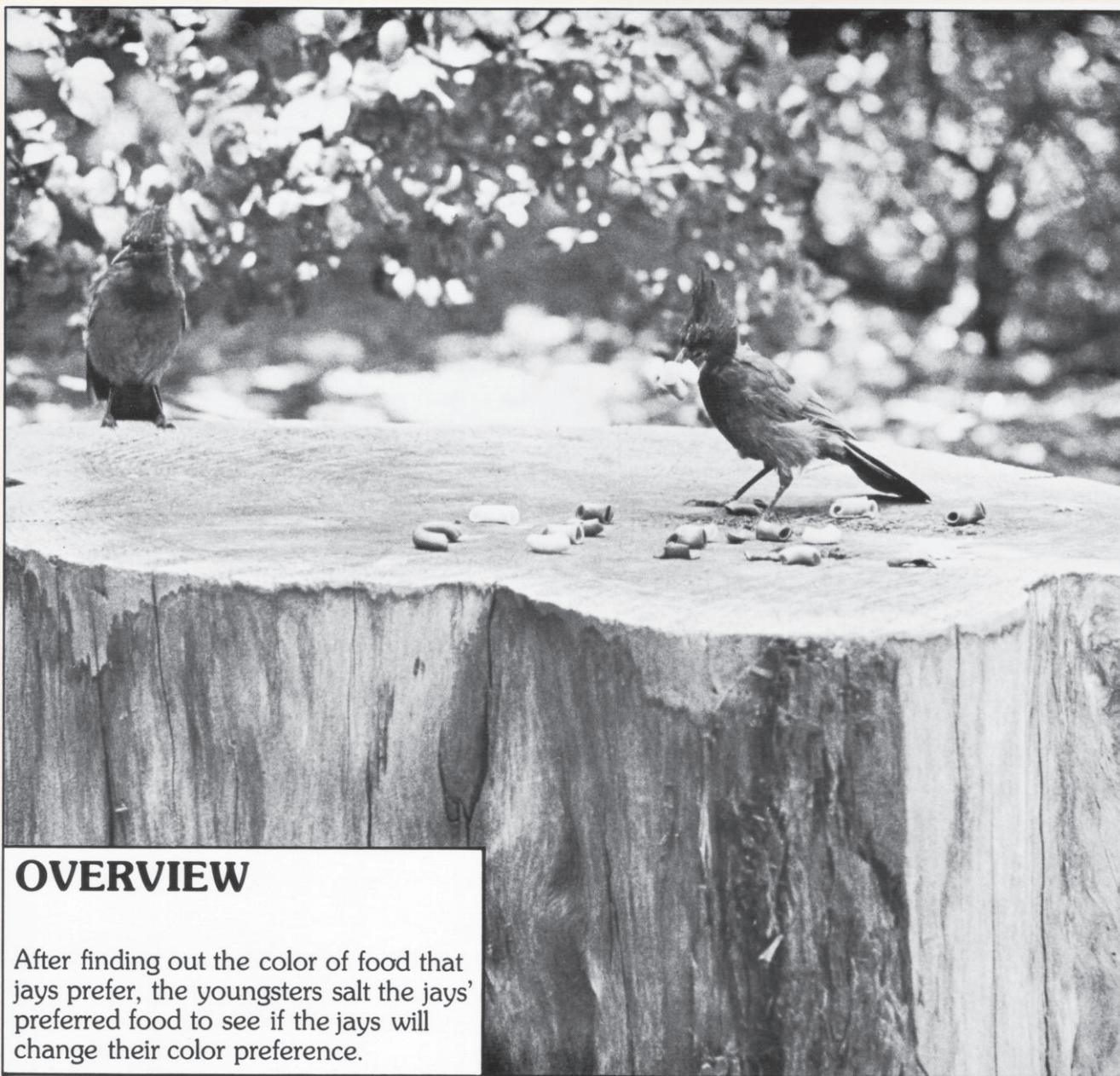


JAY PLAY



OVERVIEW

After finding out the color of food that jays prefer, the youngsters salt the jays' preferred food to see if the jays will change their color preference.

BACKGROUND



Birds use color as we do to recognize foods and to distinguish between those that taste good and those that taste bad. For example, jays learn that brightly colored Monarch butterflies taste bad. After one taste, jays will not eat Monarchs again. They will, however, sample butterflies with different color patterns. Cedar Waxwings and robins ignore green, unripe holly berries, but greedily

devour these berries after they ripen and turn red. Recognizing foods by color is an animal behavior shared by most primates, many fishes, reptiles, and insects, as well as birds and humans.

