

# An Introduction to Studying Animal Behavior in the Classroom: An OPIHI Extension Activity

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The scientific study of animal behavior (often called Behavioral Ecology, or Ethology) is more than just watching animals do things, although that is the first step in any behavioral study. Studying behavior is about asking questions about why animals do the things they do, how they are adapted to do those things, and how their behavior influences their survival and reproductive success.

A study of animal behavior can help students develop their observational skills and gain an understanding of the processes and habits of mind that scientists use. The first goal of any behavioral study in the classroom is for the students to simply work on honing their observational skills. As they observe the fish in tidepools and streams on field trips, or in the classroom tanks, or in their own individual tanks, they may focus on the colors and shape of the fish. They may wish to give each fish an individual name; this is an excellent organizational system for identifying their animals. This is where all behavioral scientists start: by simply paying close attention to what the chosen animal of study does and recording information about it. During this time, they will begin to notice things that the fish are doing, and may ask questions about what they are doing or why they are doing it. It is not necessary to immediately answer these questions. It is necessary to begin to think about how we (as scientists or students, or hopefully both) can answer them themselves. These are the questions that will shape your study of animal behavior. *“How could you find out more about that?”*

Descriptive observations of animal behavior are extremely valuable, especially if carefully and thoroughly recorded. These observations, which we call **qualitative data**, have their limitations, however. If we want to compare behavior between animals, or compare the behavior of an animal under different conditions, it is easier if we have some numbers, or **quantitative data**, that we can examine mathematically (even if its something as simple as making a table or graph). The best way to determine what kinds of quantitative data we can take is to go back to our careful descriptions of what the animal did, and choose something that we can count or measure. For fish swimming in a tank, for example, we may notice that they swim by moving their tails, and to measure how active a fish is under different conditions, we can count the number of times its tail moves. You can also do things like time how long a fish spends in different parts of its habitat, or measure how far it swims to get different kinds of food. Don't forget to make multiple counts. This helps control for any error should the animal be doing something abnormal, or should something go wrong during a data collection period.

The most important thing is to design your study based on your original observations of the animal, and the questions you originally asked about it. After all, you asked those questions because you were interested and curious about what was happening. What better thing could there be to study than something you are interested in?

## Observing Behavior

Describe the size, shape, and colors of the fish. Are any of the fish different from each other? Why do you think they are different?

Describe, in detail, how the fish swim.

Are there any parts of the tank that the fish prefer? What about their behavior makes you think they prefer that area?

Watch and see if two fish interact with one another. Describe, in detail, what happens. Why do you think they are behaving this way?

We are going to give the fish some food. Describe their feeding

## Making Quantitative Observations: Measuring fish activity

1. Watch one fish for one minute. Count the number of times its tail moves back and forth. Record your result. Using the same fish, repeat your count three times. If you have time, repeat the measurement with another fish.

Fish name			
Trial #1			
Trial #2			
Trial #3			

2. Watch one fish for one minute. Count the number of times it swims past a mark placed on the outside of your jar. Record your result. Using the same fish, repeat your count two more times. If you have time repeat the measurement with another fish.

Fish name			
Trial #1			
Trial #2			
Trial #3			

3. Watch one fish for one minute. Count the number of movements it makes toward and away from other fish. Record your result. Using the same fish, repeat your count two more times. If you have time, repeat the measurement with another fish.

Fish name			
Trial #1			
Trial #2			
Trial #3			

4. Choose your own measurement of fish activity to record. Use the same procedure (one fish for one minute, repeat two more times).

Write what you measured here: \_\_\_\_\_

\_\_\_\_\_

Fish name			
Trial #1			
Trial #2			
Trial #3			