

Schooling Fish

Objective:

Students will learn how schooling behaviors help fish survive.

Materials:

copies of page 13 enlarged 200% (two fish per student)
crayons or markers
scissors
popsicle sticks (one per student)
4-6 traffic cones or cardboard boxes
large playing area

Action:

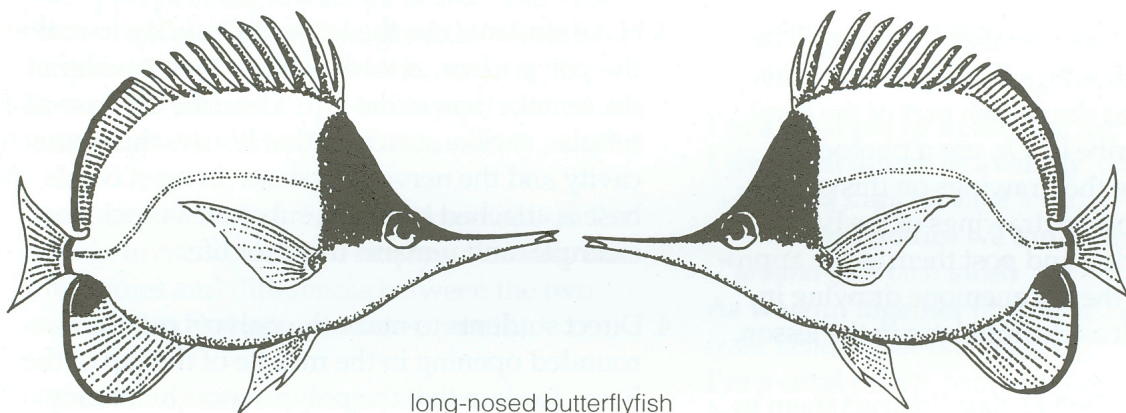
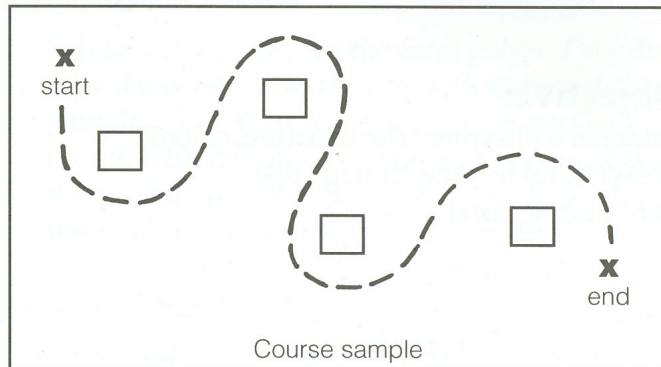
1. Cut the copied pages so that each student receives one pair of fish. Decide what color each type of fish will be. Use cones or boxes to set up "reef" on the playing area (See sample course on page 13).
2. Give each student a pair of fish to color. Show them the one color to use for each type. As students color their fish, tell them a little about each type:

long-nosed butterflyfish: This butterflyfish uses its long, slender snout like a pair of tweezers to pick food out of tiny spaces in the reef.

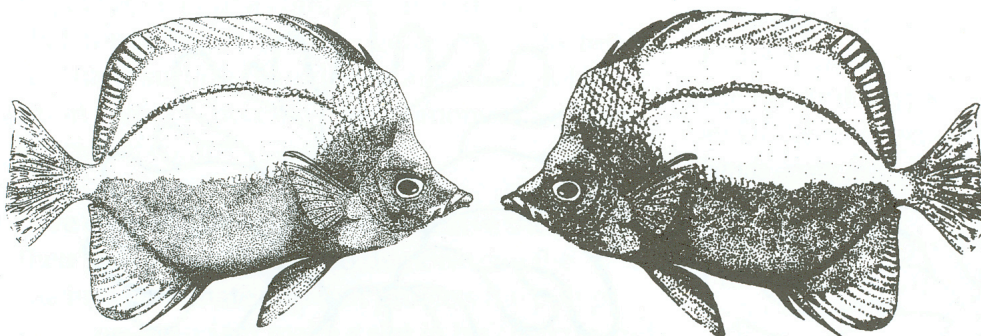
bicolored butterflyfish: Can students guess where this fish gets its name? Butterflyfish are very round in shape when you look at them from the side, but if you look at them head on, you would see they're very thin and flattened. This slender shape allows them to hide by darting into cracks and crevices of the reef.

