

4-H NATURE CONNECTIONS



WHAT DO YOU SEE?

Purpose:

Develop observation skills, understand camouflage, and enjoy the outdoors.

Location:

Outdoors

Time required:

30–45 minutes depending on the number of participants

Materials:

- Nature journal (one per participant)
- 16–20 small, random items (tennis-ball size or smaller)
- Checklist picturing the random items (see instructions in the “Getting Ready” section; if the checklist is laminated or put in a page protector, it can be reused)
- Clipboards (optional)
- Writing utensils (pencils or pens, dry-erase markers if reusing the checklists)
- Flour to mark a path (optional)



Green foam dart hidden in green grass.

Background:

Learning to observe is an essential skill for fully exploring and experiencing the wonders of our world. Strengthening observation skills also improves your ability to interact and respond appropriately at school, home, or in your community.

Improving your observation skills allows you to “listen” with more than just your ears and make better decisions. It also enhances your ability to interact with others and to respond in an appropriate manner. Both are keys to success at work and at home. In the workplace, a good employee not only listens well, but is also aware of what is happening around them. (CC/MIT, n.d.)

Animals are classified as *predator* or *prey*. A *predator* catches and eats other animals (known as their *prey*).

Camouflage is a way animals disguise themselves. Prey animals may use *protective coloration*, a type of *camouflage*, to conceal themselves from predators. Predators may also use protective coloration to successfully hunt their prey, using concealment to surprise them.

Some examples of animals’ use of camouflage follow:

- In some animals, the color or patterns of the fur, feathers, or skin is similar to the environment. The snowy owl is white to blend in with its snowy habitat. Fawns are brown with white spots to blend in. Garter snakes are green and brown.
- Some animals change color with the seasons. The snowshoe hare is brown in summer, but white in winter. Weasels are brown in summer, but white in winter. (In winter, a weasel is called an ermine.) The bird called a ptarmigan is white in winter, but brown in summer.

Some protective coloration and other tactics that animals may develop to better survive in their environment follow:

- The ability to *freeze*, to remain absolutely motionless, often improves the ability to hide. A young spotted fawn hidden in a meadow or forest, a cat crouching in advance of pouncing on their prey, and a ruffed grouse waiting until danger is near to explode into flight are all examples of the ability to freeze.



- A series of stripes or spots on an animal's coat could be *disruptive coloration*. These patterns combined with special colors allow an animal to blend into the background by eliminating the sharp outline of the body. A fawn has spots on its fur; a bobcat has spotted fur; a raccoon has stripes and rings.
- *Body shape and texture* can help animals blend in with their surroundings. The water scorpion and the walking stick are nearly impossible to see since they resemble twigs. The rough skin texture of many reptiles and amphibians permits them to be part of the groundcover they rest on. The inchworm holds its body at an angle to the branch it is climbing, which makes hungry birds mistake it for a twig. Even wet, slimy skin can be misleading when the habitat is moist or completely wet.
- *Light and shadow* is an effect used as protection by some animals. Many birds and fish are designed with darker backs and lighter bellies to blend in with the sky above and the surface below. This light against light and dark against dark is called *countershading*.
- Constructing camouflage from existing materials is called *masking*. The caddisfly nymph builds a tube-like shelter from twigs, pebbles, or reeds on the bottom of a stream or pond. Spider crabs stick pieces of vegetation to their shells to appear like the bottom of the tide pools. Some bird nests are made from materials especially chosen to blend in with the trees, shrubs, or ground where they are built.
- *Protective mimicry* is a scare tactic that may frighten away possible predators. One common example is large spots on the body or wings that resemble the eyes of a bigger or stronger animal. The polyphemus moth is one example of an animal that has two large, dark spots on its hindwings that mimic eyes.
- *Warning coloration* is not for concealment. Animals that exhibit this phenomenon may either smell or taste bad or inflict great pain. Some examples are skunks, monarch butterflies, and poisonous amphibians, such as the golden poison frog. The various colors serve as a warning to predators to stay away.

Getting Ready:



Toy truck hidden at base of a tree.

