dates as they read. Tell them they will have 15 minutes to complete the activity. Assign tasks to the student roles in the groups as follows:

- The Timer will give students 7-8 minutes to read, and will keep the group informed of time remaining to complete the activity. He/she will signal the group to begin the discussion.
- The Facilitator will then have each person relate an important date and the corresponding event.



- The Recorder will write each student's response on a Post-it note.
- The Facilitator will have the students take turns around the group until they complete all significant dates. The facilitator will help students work together to arrange the dates/events in chronological order.
- Each Reporter will present the group's timeline to the class.

Students will put the four group timelines together and arrange them into one entire chronological line. A whole group discussion and clarifications should take place once the timeline is completed. The timeline should be displayed for reference throughout the entire unit.

Discussion

Explain the following: As we know, people are highly dependent on plants, and we have always used plants in all aspects of our lives. Native people utilized the plants in their habitat. As they moved from hunter-gatherers to a more agrarian (farming) lifestyle, they manipulated and changed the wild plants to suit their needs. Many of the plants and their uses by early humans have survived to the present day. Groups who left their homelands and immigrated to different areas brought their traditions and knowledge with them, including their knowledge of the plants found in their ecosystems, and the seeds or plants themselves.

Read a few of just the names of plants from each biome on the laminated table: Native American Uses of Plants Indigenous to Utah to your students. Show the plant in its riker as you read. Explain a little bit about the plant such as whether it is a tree, has fruit, is a grass, etc. As you read the name of each plant, stop to have students predict how they think Native Americans used the plant. Acknowledge all responses, making sure to ask students to justify their reasoning. Before you read the uses that are on the sheet, remind them that these are the uses we know about, but some of their responses (if well-reasoned) could also have been correct. After reading a few of the plants and their uses, continue with some processing questions: Did man's evolution from a hunter-gatherer lifestyle to an agrarian lifestyle change the way he used native plants? Did it change the landscape?

Using the Immigrant Uses of Native and Introduced Plants for reference, ask students to think about how settlers and other immigrants would have used the plant resources they found here in Utah. What plants and plant knowledge might each of the immigrant groups have brought with them? Did the immigrant groups share their plant knowledge with the Native Americans? Did the Native Americans share their plant knowledge with the various immigrant groups?

Ask students if there were events they read about in their groups, which they felt were particularly significant; any that they felt had an enduring impact on the biomes and people of Utah? How did these events shape Utah's history? How did these events affect the way of life of Native Americans? For example, what if the pioneers had not learned how to use the plant resources available in some of Utah's inhospitable climates and biomes? Or, if corn had not been introduced to the Native Americans from Mexico, would they have still made their homes here? What effect did the U.S. government's reservation policies and food subsidies (highly refined flour and sugar, saturated fats) have on the health of Native Americans today (alcoholism, diabetes)?



Guide students in reaching this summarization: From the Paleoindian era up to the present day, it is easy to see how the history of the state was shaped by the various groups as they settled here. The impact of people's interactions with the native plants in a given habitat has had lasting effects on both humans and the various habitats.

Extensions

- **Find Your Match:** Students are each given one card (from the Botany Bin), with either the plant name or the plant's use. (Be sure that matching plant use and the plant name cards are in play. These are number and letter coded on a key for teacher's reference). Give a signal and have the students try to find their matching card. Remind them that they will be asked to justify why they think they have matched the plant with its use. When they feel they have found their match, have them line up (partners next to one another). Give a signal and begin at one end of the line to have the students take turns sharing the name of their plant and its use. They need to give their justification for the match they chose. Even though these plants will have a "correct" match, it is possible that the plant could have several uses. If the reasoning is valid, be sure to acknowledge their thinking processes and scientific communication. Support the students who might have difficulty with this activity and encourage their efforts. Corrections can be made as each of the partners share, or at the end of the sharing.
- **Read "How Grizzly Bear Climbed the Mountain",** a Great Basin Shoshone creation story from *Keepers of the Night*. Discuss what happens when a new group or species comes into an occupied area. What was the problem in the story? How was the problem resolved? What are other ways the problem could have been resolved? In the end, did Grizzly redeem himself? Can you see connections in this story with human migrations to North America and other places in the world? After the discussion, students then write a literature response to this story.

The following additional stories from Utah's Native American tribes could be used in a similar way with appropriate questions created for each story:

Goshute: "The Tale of Pia Toya," at www.utahindians.org/Curriculum/pdf/4thgoshute.pdf

Navajo: "Four Worlds: The Dine Story of Creation" in *Keepers of the Earth: Native American Stories and Environmental Activities for Children* by Michael J. Caduto and Joseph Bruchac.

Southern Paiute: "Why the Birds Wear Bright Plumage" at www.suu.edu/faculty/mulderink/servicelearning/muir&nelson.htm or Southern Paiutes: Legends, Lore, Language and Lineage by LaVan Martineau.

Ute: "Pokoh, The Old Man" at <http://www.firstpeople.us/FP-Html-Legends/PokohtheOldMan-Ute.html>

- Have students make one of the recipes found in *Acorn Pancakes, Dandelion Salad and 33 other Recipes* (in Botany Bin books).