



WILD Kids

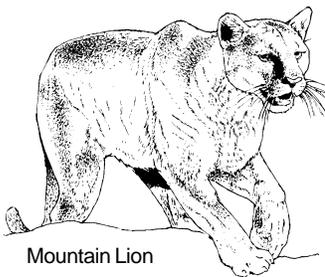


Animal Mimicry

Have you ever tried to imitate someone by acting or dressing like that person? This is called **mimicry**. You were the **mimic**. The person you were imitating is the **model**. Many animals are mimics also. But for wildlife, mimicry can help prey animals avoid being eaten or help predators avoid being detected by prey.

Crypsis

In crypsis, an animal blends in with its environment. An animal blends into its environment by not only looking like something it is not but also by behaving like something it is not. Appearance and behavior are both important components in crypsis. For example, katydids are green, oval-shaped grasshoppers. Their body is flattened vertically, resembling a leaf. When they are at rest, katydids are often difficult to see - they mimic the surrounding leaves. They not only look like leaves, they act like leaves too. When there is a slight breeze, katydids will sway back and forth, mimicking a blowing leaf.



Mountain Lion

Crypsis is also used by predators. Many predators use the 'lying-in-wait' technique to capture prey. In this technique, a predator mimics some part of its environment. When unsuspecting prey approaches close

enough, the predator can capture it. Mountain lions are such predators. Mountain lions are tan or tawny in color. When not moving, mountain lions are difficult to see - they blend into the background. When a deer approaches the area where a mountain lion is waiting, it may not sense or see the lion. If the deer approaches close enough, the mountain lion will spring out of its cover and capture it.

Aposematic Mimicry

Have you ever wondered why a Gila monster has black and cream markings, a skunk is black and white, or a coral snake has brightly colored red, black and yellow bands? These bright colors may advertise that the animal has a defense against predators - it tastes bad, smells bad, stings, bites, etc. Warning coloration is called **aposematic** coloration.



Striped Skunk

Aposematically colored organisms are brightly colored, usually with black and red, black and yellow, black and orange, or black and white markings. Their coloration causes them to stand out and be seen in their environment. A few animals mimic aposematically colored animals. The mimics have similar coloration even though they may not taste bad, smell bad, bite or sting. There are two types of aposematic mimicry - **Batesian** and **Müllerian**.

Batesian mimicry is named after the nineteenth century English naturalist Henry Bates. Bates traveled extensively in South America collecting butterflies. During his trips to the Amazon, he collected examples of edible butterflies that mimicked inedible aposematic butterflies (edible or inedible to predators that is!). The inedible butterflies were the models. He observed that the aposematically colored mimics were not eaten by predators as much as non-aposematically colored butterflies. Why?

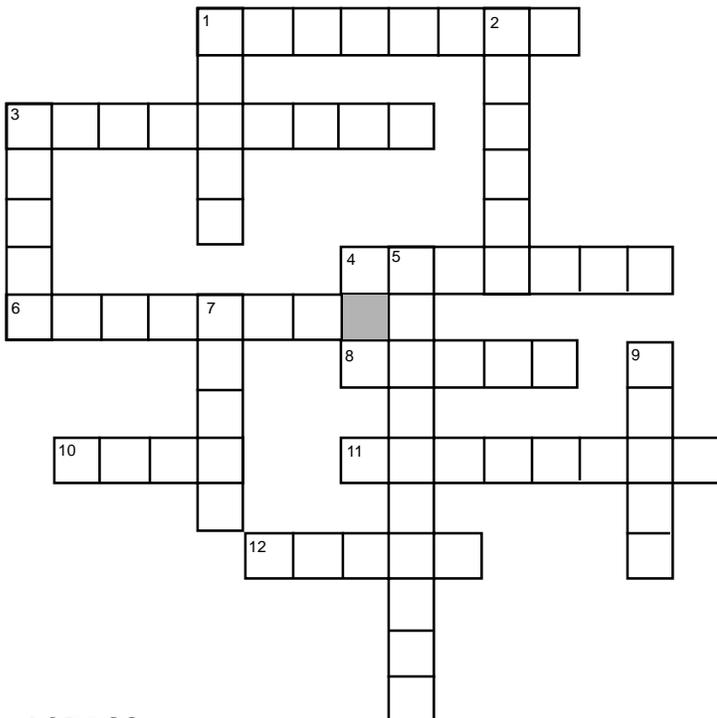
Predators learn what is edible through trial and error. If a predator eats, or tries to eat, an aposematically colored individual, it learns the hard way not to eat it again. In Batesian mimicry, the mimics are tricking predators into believing they are inedible.

Batesian mimicry works only if there are far fewer mimics than models. If there were more mimics than models, predators would encounter the mimic more often than the model. Predators would learn that the brightly colored mimics were edible and easy to find. So mimicking an inedible model is not advantageous when there are few models around.

Müllerian mimicry is named after the nineteenth century German zoologist Fritz Müller. He also collected butterflies. Müllerian mimicry involves two or more species that are **all** inedible and similarly aposematically colored. All species are protected from predators because predators need to learn only one color pattern. In Müllerian mimicry, mimics and models are found in similar numbers.

Sound confusing? Yes, that's the point of mimicry!

Activity I: Crossword



ACROSS

1. Mimicry involving edible mimics and inedible models.
3. Mimicry involving inedible models and mimics.
4. Another name for aposematic coloration.
6. Term used to describe mimicry of a part of the environment.
8. Term used to describe the organism that is mimicked.
10. A predator in Arizona that uses crypsis - Mountain _____.
11. One component of crypsis.
12. Predators learn through _____ and error.

Activity II: Which is it?

Below are natural history notes of mimics and their models. Identify each relationship as either crypsis, Batesian mimicry or Müllerian mimicry.

Which is the mimic and which is the model in each relationship?

1. When soaring, turkey vultures hold their wings in a characteristic V-shape. They are dark birds with grey tips on the underside of their primary feathers. Most animals don't pay attention to vultures because they are not a threat. Vultures are not predators, they are scavengers. Mexican zone-tail hawks, on the other hand, are predators on many small mammals, birds and reptiles. The underside of their primary feathers is light, similar to the turkey vulture's. Zone-tail hawks will soar with vultures.
2. There is a saying that goes something like... 'red next to yellow can kill a fellow. Red next to black is a friend of Jack.' This saying is used to help distinguish between the mountain king snake, milk snake and the venomous coral snake. All three have red, yellow to white and red bands from head to tail tip. Many people confuse the three.
3. Many species of lycid beetles are black with bright orange wing-cases and are found in parts of the southwest. These beetles 'reflex bleed' - blood oozes from their leg joints when they are disturbed. Most predators (ants, birds and lizards) will not eat lycid beetles.

DOWN

1. In crypsis, organisms _____ into their environment.
2. Region where Henry Bates collected butterflies.
3. When an organisms looks like something it is not, it is a _____.
5. Black and yellow coloration is considered to be a type of _____ coloration.
7. Aposematically colored animal in Arizona that smells bad.
9. Prey use crypsis and mimicry to _____ predation.