This activity deals with the food-color preferences of jays. Jays are common birds whose lack of shyness and relatively large size make observation easy. Jays

BIO Bird Behavior
KEY Food Preference
Color and Taste

also eat a wide variety of foods and are frequent scavengers at picnic areas and camp sites. Offering them human foods such as macaroni will not alter their feeding habits or harm them.



PIÑON JAY

CHALLENGE: FEED JAYS AND FIND THE COLOR OF FOOD THEY PREFER. TRY TO CHANGE THIS PREFERENCE BY ALTERING THE TASTE OF THE FOOD.

PREPARATION



Group Size. This activity works best with small groups, preferably a maximum of ten youngsters per adult. It is also an excellent activity for adult and family groups.

Time. Plan on forty to sixty minutes for this activity. Jays may need ten to fifteen minutes to find the bait. This is a good activity for a picnic, lunch, or rest period because the observations require patience and quiet. Warm, sunny days are best.

Site. Take some cooked macaroni to sites where jays might gather. Picnic or camping areas, parks, or established bird feeders are often good places. Select a site where at least five jays readily go after cooked macaroni that you set out. Find a low limb, a bench, or a flat rock to be used by the entire group as the bait station.

Materials

1. Bait. Cook an eight-ounce package of elbow macaroni *without* adding the salt to the cooking water. When the macaroni is tender, evenly divide it and the cooking water into six bowls. Add 1 tsp. of food coloring to each of four bowls: red to the first, green to the second, blue to the third, and yellow to the fourth. Do not add coloring to the last two bowls. Stir until the food coloring covers all the macaroni. If the macaroni is not a bright, rich color, add a little more coloring. Let the macaroni sit in the coloring for ten to fifteen minutes. Rinse each batch of macaroni separately in a collander. Drain, and package each

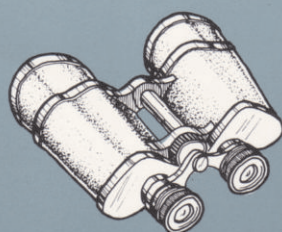
MATERIALS



For each group of ten:

- 1 eight-ounce package of elbow macaroni*, cooked (See the "Preparation" section.)
- 1 collander
- liquid food coloring* (red, green, blue, yellow)
- 6 plastic bags* for holding the macaroni
- 5 pencils
- 1 data board*
- 1 marking pen*
- 1 small box of table salt
- flavorings such as cayenne, hot sauce, pepper, mustard, and almond extract
- 3 mixing containers* (e.g. the bottom half of a milk carton)
- paper towels
- 1 stick or spoon to use for mixing
- a watch with a second hand
- 1 sheet of Action Cards*
- 2 copies of each Action Card
- binoculars (optional)
- field guides to local birds (optional)

* Available from Delta Education.



JAY PLAY

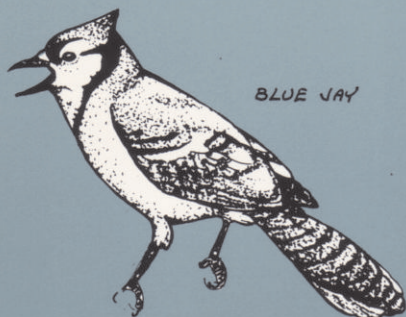
color in separate plastic bags. Package the two bowls of white macaroni in two bags. Refrigerate the macaroni until you are ready to use it. Use the prepared macaroni within five days.

2. Action Cards. Make two copies of the sheet of Action Cards, and cut them apart.

ACTION



1. At the site, show the youngsters the colored macaroni and explain that it will be used as bait to attract jays. Mention that birds can see colors.
2. To get the youngsters to think about preferences in food color, ask how they would react to black mashed potatoes or blue chicken. Encourage a short discussion of how, through experience, we expect foods to be a certain color. Ask the youngsters if they think jays might have food-color preferences.
3. Divide the group into five teams, and read the challenge aloud. Give each team a package of macaroni of a different color. Retain one package of white macaroni for future use.
4. Point out the bait station where the teams should place their macaroni. Then ask each team to place twelve pieces of its macaroni at 4 cm intervals at the bait station in a single line or in several lines. Ask the teams to alternate the colors like a string of Christmas-tree lights, so that all pieces of one color are not grouped together.

