



# HAWKQUEST®

Environmental Education using Live Birds of Prey

Thank you to Xcel Energy Foundation and their Environmental Partnership Program

## Predator/Prey Survival — Games People Play 101 (Suitable for K-12)

### SIGHT HUNTING -- CAMOUFLAGE AND NATURAL SELECTION

#### OBJECTIVE

To simulate a hunt for camouflaged animals using sight. To learn about the process of natural selection by discovering which prey survived the hunt to produce the next generation of their species.

#### TEACHER BACKGROUND

Prey species use camouflage as a way to protect themselves from predators. Sometimes the same species have different colors to better blend into their habitat. For example, the Eastern Screech Owl, which is both a predator and a prey of other animals, comes in two colors, also called morphs, gray or red. Scientists have noted that the red morph owls are more commonly found in the south where reddish pine trees are dominant. The gray Eastern Screech Owl is more commonly found in the north where the trees are predominantly grey, hard woods. These two Eastern Screech Owl morphs have evolved to use their natural habitats to their optimum advantage, using camouflage to hide from predators.



Eastern Screech Owl

Natural selection is the process where animals that survive the obstacles in their environment, including predators, will be the parents of the next generation. The animals that survive this game will be those best adapted to their environment. In turn, they might pass off their characteristics, in this case color or camouflage, to their young.

The camouflage and natural selection game teaches students the importance of color and how animals evolve to hide from predators and better survive in their environment. The students must select which morph of a specific snake species has the greatest survival advantage based on the selected habitat.

## **MATERIALS**

10 pieces each of different colored yarn, ribbon or thinly cut construction paper, approximately two inches long (use colors like red, blue, brown, green, yellow).

Stopwatch

## **GOAL**

To determine which morph has a greater chance of survival in a selected habitat and therefore will go on to produce the next generation of snake.

## **PROCEDURE**

1. Explain to the students how each color represents a different morph of the same snake species.   
 Make predictions on which morph has a better chance of survival.
2. Select a green space or other habitat around your school. Scatter the different colored yarn,    
 ribbon, or paper around the grass, bushes, trees and rocks. Make sure one of selected colors    
 blends into the environment you have chosen, i.e., gray on rocks, green on grass, black on    
 asphalt. Do not let the students see where you have placed the colored pieces.
3. Tell the students that they are hungry, large raptors looking for snakes and that their prey is    
 hidden in your selected habitat.
4. Give the students five seconds to pick up as many snakes as they can. Count the number of    
 prey found and the colors. Which colors were found the most? What will happen to these    
 colored snakes over time if they do not evolve to better blend into their habitat?
5. Give the students another five seconds to find the remainder of the prey. What colors remain    
 hidden? When the breeding season begins, who will be the parents and what morphs will the    
 offspring most likely be?
6. Older science students, may want to play the game several times and graph or use percentages   
 to describe their findings.

## **VARIATION**

Change the habitat and play again. Which morph will be dominant in the new environment?



