**Sagebrush Steppe Poster**

This poster was created by Sherrie York with the generous support of Audubon Rockies, the Wyoming Arts Council, and the National Endowment for the Arts. Please feel free to keep the poster to use with future classes.

**Objective**

Students will discover the plants and animals of the sagebrush-steppe ecosystem. Students will learn what the sagebrush-steppe ecosystem is and why it is important to Wyoming. Students will then research a habitat and create a poster depicting the plants and animals that live there. Students will then draw parallels between the habitats, what animals need to survive, and their place the food web.

**Background**

A sagebrush-steppe is a type of arid habitat characterized by sagebrush and other shrubs and short grasses.  The name "sagebrush-steppe" comes from sagebrush, which is the most abundant plant species that grows in this ecosystem and "steppe," which is a word describing a large, dry, level, grassland having few or no trees. Wyoming’s Sagebrush-steppe habitat is an expansive region of high, open, arid country nearly surrounded by mountain ranges. It is drained by three major river systems: the Green River to the south, the Wind-Bighorn River to the north, and the North Platte to the east. Sagebrush covers 51,100 square miles (132,400 square kilometers) of Wyoming, that’s an area slightly larger than Alabama! The total area of Wyoming is 97,809 sq mi (253,325 sq km) so that means that our state is almost 50% sagebrush habitat.

Many animals depend on sagebrush ecosystems in the western United States for survival. Plants and animals that can survive only in certain communi­ties are called obligate species. Sagebrush obligates are animals that cannot survive without plenty of sagebrush and its associated perennial grasses and forbs.

Some examples of sagebrush obligates are Sage Grouse, Brewer's Sparrow, Sage Thrasher, Sage Sparrow, Pygmy Rabbit, Sagebrush Lizard, Sagebrush Vole, and Pronghorn Antelope.

**Materials**

Sagebrush steppe ecosystem poster.

Binoculars, magnifying glasses, nets

Access to internet, books from the library, or magazines.

Drawing supplies such as paper, pens, and pencils.

Coloring supplies such as paint, markers, colored pencils, and crayons

Artist bio and artistic steps handout

\*Optional: Sagebrush Food Web activity materials from the sagebrush trunk for enrichment.

**Activity 1**

**Part A**

1. Show the students the poster. Explain that all of the plants and animals are found in Wyoming.

2. Break students into groups of 2 or 3. Give each group approximately 5 animals to look from the poster. Be sure to make it a mixture comprised of one or more from each type of animal (e.g. 2 mammals, 2 birds, 1 insect, 1 reptile).

3. Ask group members to think about why each animal would live in the sagebrush habitat. Discuss their thoughts.

4. Have students decide which animals spend their whole life in the sagebrush and which animals leave for part of the year and why.

5. Have students decide which animals are carnivores, herbivores, and omnivores. (You may need to explain these terms to students). Ask them why bacteria and fungus were included in the poster. (You may need to explain what decomposers do).

6. Have students think about the obstacles each animal might face and ways that the animal works to overcome them. Explain obligate species and have students discuss those animals’ particular challenges.

7. Have the students in each group chose an animal from the poster. The student will be responsible for reporting to the class on that particular animal. Have them report to the class the name, why it lives in the sagebrush, if it lives in the sagebrush year-round, and if not where it might it go. Then have them explain what part it plays in the food web, what the animal might have to struggle against and lastly how it copes.

\*Enrichment: Do the Sagebrush food web activity.

**Part B**

1. Have each student research a habitat such as arctic, rainforest, desert, etc. They can use the internet, the library, or other means of gaining knowledge on a certain area.

2. Students should gather information on common plants and animals including mammals, insects, birds, amphibians and reptiles. Keep in mind that there should be at least one full food chain depicted.

3. Pass out artist bio and artistic steps paper.

4. Have students create a poster of their own habitat complete with plants and animals. Instruct students to save space at the bottom for the key and to put a title on their poster.

5. Have each student present their poster and afterwards, display posters in a prominent location.

**Wrap-up:** Ask student to think about similarities in each habitat. Any Differences? What makes each habitat unique? What are the challenges that all animals might face? What are the requirements that all animals need? How do the habitats provide the needs? Do humans play any role in the habitat? If so, is it positive or negative?

**Activity** 2

1. Have each student research a habitat such as arctic, rainforest, desert, etc. They can use the internet, the library, or other means of gaining knowledge on a certain area.

2. Students should gather information on common plants and animals including mammals, insects, birds, amphibians and reptiles. Keep in mind that there should be at least one full food chain depicted.

3. Pass out artist bio and artistic steps paper.

4. Have students create a poster of their own habitat complete with plants and animals. Instruct students to save space at the bottom for the key and to put a title on their poster.

5. Have each student present their poster and afterwards, display posters in a prominent location.

**Wrap-up:** Ask student to think about similarities in each habitat. Any Differences? What makes each habitat unique? What are the challenges that all animals might face? What are the requirements that all animals need? How do the habitats provide the needs? Do humans play any role in the habitat? If so, is it positive or negative?

**Student Page**

***A word about the Sagebrush Steppe Poster Illustrator:***

When she was in school, Sherrie York was not the best artist in the class. In fact, she did not know she wanted to be an artist until she was an adult! Now she works as an artist and illustrator and has made drawings, paintings, and block prints for books, magazines, posters, educational exhibits, and many other projects.

Her favorite subjects are plants and animals and she especially likes drawing outdoors. She likes the challenge of drawing from “the real thing,” even if sometimes there are bugs and wind and bad weather. Sherrie’s interest in drawing outdoors has given her many opportunities to visit new places, including Spain, Holland, and many US states.

**Getting Started: Creating your own work of art!**

When I make an illustration for a poster, book, or sign, there are many steps involved.

1. **Define the project.**
   1. What is it? A poster? A newsletter? A book?
   2. How big it is? What are the dimensions?
   3. What is the subject? Animals? Landscape? Cars?
   4. Will it be in color or in black and white?
   5. What materials will be used? Watercolor? Pen and ink? Collage?
2. **Research the subject.**
   1. Books
   2. Internet
   3. Talk to experts
3. **Make a rough or concept sketch.**
   1. An outline drawing in pencil or ink on inexpensive paper.
4. **Review the rough sketch:**
   1. Either with the project partners or by myself.
5. **Make any necessary changes to the rough sketch.**
6. **Make the final art!**
   1. Usually a pencil drawing first on good paper
   2. Finish the piece using whatever materials you chose.

Sometimes steps 4 and 5 are repeated until all of the project partners are satisfied.