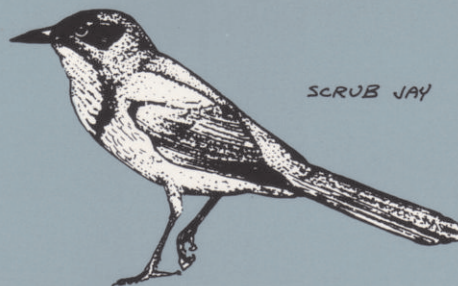


BLUE JAY



GRAY JAY

5. As soon as the youngsters finish putting out the macaroni, ask them to sit in a group at least six meters away from the food. Tell the kids to be quiet and patient. One youngster should note the time the trial begins to see how long it takes for the first birds to come to the macaroni.



SCRUB JAY

6. Give each team an Action Card. Each card gives different observation instructions. The teams can share their observations at the end of the session.
7. Tell each team to keep track of its macaroni. As soon as six pieces of one color have been taken, end the trial. Have each team record on the data board the number of their pieces of macaroni the jays took during the first trial. Ask the group which color the jays seem to prefer. Suggest to the teams that they conduct a second trial like the first one. (A second trial serves to confirm the jays' color preference and allows the youngsters to observe action they may have missed in the first trial.)
8. After the second trial, ask the youngsters to refer to the data board and determine which color the jays prefer. (It is usually white.) Ask the youngsters if they can think of ways to change the birds' color preference. Among the ideas usually suggested is making the preferred

BIO
KEY
Bird Behavior
Food Preference
Color and Taste



Copyright © 1981 by The Regents of the University of California

color taste bad. Show the teams the salt and explain that adding salt to the white macaroni will not change the color, just the taste. Give the white-color team a mixing container, the salt, and a mixing stick. Make sure that enough salt is added to completely coat the macaroni pieces. Use some of your reserved white macaroni if it is needed.

9. If the jays do not prefer white macaroni, have the children add one of the other flavorings to the colored macaroni the jays prefer. Use a flavoring that is the same color as the macaroni. (The salt will change the color of the dyed macaroni as well as the taste.)

10. Conduct a third trial similar to the first two trials, but use the salted or flavored preferred-color macaroni in place of the plain macaroni. After six pieces of one color are eaten, record the results on the data board. Be sure to indicate which color was salted or flavored.

11. Conduct one or two more trials. If the birds reject the salted or flavored macaroni, encourage the group to conduct another trial using only plain (that is, unflavored) pieces of the preferred color. Record the results. Did the jays learn to avoid what was once their favorite color, even though it now tastes good?

12. Before the session ends, ask the teams to read their Action Cards and share any behavior they observed and information they gathered.

JAY SQUAWKS

1. Do you think jays can learn? How well did they learn and how quickly?

2. In what other ways is color recognition important to birds? To humans?

3. Why do you suppose jays are willing to try foods that they normally do not eat?

BRANCHING OUT



This activity usually prompts youngsters to further explore color preferences or jay behavior. Some interesting challenges are:

1. Use food to bring the jays as close to you as possible.

2. Find out which kind of food the birds prefer when they must select from a number of foods of the same color. For example, conduct a trial using all white-colored foods such as macaroni, bread (without crusts), turnips, popped popcorn, and potatoes. After a food preference has been determined, try to change the food preference by salting the preferred food.

3. Find out if jays prefer different colors of food in different locations. Do they seem to like one color on the ground and another color in the branches?

4. Discover if jays will eat macaroni of a non-preferred color if it is the only color available.



STELLER'S JAY

Jay Play Action Card



When more than one bird lands near the food, how do they act?

Do they take turns eating? _____

Do they fight over the food? _____

Does one bird chase the others away? _____



Jay Play Action Card



How many different birds did we attract to the food?

Were they all the same kind? _____

If not, how many different *kinds* were there?



Jay Play Action Card



Are the birds communicating with each other by...

calling to each other? _____

looking at each other? _____

doing something else? _____

What? _____

Jay Play Action Card



What do the birds do with the food after they pick it up?

How many times do they:

eat it? _____

fly away with it? _____

bury it? _____



Jay Play Action Card



How many food pieces do the birds pick up at once?

1 2 3 4



Jay Play Action Card



How do the birds approach the food?

slowly approach it _____

go right to it _____

look around a lot first _____

sneak in _____

