Wildlife Habitats Lesson Plan

Time: 60 min
Location: Indoors
Materials:
Printed off wildlife cards (included below)
Any specimens of creatures or plants that live in Sagebrush, Aspen, Conifer, or Riparian areas (such as antlers, horns, wings, pelts, scat)
Printed pictures of 4 wyoming habitats
Paper and coloring implements such as crayons or markers

Preparation:
Divide a large section of the floor into four parts with masking tape

Next Generation Science Standards:
Cross-cutting concepts: Patterns; Structure & Function
Science & Engineering Practices: Asking questions; Constructing Explanations
Disciplinary Core Ideas: LS2: Ecosystems: interactions, energy & dynamics; LS4: Biological evolution: Unity & Diversity

Engage:

- Ask students if they have any sort of community contract in their classroom (as in some agreed upon rules about behavior, where things go, etc.) and let them explain these to you.
- Just like we have a community here in the classroom, there are ecological communities out in nature that wildlife and plants use. Imagine we are the wildlife and the classroom we belong in are the plants in a certain community.
- Ask the students: What do you know about communities in nature? Write it down on a whiteboard or piece of paper, then share your ideas with a partner, and then partner groups can share out to the entire class.

Explore:

- Display the four plant community pictures. Ask students if they've ever been to or seen these sorts of areas in nature. Let them share personal stories, and encourage them to share characteristics that seem to define each area (such as relative moisture in soil, sunny/shady, plants & plant profile, dominant substrate on the ground, wildlife they saw, etc.) If you can provide an example of nearby places that fall into these plant community categories, that is ideal!
- Divide students into four groups: Sagebrush, Aspen, Conifer, and Riparian, and place each corresponding habitat picture into a quadrant on the floor.
- In their respective groups, students are responsible for working together to make group decisions about which cards/objects belong in their assigned community. Emphasize that they will need to explain to the class *why* they believe this. What patterns helped them to decide?

Ideally, they should end up organized as such, but truly lots of these animals utilize multiple habitats, so if students have a question about where which one fits best, talk with them about where they think the animal would be the most successful.

- Sagebrush – sagebrush, rabbitbrush, sage grouse, pronghorn, ground squirrel, bison, meadowlark, short-horned lizard, badger, mule deer, coyote, indian paintbrush, elk,
- Aspen – aspens, chickadee, saw whet owl, pocket gophers, elk, woodpecker, northern flicker
- Conifers – Douglas fir, Clark's nutcracker, mountain lions, Lodgepole pine, raccoon, red squirrel, chipmunk, elk, mule deer
- Riparian – moose, Cottonwood, willow, Cutthroat trout, beavers, mayfly nymph, muskrat, waterfowl, garter snake

Explain:

- Have each group present what organisms they placed into each community.
- Allow other students to share their opinions around why an organism would or wouldn't occur in one of the plant communities. Prompt the students to provide evidence, especially citing adaptations that the organisms have. As you move through each species and each community, share knowledge you may have around each species (or see the chart at the end of this plan) and let students touch any specimens. Stress that some species move across more than one community…much like students may have a "community" in their home with their family, and this other one here at school in class.
- Discussion of communities
    - how do they effectively separate organisms?
    - Are some organisms *adapted* to certain communities?
    - What is the definition of an adaptation? → An adaptation is a way an animal looks (physical) or acts (behavioral), that helps an organism, such as a plant or animal, survive in its environment. These looks and behaviors develop over generations due to genetic mutations. (this part may be too complicated for K-2 students, but some may ask why…)

For 3-5th grade students, continue to Elaborate:

- What factors do you think influence communities and how they function? (availability of nutrients, food, water, shelter, space, sunlight, temperature, topography)
- Note the difference between abiotic (non-living) and biotic (living) factors. The combination of both abiotic and biotic factors creates each unique habitat.
- Pose the question: Do some species influence their communities more or less?
    - Opportunity here to introduce keystone species by talking about beavers. A keystone species is a species on which other species in an ecosystem largely depend, such that if it were removed the ecosystem would change drastically. In the case of beavers, they create ponds that go on to create habitat for many other creatures.

If there's extra time:

• Prompt students to create their own type of community. Choose three plants and three animals that live there. Sketch it on a piece of paper or in a class journal, labeling when necessary. They can be real or imaginary, but make sure they have adaptations that help them survive as best as possible in that habitat.

• Why do these organisms live there?

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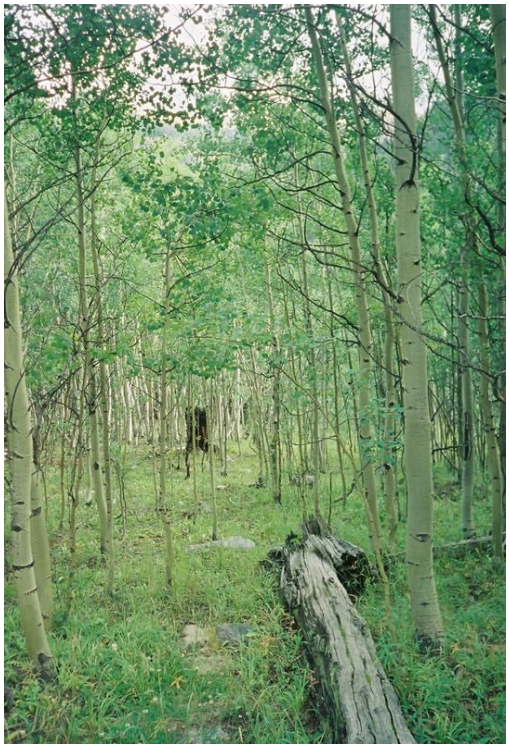
Sagebrush Plant Community

