

Animal Observations

What do animals do when you ARE watching?



<https://www.facebook.com/IllinoisPeregrines/>

Summary:

Watching animals helps us better understand them. Scientists ask questions and make observations to help answer those questions. The Field Museum's Chicago Peregrine Program uses webcams to observe Peregrine Falcons while they raise their young. By better understanding these birds we can help protect them. Learn the skills needed to make your own scientific observations. Use your skills to learn about falcons, animals in your backyard, or even your pets!

Guiding Questions:

What do you see the animal doing?

Why do you think the animal is doing that?

Why do we collect and record data when watching animals?

Experience Goals:

- Ask questions about what an animal is doing.
- Observe an animal and record data.
- Record and share your discoveries about animal behavior.

Supplies:

- Animal to observe:
 - Falcons on webcams
 - Wildlife you can see outside
 - A pet
- Clock, watch, or phone with timer
- Data Collection Sheet on page 10 (or blank paper to record your data)
- Ethogram Chart on page 11 (or blank paper to record behaviors)
- Pen or pencil

Steps:

1. Observe an Animal
 - a. Choose an animal to watch. We will use the Peregrine Falcons of Chicago as an example, but you can watch any animal!
 - b. Watch your animal for about 5-10 minutes. *What are they doing?*
 - c. List what you see them do on a piece of paper. On the webcams, falcons can be seen resting, sitting on eggs, feeding young, cleaning their feathers, and more!
 - d. Other animal webcams can be found at www.explore.org.
2. Make an Ethogram
 - a. An **ethogram** is a list of the behaviors an animal does.
 - b. Take some time to watch your animal. *What is it doing?*
 - c. Make a list of each unique behavior you observe with a description of what is happening. You can fill in the Ethogram Chart included; the example below will help you.

- d. Create your own shorthand abbreviations (“short”), so when you record observations, you can write them down quickly and get back to watching your animal.

Example Ethogram

Behavior	Description	Short
Preen	Bird cleans feathers with beak or feet	pr
Move	Bird is in motion traveling from one place to another	mo
Rest	Bird is stationary in one place	re

- e. Some behaviors are rare, or may not be visible if your view is limited. For example, on a webcam of a nest you won’t see falcons flying. That’s okay! Just focus on the behaviors you are observing. You can also always add new behaviors to your ethogram later if you discover them during your research.

3. Ask a Question

- a. Ask a question about your animal! This will guide which behaviors you want to focus on. *What are you curious about? What could you watch for to help you get the answer?*
- b. Example Questions:
- i. *How much time does a falcon spend sitting on their eggs?*
 - ii. *What does a falcon do in and around its nest?*
 - iii. *How often do falcons feed their chicks?*

4. Collect data!

- a. It is time to make scientific observations! There are several methods to do this. A **method** is a process scientists use to collect data.
- b. Here are a few methods you can use to collect data:
 - i. **Scan Sampling**–At a regular time interval (maybe every 5 or 15 minutes) record what your animal is doing. It’s especially useful to use a repeat timer to remind yourself when it’s time to collect data again. If you’d like, you can use this data to create an activity budget for your animal. An **activity budget** is used to understand how much of the day your animal spends performing each behavior (see the example chart on page 6). *How much time does your falcon spend sitting on their eggs?*
 - ii. **Focal Sampling**–Write down everything an animal does, with start and end times, during your observation period. This gives a detailed snapshot of one part of your animal’s day. *What does a falcon do at its nest?*
 - iii. **All Occurrences**–Pick one or more behaviors you are interested in and record every time this behavior is displayed. How often do falcons feed their chicks? Consider adding notes of what else is happening: the weather, any sounds, etc. This can help identify how often a particular behavior happens, and if there are other factors that may be associated with the behavior.