1. Collect 16 to 20 small, random items.
2. To make the picture checklist, take a picture of each item on the same neutral background, such as on a piece of plain paper. Then arrange the pictures in a document so you have a visual checklist for participants to use when doing the activity. Using pictures means youth do not need to be able to read, making it accessible to all ages and abilities.
3. If you laminate the checklist or put it in a plastic page protector, you can use it multiple times.
4. The day of the activity, place the items along the trail the youth will follow. Place items in plain sight *but* so they blend in with their surroundings. For example, place a brown marker in a pile of twigs, a green foam dart in grass (pictured on the first page), or a toy truck at the base of a stump (pictured).
5. If there is not a clear trail, you can use flour to mark the path youth should follow.
6. Decide how to partner participants.



Procedure:

1. Introduction: “Today we are going to test and strengthen our observation skills. *What do you think it means to make observations? How do you observe something? Why might it be important to be observant when outdoors?* You will work with a partner to find all the items on the checklist.”
2. Pass out the checklist on a clipboard to each participant. Say to participants: “When you observe (find) an item, shhh, keep it a secret from the other teams. Subtly (sneakily) show your partner and mark it off on your checklist. Then slowly move on.”
3. Have participants line up with their partners at the beginning of the trail and provide each with a dry-erase marker (if the checklist is laminated) to use to check off the items on the checklist. If the checklist is not laminated, provide each with a pen or pencil. Remind them they must follow the designated path. They may *not* leave the path. They should *not* pick up or touch any of the items. They can move slowly but they must keep moving forward.
4. Start one team, allowing them to move about 10 to 15 feet down the trail. Then start the next team. Remind participants that they should keep space between them and the group in front of them. They should not pass the group in front of them. Continue spacing out teams until all are moving slowly through the trail.
5. Move to the end of the trail to greet teams as they finish. Most teams will not have observed everything. If there is time, allow teams to travel the path again to see if they can observe more items.

Wrap-Up:

1. When everyone has finished, in an open area of the trail, ask who observed all 20 items. Generally, no team finds them all.
 - a. Then ask participants to turn and talk to another pair. Talk about which item(s) seemed the easiest to find. Then, ask teams to share their item in a quick round robin.
 - b. Next, have them turn and talk about why they think that item was the easiest to find.
2. Ask youth to quietly think for 1 minute about what they noticed about all the items. (All the items on the picture checklist are manufactured by humans.)
 - a. Allow each participant to quickly state one thing they noticed. This should lead to some of the same explanations that occur in science for why organisms may be camouflaged or have coloring that allows them to blend with their surroundings.
 - b. Provide youth time to record their thoughts about the activity and their observations in their nature journals.
 - c. Encourage youth to continue to build their observation skills and to record their observations in their journal at home and other locations after the activity is finished.
3. Before you leave, walk as a group along the trail and ask participants to take turns recovering the items. Ensure that everyone sees where each item is before it is removed.
4. Discuss with the participants how humans and various organisms use camouflage. Consider colors and patterns that stand out from the background. Ask: *What applications might these be useful for?* (example: hunter orange or construction orange)



Nature Journal Prompts:

- Which items did you think were the most difficult to see?
- Venture into your garden, lawn, or other outdoor space. Do you see any examples of camouflage? Look closely! Try to draw what you see.

Variation:

Allow participants to bring their own item and hide it along the trail.

Reference:

CC/MIT. (n.d.). *Improving observation skills*. MIT Office of Digital Learning. <https://ccmit.mit.edu/observation/>

Resource:

Michigan State University Extension. (2019, June 19). Why do some animals use camouflage? *Teaching Science When You Don't Know Diddly Squat*. <https://www.canr.msu.edu/resources/teaching-science-when-you-don-t-know-diddly-squat-why-do-some-animals-use-camouflage>

4-H and MSU Extension Strengthening Michigan's Academic Standards

The Michigan 4-H Nature Connections lessons are intentionally designed to enhance the Michigan Academic Standards from the Michigan Department of Education (<https://www.michigan.gov/mde/0,4615,7-140-28753---.00.html>). These lessons provide an opportunity for youth to engage in and apply Michigan's formal education standards. In doing so, young people develop the skills needed to succeed with critical thinking, collaboration, communication, and additional career-necessary competencies. Youth develop these skills in a real-world setting to experience direct concept application and personal growth. This is accomplished in a way that includes hands-on activities, experiential learning to meet students where they are, and recognition of various ways of synthesizing and applying knowledge.

