

Where in the Wild?

Camouflaged Creatures Concealed...and Revealed

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A combination of pictures and poetry are used to engage children in learning about camouflage. On the left-hand page, a poem gives hints about the type of animal in the picture on the right. Children can try to find the animal in the picture and guess what it is from the clues. To check their answers, they lift up the right-hand page to find the animal revealed with additional information about it.

What Do You Think?

1. What was the hardest animal for you to find? Why?
2. Were you able to guess any of the animals from the clues in the poems? Which ones?
3. In addition to having a color that matches its background, what other things might help an animal stay hidden in plain sight?
4. How could you be camouflaged at home or school?

Try This!

1. Camouflage Creations
 - a. Show students a patterned sheet or tablecloth. Ask them to predict what colors would be camouflaged on this cloth, and what would stand out. Make a list of each on the board.
 - b. Lay the cloth on the ground and scatter over it 20 paper squares or animal shapes in (some of) the colors discussed. Use an equal number of shapes in hidden and stand-out colors; you may use each color more than once. The students should not watch while you are doing this.
 - c. Have students write the numbers 1-20 on a sheet of paper.
 - d. Choose one student to be the collector; the other students will be recorders. Tell the collector "When I say 'go', you will go to the cloth and pick up as many animals (squares) as you can until I say 'stop'. Each time you pick one up, you must call out the color." Tell the other students they are to record the colors in order, next to the numbers on their paper. (You may want to assign one student to watch the collector and make sure the colors are called as collected.) Give the collector only a minute to pick up the shapes.
 - e. Discuss the results. Were your predictions correct? Were some colors easier to see than others? Was this reflected in the results; that is, were more "stand-out" colors collected or collected earlier than camouflaged colors? Make a column graph showing how many of each type of color was collected.
 - f. Extension 1: How might we make the squares better camouflaged? Think about shading and pattern. Have students investigate these variables at <http://www.abc.net.au/beasts/fossilfun/camouflage/camouflage.swf>. The camouflage activity can be done individually or as a group.

- g. Extension 2: Have students research a habitat, and create either a drawing or model of it with the animals that live there. Have them present their creation to the rest of the class, explaining how the animals are camouflaged.

2. Culture Connection

- a. Some forms of animal camouflage do not result in blending in, but in misrepresentation; the animal looks like a twig, leaf, or something unpalatable. Humans employ trompe l'oeil (French: trick the eye) to make two-dimensional objects look three-dimensional (<http://www.trompe-l-oeil-art.com/trompe-l-oeil-pictures-posters.html>); all of the objects that appear to have depth are just part of the painting). Have your students look at the posters—are their eyes fooled? Does it look like the stingray is separate, or the pages of one poster are curling up?
- b. The caricaturist Al Hirschfeld hid his daughter's name, Nina, in his line-drawings of famous people. They are not easy to find, especially in small reproductions found on-line, but children will be fascinated by the story, and the NINAs are outlined in red in one picture at this site: http://search.yahoo.com/search;_ylt=A0geu9IfbZdJqKMA9V1XNyoA?p=nina+in+al+hirschfeld+drawings&fr=slv8-. After reading or telling Al Hirschfeld's story, have students try to draw their own pictures with "hidden messages" within.
- c. Sometimes it's important for animals to stand out rather than blend in—bumblebees are bright yellow and black, indicating they can sting. Venomous snakes, caterpillars, and frogs display vivid colors to say, "Stay away!" There is also a kind of protective coloring called mimicry, in which a harmless animal looks like a dangerous one. Humans often use warning colors. Have your students look in their home and neighborhood for examples. What color are stop signs? School buses? Fire engines? What do the stoplight colors mean? What does a school crossing guard wear?

3. Get involved!

- a. Two of the animals in the book are amphibians: the gray tree frog and the red-spotted newt. Often amphibians (frogs, toads, salamanders, newts, caecilians) are cryptic (camouflaged) animals. Many amphibian species are under threat due to habitat loss and pollution.
- b. Show your class some pictures of endangered amphibians (<http://animal.discovery.com/guides/endangered/amphibians/amphibians.html> or do a web search on "endangered amphibians") and have them choose one they would like to help.
- c. Find contact information for your federal representatives and senators (<http://www.usa.gov/Contact/Elected.shtml>).
- d. Have students write letters to their congress members about their concerns. Encourage them to illustrate their letters with their depictions of amphibians.

