

**LESSON 6**

# The Story of the Bitterroot

**OBJECTIVES**

Students will understand the importance of the bitterroot plant to the Salish people of western Montana. They will realize how the plant is interwoven into the culture of the tribe, as well as learning about the plant's biology and the changes that have affected both the plant and the people over the past 150 years.

**METHOD**

Students watch a video about the Salish tribe and Montana's state plant, the bitterroot, and their interconnected story. They discuss the film using guided discussion questions, and research how other plants were and are used by Montana's native people.

**MATERIALS**

- ✎ The video *The Story of Bitterroot*, which was distributed by OPI to all Montana school libraries.
- ✎ Plant identification guides that include information on native uses of plants (see **Resources** section of this guide) or Internet access to use web sites such as Montana Plant Life at <http://montana.plant-life.org/index.html> or the Kootenai National Forest at [www.fs.fed.us/r1/kootenai/resources/plants/plants/edible\\_medicinal/index.shtml](http://www.fs.fed.us/r1/kootenai/resources/plants/plants/edible_medicinal/index.shtml)
- ✎ **Montana Natives: People and Plants** activity sheet (one per student).

**BACKGROUND**

*In the old days, Indian people in Montana were dependent upon plants and animals for their livelihood. They knew the habitat and uses of most plants in their territory. If they came upon an unfamiliar plant in their travels, it was subjected to scrutiny and experimentation. It was, after all, a new gift from the Creator.*

*Knowledge of traditional plant use has been passed from generation to generation. That knowledge base continues to grow today. If a skilled native botanist is not able to find a use for a plant in a relatively short time, it is assumed that a use will eventually be discovered. Plant uses are sometimes revealed to worthy individuals through visions, dreams or as a gift from a spirit guardian; but most uses are determined through observation and testing. Typically, a person known for powers as a medicine woman or medicine man will carefully test the properties of a plant. A new species of mint reveals a use to the sense of smell and taste. While nettles and thistles might have seemed a simple nuisance to the uninformed, upon observation of animals eating them and after testing, native botanists found uses for them as medicines, food, dyes and even material for fabric.*

(Excerpted from *Work House Activity Guide* from Glacier National Park, used with permission).

**Grade level:** 5-8

**Subject Areas:** Biology, language arts, history, social studies

**Duration:** 2 or 3 class sessions, plus research time

**Setting:** Classroom

**Season:** Any

**Conceptual Framework Topics:**

Aesthetic, recreational and spiritual values of plants, species, habitat, weed management

(Adapted in part from Montana's OPI *Indian Education for All* curriculum)

The bitterroot is the state flower of Montana. The root was an important food for the Salish and other Montana tribes. The root is small and time consuming to collect in quantity, but it is very nourishing. Indian women usually dug the roots in spring as the leaves were developing, before the root became most bitter. They used special digging sticks made from fire-hardened branches and antlers. A 50-pound bag, enough to feed a person for the winter, would take 3-4 days to fill. Some like the taste although a decidedly bitter flavor develops afterwards. If the root is stored for a year or two the bitterness is somewhat reduced. The roots were boiled or steamed, mixed with berries and meat, or dried, ground into powder, and used as a thickener.

Bitterroots grow in dry, gravelly soil in western and south central Montana. They can be prolific in some areas, creating a carpet of pink when in bloom. But they are vulnerable to disturbance, including invasion from noxious weeds.

The 64-minute DVD focuses primarily on the Montana Salish Indian culture, but interweaves themes common to both non-native and Native Americans. Native American tribal elders are the predominant source of information in the DVD. The video also contains sections on the bitterroot's biology, Lewis and Clark, and the story of it becoming the state flower.

The DVD is organized into eight discrete sections; each is individually accessible and has a title and a theme. Some sections are more relevant to native plant and weed education than others. Montana's OPI Indian Education for All website has a full curriculum guide to use with the video. That guide can be found at [http://www.opi.mt.gov/PDF/IndianEd/bitterroot\\_curr\\_alt.pdf](http://www.opi.mt.gov/PDF/IndianEd/bitterroot_curr_alt.pdf). Some of the discussion questions below are adapted from the OPI guide.

## PROCEDURE

1. **Watch Section A:** *Legend of the Bitterroot* (6 minutes) of the OPI video "The Story of the Bitterroot" in class and lead your students in a discussion about the story. You may want to use the following questions:

- a. According to the Salish how did the bitterroot come to be? (*The creator provided it to save the starving people.*)
- b. How are the plant's features related to the Salish story? (*The silver of the flower is the color of the grandmother's hair, and the pink from the wings of the red-winged blackbird*)
- c. Who only can say the first bitterroot prayer? (*It has to be a woman. Women traditionally were gatherers of the natural foods.*)

- d. What is the traditional tool used to dig the bitterroot? (*A digging stick or petzah is used.*)
- e. What could be some reasons the people in the story were starving? (*Conditions like rain and temperature vary year to year, affecting the quantity of foods available.*)
- f. Do you think a plant like the bitterroot could save people from starvation? (*Bitterroots were very plentiful in some areas, and they are very nutritious*)
- g. Can you think of any other natural objects in which their physical appearance or use by humans is explained by legends or stories?

