

A Wide Range of Plants

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Subject: Science	Grade Level: 5 th
Time Required: 1 hour	CCS Standards: <u>Reading-Informational text 5</u> <u>Speaking and listening: 2 & 4</u>

Overview	Students will learn how to tell the difference between forbs, shrubs, grasses, and grass-like plants.
Goal(s) & Objective(s)	Students will classify plants as grasses, grass-like, forbs, or shrubs. Students will create a data table to present their classifications.
Materials	<ol style="list-style-type: none"> 1. Slips of paper with the names of different plants from the list below. 2. Four containers with the names of plants from different categories (see last page of lesson). 3. “Range Plant Types” handout (http://www.cnr.uidaho.edu/what-is-range/Curriculum/MOD2/Types.pdf), 4. Pictures of each plant (See USDA Plants Database using common names), 5. Butcher paper, 6. markers, 7. Backpack Guide to Idaho Range Plants by Juley Hankins (optional). 8. Cards with pictures of plants are also available from the Idaho Rangeland Resource Commission.
Teaching Activities: Instructional Approaches/Strategies	<p>Introduction: Use one or more of the following to lead into the lesson.</p> <ol style="list-style-type: none"> 1. Give groups of 3 or 4 students several samples of grass pulled or dug at least to the ground (lawn grass, cheat grass or foxtail from a disturbed area, pasture grass), and several samples of forbs (dandelions, thistle, blue mustard). Give students 5 minutes to divide the plants into 2 groups with similar characteristics, and have them explain their groupings. 2. Have students respond to the question “What is grass useful for?” and discuss their answers. <p>Procedures</p> <ol style="list-style-type: none"> 1. Using the poster and handouts “How to Identify Range Plants”, describe the differences between forbs, shrubs, grasses, and grass-like plants. Check for student understanding by questioning: “If a plant has a hollow stem, what would it be?” “If a plant had a pretty flower and non-woody stems...” etc. 2. After holding up a picture of a grass, ask students if this is a grass, forb, grass-like plant, or shrub. Look at the definition on the handout to help in identification. 3. Divide the students into groups of 4. Each group member will line up behind a different container and draw a slip of paper. This way they will have drawn a particular plant that is classified as, grass, grass-like, forb, or a shrub.

	<ol style="list-style-type: none"> 4. Assign jobs for each student in a group. Jobs include: material gatherer, recorder, one who glues or tapes, and the presenter. 5. The material gatherer gets the butcher paper, markers, and the samples or pictures of the plants drawn by the group. <p>Students Practice:</p> <ol style="list-style-type: none"> 6. The recorder will draw a chart on the butcher paper with the labels: Grasses, Grass-like Plants, Forbs, and Shrub and a description of each one. Ex. GRASS (hollow, jointed stems, veins run parallel, leaves on 2 sides of stem and a grass flower on the end of the stem). 7. Next, all the students in the group will use the pictures or samples available to help determine what kind of range plant is the one they each drew. 8. The student whose job it is to do the gluing or taping will put the pictures under the correct heading on the chart. 9. When finished, one student from each group will be the spokesperson to present their chart to the class. If there are questions as to whether the identification is correct, a look in the <u>Backpack Guide to Idaho Range Plants</u> can answer their questions. 10. Hang the charts up for a great reference as you do other rangeland activities.
Assessment:	As the students are presenting their charts, the teacher can see if the information is correct or you can have a self-check sheet available for each group to check their own.

Preparation: Before the lesson, gather materials, make a copy of the list of rangeland plants, cut out the plant names, and place each name into the correct container.

Vocabulary: forb, shrub, grass, grass-like

Expansions and Modifications: Trees and noxious weeds could be added to the list of rangeland plants. What makes a plant a noxious weed, would need to be presented to the class and discussed before adding to your list of rangeland plants.

Background: Knowing the types of plants in an area can help people make decisions about how the land should be managed, and monitoring whether changes are healthy or not.

Forbs are plants such as Dandelions with showy flowers, netted veins in the leaves, non-woody stems, and a taproot. Sometimes we call forbs “broadleaf” plants – they include wildflowers and weeds.

Grasses have jointed stems, parallel veins in the stems and leaves, and fibrous roots. Sometimes plants we would not think of as grasses, are grasses, such as wheat and corn. Other plants we would call grasses are grass-like such as bulrushes, cattails, and sedges. They have parallel veins in the leaves, but have hollow stems.

Finally, shrubs are woody plants that re-grow leaves and flowers on the same stems year after year.

Plant List

Here is a list of rangeland plants that can be cut and placed in the containers for the students to draw:

Grasses:

Bottlebrush Squirreltail
Downy Brome (Cheat Grass)
Foxtail Barley
Idaho Fescue
Meadow Foxtail
Needle-and-Thread
Pinegrass
Great Basin Wildrye
Purple Threeawn

Grass-like Plants:

Baltic Rush
Elk Sedge
Hardstem Bulrush
Nebraska Sedge
Threadleaf Sedge

Forbs:

Biscuitroot
Curlycup Gumweed
Fireweed
Indian Paintbrush
Low Larkspur
Mules Ear
Penstemon
Tailcup Lupine
Western Yarrow

Shrubs:

Big sagebrush
Bitterbrush
Chokecherry
Gray Rabbitbrush
Greasewood
Serviceberry
Shadscale Saltbrush