

Following Fish: Observation activity

<http://www.usc.edu/org/cosee-west/Feb2809Resources/14Following%20Fish.pdf>

CA Science Standards:

K 2.a, 1st gr. 2a-d; 2nd gr. 2b,d 3rd gr. 3a-c; 4th gr. 2b, 3a 5th gr. 2c; 6th gr. 5a,c-e;
7th gr. 3a, 5a; 8th gr. 1b, 8d HS Ecology 6a, g, 9b

Ocean Literacy Principles 5

Objective: understand fish behavior by observing

- how the fish moves,
- size of home range, time spent eating,
- interacting with other fish

Materials: paper, clipboard, watch or stopwatch, aquarium with fish, natural history information on fish in aquaria, fish identification guides

Introduce:

1. What do fish need to survive? (*food, shelter, temperature, space, good water quality – all of these are found within the fish's habitat. Different habitats might be necessary for the entire lifecycle of a fish – for example, larval stage may be planktonic and as an adult may live in the kelp forest.*)

2. How can we figure out how much of their time to they spend getting these different needs met? (*by doing scientific observations*)

3. What precautions should we take in doing observations so we don't bias our sample? (*make sure the fish have acclimated to the environment, don't stand too close to the tank, make repeated observations over time, same time each day, etc.*)

4. We can learn a lot about fish behavior by observing them systematically. By following a set protocol or guidelines our observations are consistent.

Gathering data

5. Briefly observe the fish and write down behaviors that you see.

- Write down the description or defining characteristics of the fish.
- Record what method of locomotion it uses, all fins, just caudal fin, etc.
- Observe how and where does it select food
- Record how it responds to other organisms in the environment.

6. Have students create a data sheet with the behaviors that they can record and expect to see. How are those behaviors identified so that all observers are using the same terms?

7. Select a fish to observe. Identify specific features that distinguish it from the other fish.

8. Identify a timekeeper to call out time every 15 seconds for five minutes. Analyze the data

9. Calculate the percentage of time spent in each of the activities.

10. Compare findings with other teams.

Extensions:

1. Did habitat features impact behavior? How can you set up an experiment to test this hypothesis?
2. Map home ranges by observing location of fish over time.

Sample data sheet

	Behavior	Tally marks (add a check for a behavior for each time interval as it is called out)
Habitat: (<i>near surface, in the rocks, in the algae, on the bottom, etc.</i>)		
Feeding behaviors: (<i>picking food from bottom, off algae, skimming on surface, etc.</i>)		
Types of locomotion observed (<i>stationary, maneuvering, fast swimming, cruising, etc.</i>)		
Type of fin movement (<i>oscillate – wing-like or oar-like for maneuvering, undulate- acceleration, propulsion</i>)		
Fins used for movement		
Interaction with other animals, algae or habitat		
Other		