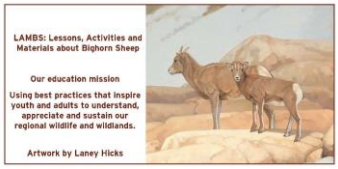


Color Crazy

Adapted from Project WILD www.projectwild.org

Grade levels: 1st – 12th but fun for all ages

Objectives: Students will (1) generalize that wildlife exists in many colors; (2) make inferences about the relationship between wildlife coloration*- and the colors and patterns found in an animal's habitat; and (3) discuss coloration of wildlife as an adaptation for survival.

Materials:

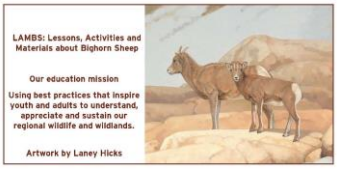
- Natural materials such as sticks, leaves, pinecones, acorn shells, etc.
- Art supplies, including modeling clay, pictures of brightly colored animals, crayons, paint, chalk, construction paper, scissors, glue, feathers, tissue paper, beads and chenille stems.

Background:

Animals use coloration and markings as survival tools. For example, animals use color as protection and as a way to attract mates. The colors that one animal species can see are not always the same as the colors another animal species can see. An animal's bright colors may not be visible to its primary predators.

Camouflage, or the ability to blend with surroundings, can determine whether a prey species, like a rabbit, remains hidden from a predator or is easily identified, killed and eaten. Predators such as bobcats and trout have camouflaged bodies to their prey will not see them. Dall sheep live in places with lots of snow so their all white coat helps them stay hidden from predators. Watch the short video "Grand Slam Display in the NBSC" on the NBSC website to see the four types of wild sheep that live in North America and how their coloration helps them blend into their habitats. Rocky Mountain Bighorn Sheep are mainly shades or brown and are very well camouflaged among the brushes and grasses in their habitat. Take a look at the activity "Camouflage Bighorns! How Many Can You Count?" on the NBSC website to see just how difficult it can be to spot bighorn sheep. Some animals go through seasonal color changes to remain camouflaged. For example, ptarmigan are ground-dwelling birds that live in the arctic and alpine regions of the Northern Hemisphere. In winter, white-tailed ptarmigans are white and blend with the color or the alpine tundra. In summer, they turn mottled brown and resemble the color of the alpine forest during that time of year.

Many animals are brightly colored. The eastern newt in its land-dwelling juvenile, or eft, state is a bright red salamander. The red color warns predators that the newt's skin contains a compound that can be toxic or irritating to the predator. A predator that eats a newt learns to avoid newts in the future. Bright colors or other markings also may serve as a defense. Some animals use color to appear to be something that they are not. Polyphemus moths have giant eye spots that create the impression that the animal is larger than it really is. Color also plays a role in animal mating rituals. The brightly colored male scarlet tanager and peacock both use color to attract mates. Wildlife exists in a wide range of colors that are



linked to their survival.

Animals use color as a physical adaptation to increase their chance of survival in their surroundings. There are a variety of ways colors are used, including the following:

1. Concealing coloration/background matching – the use of any combination of materials, coloration, or illumination for concealment, making animals or objects hard to see

Photo by Zdenek Rosenthaler from Pexels

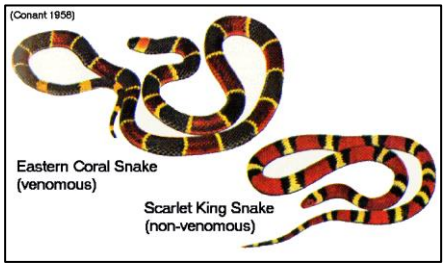
2. Disruptive coloration – the outlines of an animal are broken up by a variety of colors

Photo by Pixabay from Pexels

3. Disguise – used to camouflage, or blend in with their background

Photo by Katja Shulz from www.plt.org

4. Mimicry – two species share common colors in order to help one or both species survive



Via callnorthwest

5. Warning coloration or aposematism – usually conspicuous or bright markings on a prey species that warn predators of the prey's defensive qualities

Photo by Thierry Fillieul from Pexels

6. Countershading – an animal's pigmentation is darker on the upper side and lighter on the underside of the body. This form of camouflage counteracts the effects of light from the sun brightening the upper side of the body; in this way, the animal is more difficult to detect.

Photo by Vova Krasilnikov from Pexels

Activity:

Students will create representations of wild animals designed to visually blend in or stand out in their habitats.

1. Open the discussion by asking students to name and describe real, brightly colored animals. Show students photographs of a variety of brightly colored animals. Discuss how the animals have physically adapted to use colors and markings to help them survive. In addition to bright colors, how do more subtle shades of colors help animals? How do the arrangement or patterns of colors help a particular species of wildlife? Use the information in the "Background" section to explain different ways that coloration aids animals in survival. Show students images of animals in camouflage. Can the students spot the animals? Would predators be able to see them? Why or why not?

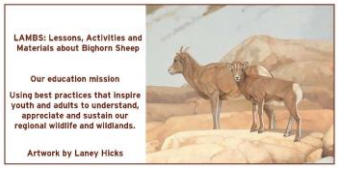
Male cardinal by Tina Nord from Pexels

Blue jay by Pixabay from Pexels

Red chameleon by George Lebada from Pexels

Tree frog by Глеб Коровко from Pexels

2. Collect natural materials (sticks, leaves, pinecones, etc.) with students outside. Have students use these materials to make a creature. Clay can be used to hold the materials together. The students can make birds, reptiles, amphibians, insects, fish and mammals- whichever they would like to make. Make sure the students will be able to describe how the coloring on the animal would help it survive.
3. Once the creatures are constructed, have the students place their creatures in the appropriate habitats (e.g., birds in trees, gophers in holes) without anyone else seeing where they are placed.
4. Go on a nature walk with the students to find each creature. Once the creatures have been located, have the students describe what type of animal it is and how it uses color to survive.
5. Ask students what they have learned about wild animals. Encourage the generalization that wild animals occur in a variety of colors and the animal's colors and markings help them survive.
6. We would love to see pictures of your creatures! Email them to Karen@bighorn.org.



Extensions:

1. Have students write a short story with their creature as the central character. Where does the animal live? What does the animal like to do? What are some threats the animal faces? What role does camouflage play in the life of the animal?
2. Watch the short video on the NBSC website titled "Grand Slam Display in the NBSC" and have students explain why the coloration of each of the four types of wild sheep help them survive.

Assessment:

Have students explain their creations and elaborate on why the coloration of the animal they constructed should help it survive. Why would the animal not survive as well if it had different coloration or markings?

Wyoming Science Curriculum Standards and Connection Ideas

2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.

- After students create, hide, and find all of the creatures, have them compare the diversity of wildlife in the habitats they encountered.

3-LS4-2. Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.

- If students had all tried to make the same creature, would there have been differences/variations? Would some of these variations have provided an advantage in survival, finding a mate, or reproduction? Have students discuss these possibilities.

3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.

- Show and discuss examples of real wildlife and their associated habitats then have students discuss how successful or not that these animals would be in various habitats.