Field Trip

We often miss animals—especially small ones—that live near us. The ability to camouflage, by mimicking the color, texture, and/or shape of its surroundings, can be beneficial to both predator and prey. Movement can also be an important component of camouflage. Most often, staying very still makes an animal less noticeable, but occasionally a specific kind of movement will help—such as the way shrimp fish wave to resemble sea grasses. Take a field trip to a nearby park, garden, or even a strip of grass in the schoolyard and have children make detailed observations about their surroundings.

1. Have children bring notebooks with them, and tell them they are going to look closely at the area.
2. Try an exercise in engaging the senses; vision is deliberately used last because it is usually the first sense we use and sometimes overwhelms the others:
 - i. Sit in a circle, and ask the children to close their eyes and listen. Wait a minute or two, and then ask them what they hear.
 - ii. Tell them to keep their eyes closed and smell. What do they smell?
 - iii. Hand out small twigs, leaves, or shells. Ask them to close their eyes again and feel the object. What do they feel?
 - iv. Finally, have them open their eyes and look. What do they see?
3. Give the children time to look around the whole area and make notes or sketches.
4. Now have each child choose a small area to investigate. Marking the area can be facilitated by putting down hula hoops or four rulers in a square. Ask them to quickly write down what they see. Then have them look carefully for several more minutes. Do they see any animals they didn't notice at first? Are these organisms camouflaged? Have them sketch or describe animals they are unfamiliar with.
5. Back in the classroom, have students discuss what they saw. Did anyone not notice an animal at first because it was camouflaged? Important! Remember that mites, insects, and worms are animals, too. Have students look up the animals they couldn't name, and make a list of everything seen in the habitat.
6. Extension 1: have students make a chart depicting the types of cover in the habitat, e.g. green grass, brown tree bark. Then have them list the animals seen in each area. Are most of those animals camouflaged in some way?
7. Extension 2: have students make a three-dimensional mock-up of the area they studied with the animals found there.

Did You Know?

- The word “camouflage” is from the French word *camouflet* meaning “to disguise.”
- Experiments with flounders show they can alter their pattern to resemble a checkerboard! See the picture at http://www.fieldmuseum.org/research_collections/library/library_sites/photo_archives/zcloseup8.htm or do a web search on “flounder checkerboard”.
- Some animals, such as nudibranchs (a type of mollusk), change color by changing their diet.

- The white fur of polar bears is actually clear. The fur looks white because it reflects sunlight, much like the snow they are camouflaged against. A polar bear's skin is black.

Learn More...

Glossary

Adaptation: A characteristic that helps an animal survive in its habitat. For example, zebras have stripes that help them blend together as a herd to confuse predators (a physical adaptation) and shrimpfish orient in a vertical position and sway with the current like corals or seaweeds (behavioral adaptation).

Camouflage: An adaptation that allows an animal to blend in with its surroundings or resemble another organism. Color plays an important role in camouflage, but shading, markings, shape, texture and movement are also utilized. Both predators and prey employ camouflage, and there are names for different strategies, such as countertrading and mimicry. For more on camouflage, go to <http://www.howstuffworks.com/animal-camouflage.htm/printable> or do a web search on “animal camouflage”.

Al Hirschfeld: Born in St. Louis in 1903, Hirschfeld was a famous American caricaturist who drew famous people in the arts and politics. His drawings frequently accompanied theatrical reviews in the *New York Times*. After his daughter, Nina, was born in 1945, he inserted her name into his works, although they were well-camouflaged. For more, go to <http://www.alhirschfeld.com/bios/alhirschfeld.html> or do a web search on “Al Hirschfeld”.

Amphibian: The word comes from ancient Greek, meaning “two lives”. Amphibians are vertebrates that begin their lives as animals with gills, but metamorphose into air-breathing adults. They include frogs, toads, newts, salamanders, and caecilians. For more on amphibians, go to http://zipcodezoo.com/Key/Animalia/Amphibia_Class.asp or do a web search on “Amphibia”.