https://www.google.com/search?q=sagebrush&espv=2&biw=990&bih=585&source=lnms&tbm=isch&sa=X&ved=0ahUKEwiaIM_ry5zQAhVBIGMKHcRbDgMQ_AUIBigB#imgrc=_v1MeH_zkPVcgM%3A

http://www.hcn.org/articles/a-new-and-more-dangerous-sagebrush-rebellion/14499023536_e60a4c6b55_k-jpg/@@images/6fbf7046-279e-421d-9c9e-f589ce067c8e.jpeg

Aspen Plant Community

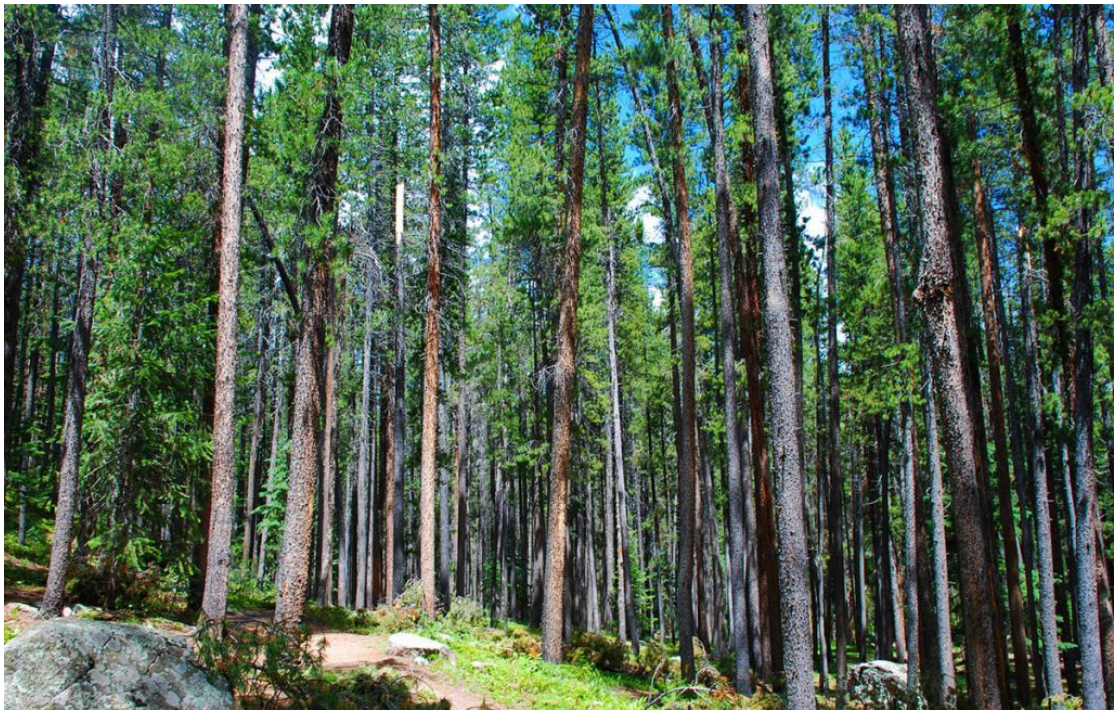
http://cdn.c.photoshelter.com/img-get2/I0000xwS8EIkeyIU/fit=1000x750/Aspens-trees-summer-CO-1738.jpg



http://www.fs.fed.us/wildflowers/beauty/aspen/images/grow/aspen_cottonwood_ck_co_lhanson_lg.jpg

http://www.fs.fed.us/wildflowers/beauty/aspen/images/grow/aspen_cottonwood_ck_co_lhanson_lg.jpg

Conifer Plant Community



http://www.kalesnikoff.com/wp-content/uploads/2013/12/album-lodgepole-1-1024x651.png

http://cf.ltkcdn.net/garden/images/std/109635-425x332-Spruce-forest-i.jpg

Riparian Plant Community

https://articles.extension.org//sites/default/files/w/1/18/riparianarea.jpg

https://s-media-cache-ak0.pinimg.com/236x/ca/a8/f2/caa8f2cee2f6ee71e5db0ae9e189404c.jpg

Wyoming “community members”

Indian Paintbrush	Rabbitbrush	Sage Grouse	Pronghorn Antelope
Ground Squirrel	Bison	Western Meadowlark	Greater Short-horned Lizard
North American Badger	Mule Deer	Coyote	Black-capped Chickadee

 Northern Saw-whet Owl	 **Pocket Gopher**	 **Elk**	 **Hairy Woodpecker**
 Northern Flicker	 **Douglas Fir (cones)**	 **Clark's Nutcracker**	 **Mountain Lion**
 Lodgepole Pine	 **Raccoon**	 **Red Squirrel**	 **Chipmunk**
 Moose	 **Western Cottonwood**	 **Cutthroat Trout**	 **Beaver**

Mayfly Nymph	**Muskrat**	**Mallard Duck**	**Common Garter Snake**