- c. Once you have chosen your method, use or copy the **Data Collection Sheet** on page 10 and fill in your research question at the top of the page.
 - d. Gather your necessary supplies. Make sure you have your ethogram, your Data Collection Sheet, and something that tells time. You will want to stay where you can see your animal, so keep everything you'll need nearby.
 - e. Watch your animal and record your observations using the data method you chose. You may also want to write down the time of day and weather!
 - i. Your presence may change what an animal does.
Scientists try to stay quiet and keep distance between themselves and the animals to reduce influence on the animal's behavior. If possible, try and keep the animal from noticing you at all!
 - ii. Look at the examples below of data collected for falcons on webcams for an idea of what your data might look like.
5. Analyze and Share your Results
- a. Take some time to look over your data. *Do you notice any patterns? What surprised you about what you observed?*
 - b. If you'd like, you can calculate your animal's activity budget. Look at the example data and results below.
 - c. Share your observations with friends or family! *Did your results or discussions spark any new questions?* You may find ideas for a new behavior research project!

Example using Scan Sampling

Data Collection Sheet	
Research question: How much time do falcons spend sitting on eggs?	
Time	Observation
2:25	Resting, on eggs
2:30	Resting, it looks windy
2:35	Resting
2:40	Resting
2:45	Resting
2:50	Resting
2:55	Resting
3:00	Resting
3:05	Resting
3:10	Resting
3:15	Resting
3:20	Resting
3:25	Resting
3:30	Resting
3:35	Moving, from the edge of the platform toward the eggs

Proportion of time resting*

$$\frac{\begin{matrix} 14 \\ \text{(Resting observations)} \end{matrix}}{\begin{matrix} 15 \\ \text{(Total observations)} \end{matrix}} \times 100 = 93\%$$

Proportion of time moving

$$\frac{\begin{matrix} 1 \\ \text{(Moving observations)} \end{matrix}}{\begin{matrix} 15 \\ \text{(Total observations)} \end{matrix}} \times 100 = 7\%$$

In my 1 hour and 10 minute observation, the falcon sat on the nest 93% of the time.

*You might see an animal doing the same thing over and over again, that's okay! That could indicate how important a behavior is (like sitting on eggs to incubate chicks) or that you need to collect more data to get a more detailed idea of their activity.

Example using Focal Sampling

Data Collection Sheet	
Research question: What do falcons do at the nest?	
Time	Observation
4:10-4:15	Falcon is at rest sitting on nest
4:16	Preens feathers
4:16-4:22	Re
4:22	Pr
4:22-4:24	Re
4:24	Pr
4:25	Bird extends head forward, grabs at loose feathers with beak, repeatedly
4:26-4:27	Bird stands and appears to gather feathers underneath them, near eggs
4:27-4:28	Re
4:28-4:29	Bird repeats gathering of feathers (nest material?)
4:29-4:30	Bird returns to resting upon eggs

Example using All Occurrences

Data Collection Sheet	
How often do parent falcons feed the chicks?	
Time	Observation
8:13	Parent feeds, looks like pigeon
8:42	Parent feeds, parent blocks view
9:20	Parent, red leg band, brings small bird
9:36	Parent feeds chicks small bird
10:40	Parent feeds chicks pigeon
11:10	Parent feeds chicks unknown food

$$\frac{\text{6 (Total observations)}}{\text{3 hours (Duration of observation)}} = \text{Average of 2 feedings an hour}$$

The food seems to mostly be other birds!

Variations:

Use one of the data collection methods to track how your animal uses its **environment**. Define different areas you are interested in; if you're observing a pet in your home for example, you can identify the kitchen, living room, and bedroom. Record your animal's locations like you did with their behaviors. This data tells you where your animals spend their time. If you have multiple pets, you can see if they spend time together or separately and if they have preferred territories. *Where do your animals spend most of their time? Why do you think they use that space so much?*

Extensions:

The more data you collect, the better it will represent the behavior of your animal. Longer observations provide more information. You can also extend your research project and collect the same type of data over multiple days. You may get a more detailed overall picture, or try to identify changes over time!

You can apply your animal observation skills to a variety of research projects at <https://zooniverse.org>

