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Lakota Ethnobotany for the First Graders

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I-LEARN TEACHING RESOURCES

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Lakota Ethnobotany for the First Graders

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Abstract: In this lesson, students explore the Ethnobotany of the Lakota people, learning about the deep connection between the Lakota culture and native plants. Through a Schoolyard Walk or a Nature Walk, they observe and learn the Lakota names of three plants, their uses and importance to the Lakota people. Students engage in discussions and storytelling, understanding how these plants are like friends to the Lakota, serving various purposes such as in ceremonies or as food sources. The hands-on craft activity allows them to express what they learn by coloring plant parts and conceptualizing the life cycle of a plant. Overall, students gain insights into the harmonious relationship between the Lakota people and the plant kingdom, fostering an appreciation of the indigenous knowledge toward sustainable use of available plant resources.

Keywords

- Ethnobotany for elementary students, land-based lesson for first graders, culturally responsive instruction, conservation of traditional knowledge, Indigenous science, plant-people interaction

Lesson Description

- Grade Level: Grade 1-2

Estimated Time for Completing Activity

- One 40-minute class period.

Learning Outcomes

Students will be able to:

1. Tell the common names as well as Native names of three plants that are important to the Lakota people.
2. Know plant part names such as root, stem, leaf, flower, and fruit and know their functions.

3. State, in simple terms, the way Lakota people use a specific plant in their culture, understanding the connection between plants and Lakota traditions.
 4. Create a simple representation of a Lakota plant, demonstrating creativity and understanding of the significance of plants in Lakota ethnobotany.
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South Dakota Version of the Next Generation Science Standards (NGSS)

- 1-LS1-1 Design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs. * (SEP: 6; DCI: LS1.A, LSI.D; CCC: Structure/Function, Technology)
- 2-LS2-1 Plan and carry out an investigation to determine if plants need sunlight and water to grow. (SEP: 3; DCI: LS2.A; CCC: Cause/Effect)

Oceti Sakowin Essential Understandings and Standards:

1. Standard 1.2 – Describe traditional and contemporary Oceti Sakowin perspectives on communal stewardship of land and natural resources (flora, fauna, geographic and sacred features)
 2. Standard 1.3 – Demonstrate understanding of the interrelationships of Oceti Sakowin people, places, and environments within all tribal lands in South Dakota.
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Helpful Links and References

1. South Dakota Department of Education Science Standards Link:
<https://doe.sd.gov/contentstandards/documents/sdSciStnd.pdf>
 2. Black Elk, L.S. and Wilbur D Flying By, S., 1998. Culturally Important Plants of the Lakota. *Sitting Bull College*.
<https://puc.sd.gov/commission/dockets/HydrocarbonPipeline/2014/HP14-001/testimony/betest.pdf>
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Background

Did you know the Lakota people have a special way of using plants called *Lakota Ethnobotany*? It is like a friendship with plants! They have been using plants for generations, a long time, and each plant is like a helpful friend. For ceremonies, they use sagebrush, Echinacea for medicine, and for yummy food, they use corn and beans. Let's explore more! Plants have different parts like roots, stems, flowers, fruits, and seeds. These parts help plants in their life cycle. Roots

absorb water and hold the plant in the soil, stems give support to all above-ground parts, flowers do pollination and make seeds, fruits protect the seeds, and seeds can grow into new plants. Learning about Lakota ethnobotany helps us see how plants and people can be great friends, helping each other just like friends do!

Materials

1. **Colored Paper** (Provide a variety of colored paper for students to use as the base for their craft. This can represent different parts of the plant.)
2. **Glue** (Have glue available for students to attach different elements of their craft together.)
3. **Markers or Crayons** (Supply markers or crayons for students to add details to their plant representations.)
4. **Scissors** (Ensure each student has access to child-safe scissors for cutting out shapes and details).
5. **Craft Sticks or Pipe Cleaners** (These can be used to create stems or other structural elements for the plant.)
6. **Additional Decorative Materials** (Provide materials like stickers, sequins, or other decorative items for students to embellish their creations.)
7. **Reference Images** (Print or display pictures of Lakota plants for inspiration and reference during the craft activity; Images of White Sage, Corn and Purple Cone Flower are included in this document)
8. **Workspace Protection** (Cover tables with newspaper or disposable tablecloths to protect the workspace from glue and markers.)