2. **Watch Section B: *The Corps of Discovery*** (12 minutes) and discuss:

- a. Who was the first white man to describe the bitterroot? (*Meriwether Lewis*)
- b. Why were the native plants, including edible ones, unfamiliar to explorers? (*They didn't grow in the eastern part of the country where they came from.*)
- c. What was the importance of the bitterroot to the Salish when Lewis and Clark passed through? (*The bitterroot was an important part of their diet and had great cultural significance.*)
- d. When the bitterroot was given its Latin and colloquial names, it already had a Salish name. What are these names? (*Latin: *Lewisia rediviva* Colloquial/Common: rock rose or bitterroot Salish: spetlum.*)
- e. What does the Latin name mean? Why was it given this name? (*Lewis is for Meriwether, and rediviva means regrow or resurrect, because it revived and grew after being dried for a year.*)

3. **Watch Section C: *Botany*** (6 minutes) and discuss:

- a. Describe the kinds of habitats in which the bitterroot can be found. (*Mostly arid well-drained sites.*)
- b. What time of year is the bitterroot dug for food? Why? (*When the plant is in the leaf stage, and the roots contain the most nutrients.*)
- c. What is the primary way the plant deals with the cold and dry climate in Montana? (*It is dormant for 10 months of the year.*)
- d. How does the bitterroot spread its seeds? (*By the wind.*)

4. **Watch Section D: *When We Were Children*** (11 minutes) and discuss:
  - a. What has happened to many of the bitterroot fields used by the Salish? (*They were plowed up or impacted by grazing, the city of Missoula has been built on them, or they were developed in other ways.*)
  - b. The hillside above Missoula (Mt. Sentinel) was once covered with bitterroots. Since there are no buildings or farming there, what do you think happened to the extensive areas of bitterroots? Did you notice what is growing there now? (*Invasive plants such as spotted knapweed and leafy spurge have displaced many native plants.*)
  - c. How were the bitterroots preserved? (*They were dried in the sun.*)
  - d. What are some of the ways to prepare bitterroots? (*Boiled with venison broth, serviceberries, or huckleberries.*)
  - e. What is the importance of the native foods? (*They provided sustenance and were gifts from the creator which were received with thanks.*)
5. **Watch Section E: *Mr. Bitterroot*** (11 minutes) and discuss:
  - a. Why did Henry care about the bitterroots? Did he need them for food?
  - b. How did Henry get the seeds to germinate?
6. **Watch Section F: *Gathering*** (8 minutes) and discuss:
  - a. What is bitterroot gathering like today? Is it a solemn or joyful occasion?
  - b. What is the same and what is different from gathering in “the old days”?
7. **Watch Section G: *The Future*** (5 minutes) and discuss:
  - a. Did you notice what’s taken the place of the bitterroots in Henry’s garden? (*Weeds*)
  - b. What are school kids in Missoula doing to help our state flower? (*Planting bitterroots in native plant gardens.*)

8. After the end of the film, discuss the following with your students:
- Do you like the taste of bitter foods? Can you name some bitter-tasting foods you've eaten? (*You might ask if they have tasted unsweetened chocolate or cocoa powder, and explain that chocolate is bitter until sugar is added.*)
  - Are there any wild plants that your family gathers to eat?
  - Why do you think the bitterroot is Montana's state flower?
  - Can you think of any issues to consider when digging up bitterroot plants now? (*You might discuss possible harm to dwindling populations, private property rights, impacting traditional gathering grounds, helping weeds to invade, etc.*)
  - How do you think weeds might affect plants like bitterroots? What kind of habitat does the bitterroot usually grow in? Do you know of any non-native, invasive plants (weeds) that grow in that same kind of habitat?
  - How might the invasion of natural areas by non-native plants affect people like the Native Americans who have a strong cultural tie with the native vegetation?

Now have your students research another Montana plant that was traditionally used for food or medicine. You can have them use one of the resources listed or others you may find, and fill out the activity sheet with their own drawing and information. You may want to have them use the "Questions for Plant Research" as a guide when they research their plant.

### Extensions

Have students present what they have learned to other students, parents, or community members.

Put the students' completed activity sheets together as a booklet on native plants for a class resource.

Present **Lesson 7: Traditional Uses of Native Plants** in this guide.

Have students try to find food made from native plants in the grocery store.

Have your students taste foods made from local wild plants, such as jams and jellies, which they either made or bought.

Name \_\_\_\_\_

# Montana Natives: People and Plants

Common Name(s): \_\_\_\_\_

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

DRAW YOUR PLANT HERE

### **Questions for Plant Research**

1. How is or was this plant used by Montana native peoples? What parts were used and how were they prepared for use? Did different tribes use it differently?
2. Were there any special ceremonies or rituals observed when gathering, preparing and using this plant?
3. Are there any special legends or traditional stories involved with the use of this plant?
4. How does the plant reproduce? How does it spread into new territory?
5. In what sort of habitat would you look for this plant?
6. Does your plant have any special relationships with other plants or animals? Is it particularly important to certain plants or animals?
7. Is it a rare or threatened species?
8. What other interesting information can you supply about your plant?