

## PROTOCOL

**Title:** Bird Behavior

**Author/Adapted from:** Jornada Basin LTER and Chihuahuan Desert Nature Park's Schoolyard Desert Discovery Project

**Background:** The first thing an ethologist (a scientist who studies animal behavior) must do is create an *ethogram*, a list of behaviors with a description or definition of each one. For example:

### Behavior

<u>Description</u>	
Drinking from a cup drained into swallowed, and then the cup is returned to the	A cup is lifted from a surface to the mouth, liquid is the mouth and surface.

This inventory of the species' behavior is the starting point for further study. From this list, ethologists can form hypotheses about the causes and rates of a particular behavior.

Behaviors can be divided into two groups: *states* are ongoing behaviors that can be timed, and *events* are behaviors that happen so fast that they would be hard to time. We count the number of times an event occurs. For example, reading a book is a state and we could time how long someone spends reading a book; sneezing is an event, and we could count how many times a person sneezes.

### **Materials:**

Stopwatches  
Binoculars  
Bird identification books  
Meter tape  
Bird seed

### **Procedures:**

#### *Family Eating Ethogram*

1. Explain ethograms to students and have them complete the Family Eating Ethogram during a meal. All directions are listed on the student page for the Family Eating Ethogram. During the next class period, discuss the results of the Family Eating Ethogram.

#### *Creating An Ethogram for Feeding Birds*

2. In the schoolyard, select an area that birds frequent and mark out a three meter circle as the feeding area. Set up as many feeding areas as needed to accommodate your class size. Three days before the study, bait each feeding area

- with bird seed (approximately 3 cups of seeds). This will acclimate the birds to a new food source.
3. Tell students that they will now develop an ethogram for birds visiting a bird feeder. The Bird Identification Activity or the Bird Feeding Activity would be good activities to complete before this activity so students can learn to identify the most common birds.
  4. Each student will choose one bird species to watch carefully for 5 minutes. Have students record the species of the bird on the Bird Ethogram.
  5. During the five-minute observation, students will name and describe all of the behaviors of their bird on the Bird Ethogram.
  6. As a class, list all the behaviors that were observed and recorded. Ask students if one ethogram can be created for all species of birds or if a different ethogram needs to be created for each species. After the class ethogram is complete, identify which behaviors were states (s) and which were events (e).

#### *Conducting the Bird Behavior Study*

7. Make sure the ethogram created above contains “feeding” and that the class has a precise definition for this behavior (e.g. seed in beak, head down with beak in seeds, etc.).
8. Have the class choose one other behavior and one bird species to study. Be sure to choose a species that is common in your schoolyard.
9. Students work in groups of five to make observations with the following tasks:
  - a) Timer: watches the stopwatch and say “now” every 20 seconds.
  - b) Recorder: records data from each observer on the Bird Behavior Data Sheet.
  - c) *Total birds present* observer: makes an instantaneous count of the number of birds of the chosen species at the moment the timer says “now.”
  - d) *Feeding* behavior observer: makes an instantaneous count of the number of birds of the chosen species *feeding* at the moment the timer says “now.”
  - e) *Class-chosen behavior* observer: makes an instantaneous count of the number of birds of the chosen species *doing the class-chosen behavior* at the moment the timer says “now.”
10. Use the same feeding set up as described previously (#2 above).
11. Observations of feeding and the class-chosen behavior will be done for 5 minutes once a month, at the same time each day. Morning is the best time to observe.
12. After the observations, calculate the total number of birds present, the total number of birds performing the feeding behavior, and the total number of birds performing the class-chosen behavior on the Bird Behavior Data Sheet.

13. Calculate the percentage of birds feeding and the percentage performing the class-chosen behavior on the Bird Behavior Data Sheet.
14. Use data from each month to fill out the Monthly Behavior Data Sheet and graph percentages.