raccoon butterflyfish: This fish receives its name from the stripe across its eye. Can students think of a way that stripe might help the fish? It camouflages the fish's eye, and might help it trick a predator. Point out the false eyespot near the fish's tail. Predators often zero in on their prey's eyes, and a false eyespot like this could cause a predator to miss this fish when it tries to grab it.
3. Have students cut out the fish when they have finished coloring them. Show students how to glue the two fish to a popsicle stick so that it looks like one fish (see sample page 13).
4. Take students outside to playing area. Ask students what a group of fish that travels together is called. (*school*) Have students hold their fish over their heads and gather in schools with others of their own kind (remind them to look carefully at the differences between the fish so they get into the right school).
5. Show students how to travel the reef you've laid out (i.e. go to the right of the first cone/box, turn left at the next one, etc.). Remind them that schools of fish swim close together, but don't touch each other, all fish in a school swim the same direction and speed, the leader is the fish at the front of the school—each time the school turns, the front fish becomes the new leader. If the school gets broken up, they should regroup as quickly as possible.
6. After the schools have gone around the reef a couple of times, have everyone stop and discuss what the experience was like. Was it difficult to stay together? What did they do to keep the school together—did they have a special sound or signal?
7. Have the schools travel the reef again. This time, the teacher or a student volunteer should act like a predator and tag the fish that aren't keeping up with the school or are in the wrong school. Remind the schools to keep together, since sick, slow, or injured fish are eaten first by predators.

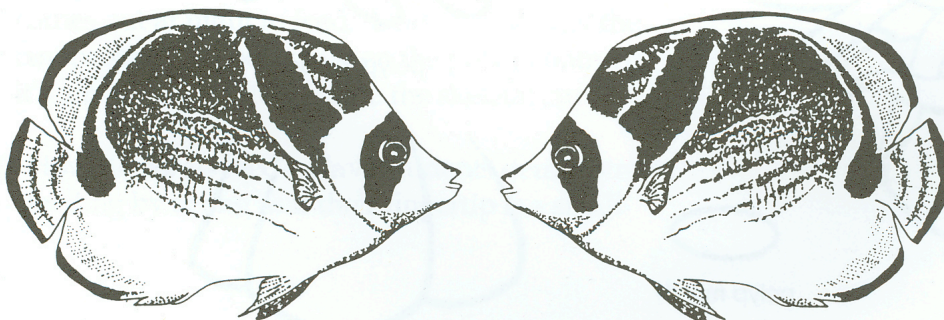
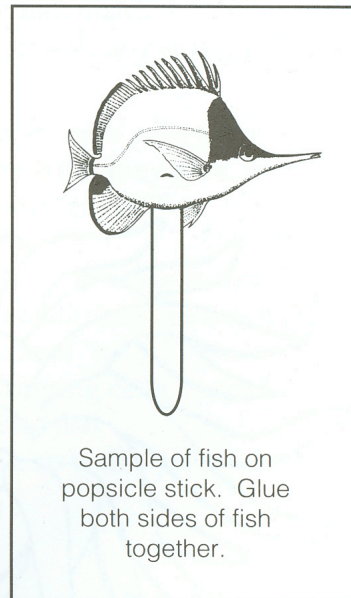
8. Ask students if it was harder to stay together with a predator chasing the school. Which students were in the safest spot, those around the edge of the school or those in the middle? Can students think of some reasons living in a school is a good survival behavior for fish?



long-nosed butterflyfish



bicolored butterflyfish



raccoon butterflyfish