Instruction Delivery Methods

1. Begin with a brief introduction to the lesson and explain that the students will be learning about three plants and their parts, and they will be going on a special plant discovery adventure in the schoolyard or a Nature Trail.
2. Show pictures or visuals of three Lakota plants (choose some of over 300 plants from the list by Linda Black Elk, 1998), teach the plant parts and their functions briefly, and explain their importance to spark curiosity. (While you go over the introductory materials, hand in the worksheets for students to complete)

Table 1. Ethnobotanical information (Lakota name and uses) of three plants. Please click on the common names for the USDA Plant images.

Common Name	Lakota Uses (Black Elk 1998)	Lakota Name (Black Elk 1998)
Echinacea, Purple Cone Flower, Blackroot	<i>"...The roots and seed heads are chewed to relieve toothache, sore throat, tonsillitis, stomach-ache, over-perspiration, and to quench thirst. The chewed root and its juices are applied to venomous bites (including snakes, spiders, and bees), and are also applied to burns. The smoke from the burning root is inhaled to treat headaches in people and distemper in horses. The dried, prickly head is used to brush hair. A tincture, or decoctions made from the root is used to boost the immune system and relieve flu and cold symptoms. Echinacea is also being investigated as a treatment for cancer."</i>	ičháǰpe hú, unglákčapi
Big Bluestem, Turkeyfoot	It is an "excellent forage for bison and other grazing animals". Stems are used to make "arrows in mock war games".	pǰeží šašá ókhihe tǰanǰinǰinǰan

White Sagebrush , Cudweed Sagewort , Cudleaf Sage , Ceremonial Sage	<i>"Leaves and stems burned as incense and used for "smudging." That is, the sage is burned, and the smoke breathed in, and wafted all over the body to purify oneself. An infusion of the plant is used to treat stomach disorders, to treat intestinal worms, to calm nerves, and to treat colds, sore throats and diarrhea. This sage is used to form wreaths and bracelets for Sundancers (Wiwayang Wacipi)."</i>	pěží hóta wápe blaskáska
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3. Lead the students on a schoolyard walk, encouraging them to observe various types of plants differing in various characteristics such as the the leaf shape and size.
4. Guide them to find at least three different plants and briefly discuss their observations.
5. While in the schoolyard, share a short story or interesting facts about the plants they find, connecting it to Lakota ethnobotany. (You could also simply choose to reiterate information on the Lakota uses of plants as compiled by Linda Black Elk- See the accompanied PDF)
6. Engage the students in a discussion about their discoveries. Ask questions like: Did you find any plants that are important to people? What do you think these plants might be used for?
7. Return to the classroom for the fun hands-on activity. Using the plants they found as interesting, students can create a representation (model) of one of the plants with craft materials. (If color papers are not available, you can ask students to color papers using crayons. For example, they can color the paper green for the leaves, yellow/pink/red for the flowers etc.

Assessment

1. Observe students during the indoor and outdoor exploration. Note their excitement, engagement, and ability to identify plants and learn about Lakota uses of the plants.

2. Ask students to share one interesting thing they observed about the plants during the outdoor walk.
3. Assess student's completion of the worksheet and creativity in their responses.
4. Look for creativity and connections to the information learned during outdoor exploration.
5. Have students write or draw a short reflection about their outdoor plant discovery. This could include what they found most interesting or what they think the Lakota people might use similar plants for.

(See worksheet on the next pages)

Structure and Function Worksheet

Name: _____

1. Label the plant illustration using the words Roots, leaf, stem, flowers, and fruits. Color green for leaf and stem, brown for roots and yellow for flowers.
2. The purpose of the roots is to absorb _____ and hold plant in the soil. What color are roots? _____.
3. The _____ supports leaf, branches, flowers, and fruits.
4. The purpose of a leaf is to absorb light energy and make food, by the process called _____. Leaf is like a kitchen for plants.
5. The purpose of a flower is to make _____ for the plant. The seeds are protected in fruits in most of the plants. The seeds will then grow into _____, the new plants.

Illustration

Taxon: *Artemisia ludoviciana*

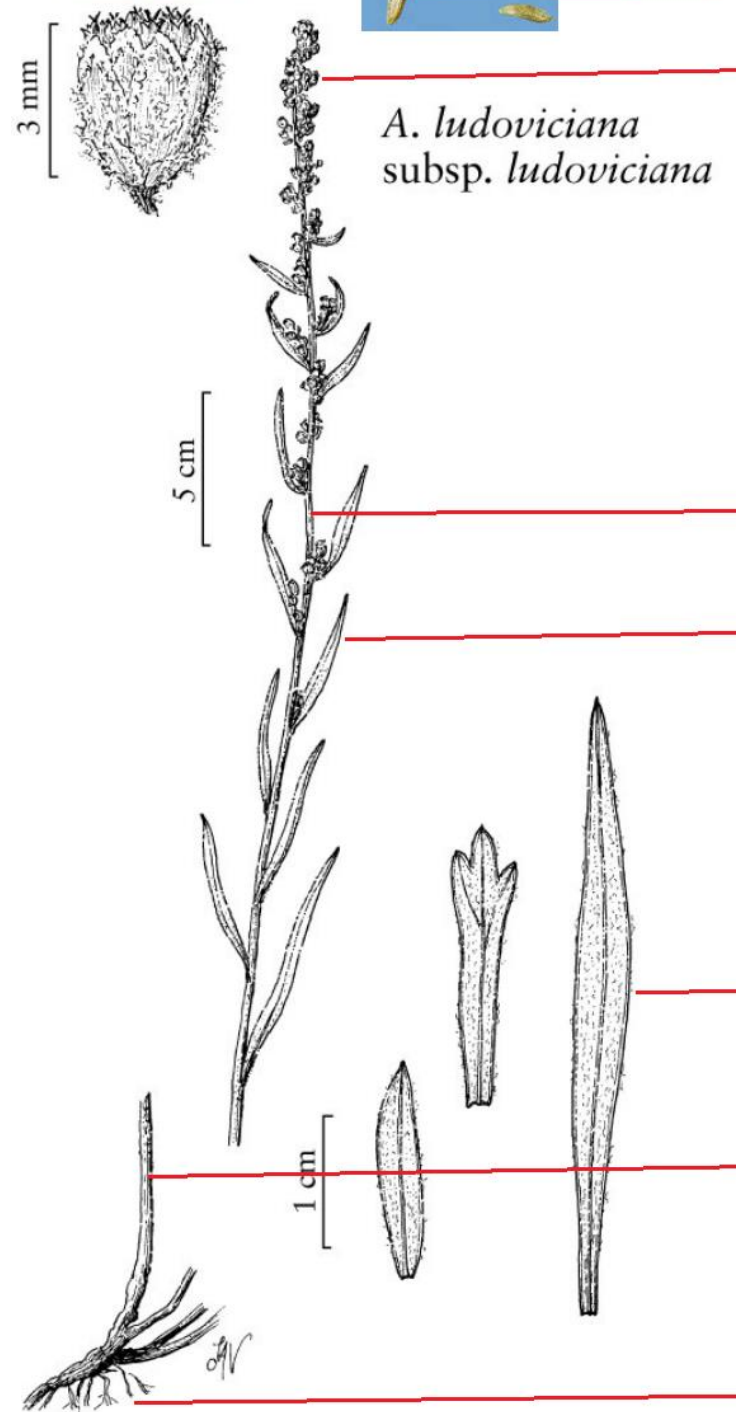


Figure 1. White Sagewort image modified from http://www.efloras.org/object_page.aspx?object_id=57416&flora_id=1

6. Use these words (Seed, Flower, Pollination, New Plant, and Fruit) to complete the following life cycle of a plant.

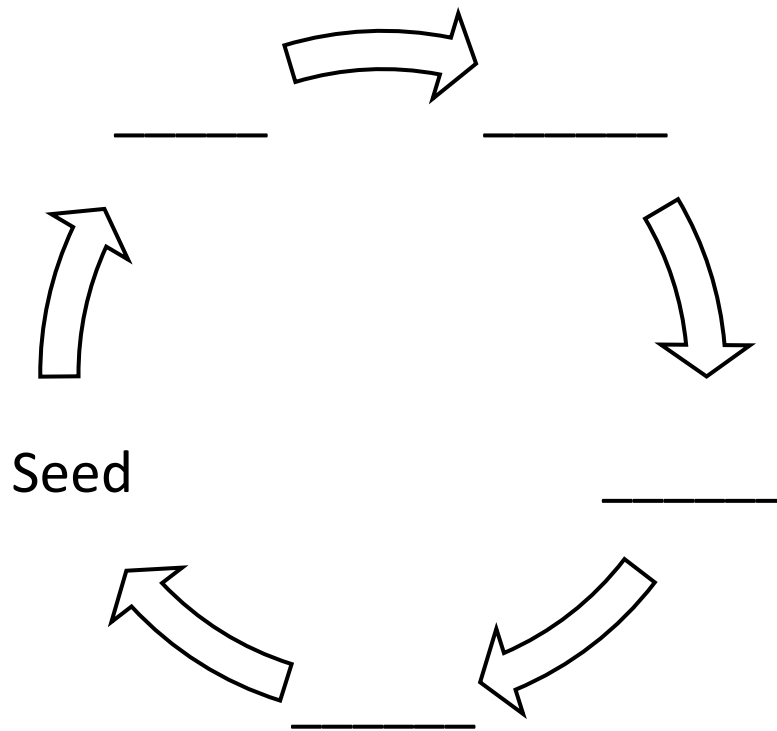


Figure 2. Life Cycle of a plant.

Worksheet Key:

1. See the labeled plant parts.
2. The purpose of the roots is to absorb **water** and hold plant in the soil. What color roots are? They are **usually not visible, but typically white or brown**.
3. The **stem** supports leaf, branches, flowers, and fruits.
4. The purpose of a leaf is to absorb light energy and make food, by the process called **photosynthesis**. Leaf is like a kitchen for plants.
5. The purpose of a flower is to make **seeds** for the plant. The seeds are protected in **fruits** in most of the plants. The seeds will then grow into **seedlings**, the new plants.

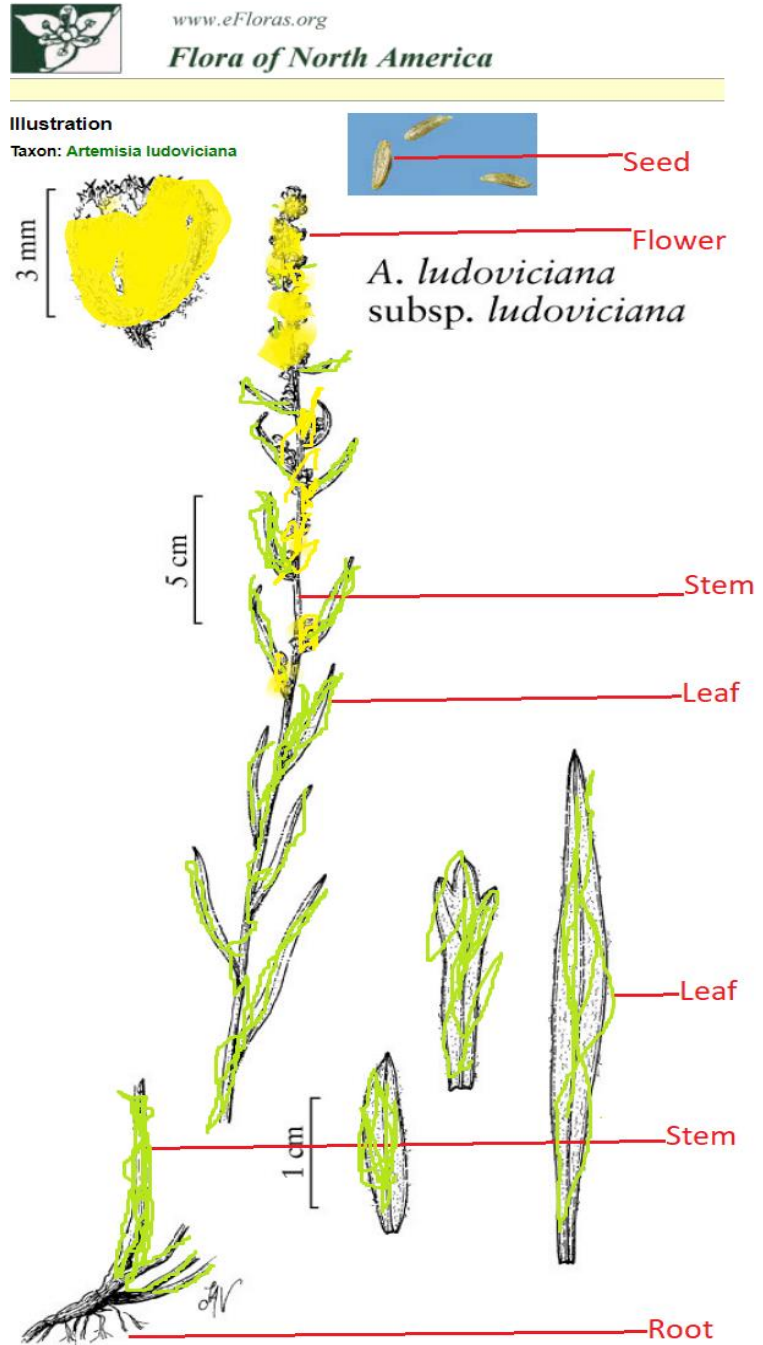


Figure 2. White Sagewort image modified from http://www.efloras.org/object_page.aspx?object_id=57416&flora_id=1

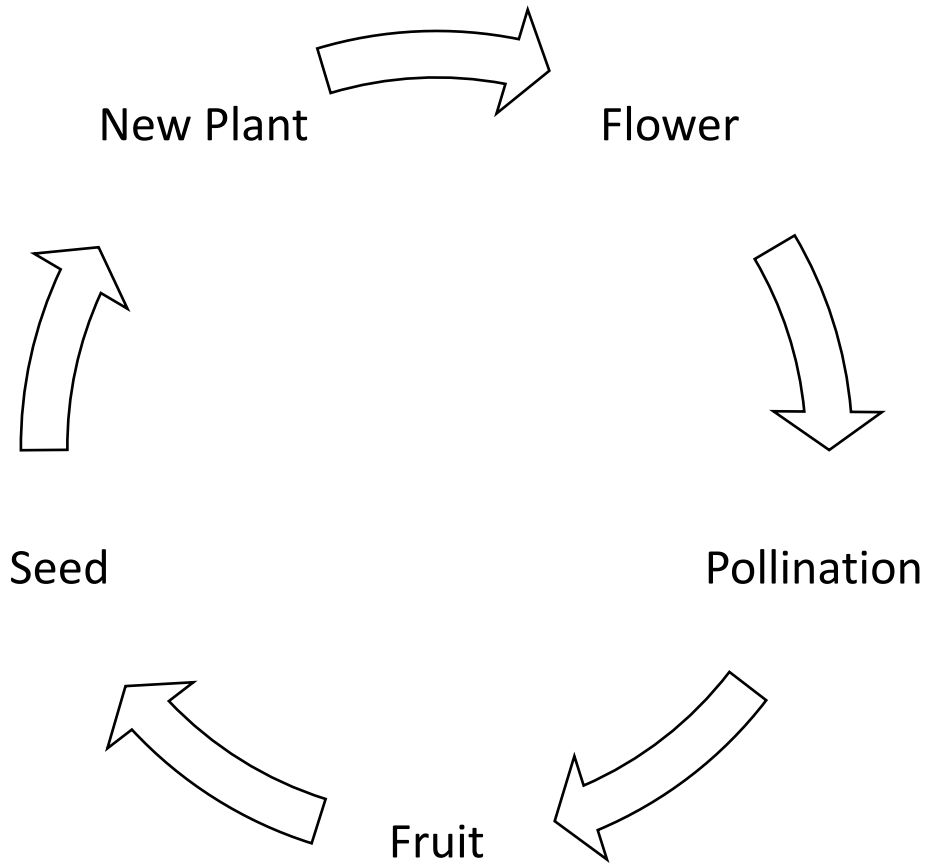


Figure 2. Life Cycle of a plant

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1. Black Elk, L.S. and Wilbur D Flying By, S., 1998. Culturally Important Plants of the Lakota. *Sitting Bull College*.
(<https://puc.sd.gov/commission/dockets/HydrocarbonPipeline/2014/HP14-001/testimony/betest.pdf>)
 2. USDA, NRCS. 2023. The PLANTS Database (<http://plants.usda.gov>, 11/26/2023). National Plant Data Team, Greensboro, NC USA.
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