



What Fishes Need

Ontario Ministry of Natural Resources, Fishways curriculum

Objectives

Participating young people and adults will:

1. Determine the difference between a need and a want.
2. List a least three basic needs shared by all animals.
3. Show how those needs are met by both people and at least one kind of fish.

Youth Development Objectives

Participating young people will:

Roles for Teen and Junior Leaders

Potential Parental Involvement

Evaluation Activities/Suggestions

Best Time: Before Go Fish, also as a follow-up to Go Fish

Best Location: indoors

Time Required: 60 to 90 minutes

Equipment/Materials

worksheets (see examples attached)
local, state or regional fish reference books
illustrations of local fish

Safety Considerations

References

Caduto, M. J., 1985, *Pond and Brook: a Guide to Nature in Freshwater Environments*, Prentice Hall, Englewood Cliffs NJ
ISBN 0-87451-509-2

Schmidt, B, 1991, *Sportfishing and Aquatic Resources Handbook*, pp 43-44, 48-55, 72-73, Kendall Hunt Publishing, Dubuque IA
ISBN 0-8403-6599-3

Schmidt, B, 1997, *Advanced*

Lesson Outline

Presentation

Application

ADVANCE PREPARATION:

- (1) Copy Worksheets 1 and 2, one copy or set for every five youth. You may copy them back to back, or separately if you feel “peeking” will short-circuit the process. Cut along the lines and put each set of needs cards in a separate envelope.
- (2) Just before the activity, place the cards from each envelope, needs side up, and close together in a well-defined space. Make sure the pictures of needs are showing.

PROCEDURE:

- (1) Having youth hold their breath. As they hold it, have them think about how they feel - what is their body telling them they need to do?
- (2) Ask, “What else does your body do to tell you what you need?” (Thirst - liquids/water; hunger - food; cold - clothing/shelter). Accept all answers. Other possibilities include loneliness - other people (especially parents) and feeling crowded - more space.
- (3) Ask if there’s anything else that they need to live. Accept all answers. Go through the list and have them eliminate things that they can live without, even though they may not want to. Have them group similar things into the smallest number of categories, and label them as basic needs.
- (4) Note that all living things have similar needs. Divide the class into groups of five or six, and put each group near its card area. Tell each youth that

their task is to discover the identity of a mystery animal by finding one (and only one) card in their area from each of three different needs (food, water and shelter/space). If you have six in a group, ask youth who can't find all three needs to join together to make a set. When they've found them, they should each make a guess as to what kind of animal it is, and write or draw that animal.

Note: The Teacher Resource Sheet provides a key, but the pictures are general enough for several interpretations. Probe for why the youth thinks an item is food, water or shelter.

- (5) Ask the youth to share their guesses about the animal. Then have them look at all the needs cards together, try to decide as a group what kind of animal it is.
- (6) Once they've decided, or have settled on two or three answers, have them turn the cards over, or distribute separate cards from Worksheet 2, and assemble the picture that is printed on the back. Have them compare the picture to the fish cards, or "Fish of PA" poster to find out exactly what kind of fish it is.
- (7) Review the needs for largemouth bass as indicated by the cards, and explain that, while other kinds of fishes have the same needs, they may meet them in different ways, e.g., with other kinds of food and shelter.

EVALUATION:

Have youth draw and explain similar human and largemouth bass needs, using Worksheet 3 or their own format. In Worksheet 3, each set of needs should be side by side, i.e., human and fish needs for food, water, shelter, space and others.

Summary Activity

Lesson Narrative

All individual animals share the same basic needs for food, water, shelter, and space. Survival of their kind also requires others of the same species. How and where animals

meet these needs, however, varies tremendously. Fishes must meet them in an aquatic environment and have developed many different ways of doing so. This activity focuses on how one species of fish, the largemouth bass, meets its needs.

Largemouth bass are found in warm, shallow waters of small lakes, shallow bays or larger lakes and occasionally in larger, slow-moving rivers.

Food: Depending on size, largemouth bass will eat plankton, other fishes, crayfish, insects and frogs.

Water Quality: Since fishes live in water, this need must be refined to include the type and quality of water each fish species can or will live in. Largemouth bass prefer warmer water (78 degree F to 82 degree F) and can tolerate quite high temperatures (above 95 degrees F). At that point, they will become inactive and rest in the shade. They avoid low oxygen levels (dissolved oxygen levels of below 1.5 mg/L) but can tolerate slightly turbid water.

Shelter: Largemouth bass lurk among stumps and both submerged and emergent vegetation, particularly water lilies and cattails.

Space: Largemouth bass need a space about 30 feet in diameter around each nest for reproduction.

Others: Spawning occurs from late spring to mid-summer in a nest among the vegetation swept clean by the male. The male will guard the eggs, protecting them from predation and fanning them to ensure enough oxygen. They will hatch in three to five days and often remain together, protected by the father, for up to a month.

In this activity, youth first clarify their own needs, and how they differ from things like music and TV, which they may want, but can survive without. Then they make a link to the needs of largemouth bass through a set of cards showing the types of food, water and shelter that they require. In small groups, youth will probably come up with “fish” as the mystery animal, and use the puzzle pieces to find out which fish. For older youth, no help may be necessary. For younger youth, the numbers on each piece run left to right in rows of four, i.e., 1,2,3,4, then 5 under 1, 6 under 7, and so on.

Exhibit or Sharing Suggestions

1. Create dioramas, other models or collage of illustrations showing fish and their habitat needs.

Community Service and “Giving Back” Activities

Extensions or Ways of Learning More

- (1) If you have an aquarium, examine how you help meet the basic needs of the fish in it:

Food: What's in it? How often are the fish fed?

Water: What's done to keep it "good"? (Aeration, filters, heater.)

Shelter: How do the fish use the rocks, plants, ornaments? Do they hide from one another? From you?

Space: Find out how many fish should be kept in your aquarium, and why. Do you have too many? Do they appear "crowded"?

Others: If you have more than one kind of fish, do fish of the same kind "stick together"? Youth could time how long they interact with (swim with, chase, etc.) their own kind and other kinds of fishes. Livebearers or nesting fishes provide an opportunity to discuss reproductive needs.

- (2) The need for space will vary by species and, at times, by what the fish is doing. You can illustrate this by having youth stand together as if to sing a song (or sing one). Then within the same amount of space, have them try to untie and retie their shoe (those without tie shoes can simulate this by trying to tie a piece of string around their ankle). Or have them try to lie down and nap in the same space.
- (3) Youth can experience some of the difficulties a male bass goes through in guarding his nest. Choose about one youth in six to be a male bass. He must guard his "eggs" (a pile of stones or other small objects) from predation by crayfish, dragonfly and diving beetle larvae, golden shiners and various sunfish (the other youth). He does this by tagging each predator, who then must drop any egg, retreat and start again. Scatter the bass at least 10 feet apart and allow the predators to circulate among them. If the bass are too efficient, require them to leave the nest periodically in order to pick up food scattered on the edges of their nesting territory (two or three food tokens per round). Discuss why largemouth bass sometimes lay up to 100,000 eggs (4,400 to 15,400 per kg of female or 2,000 to 7,500 per pound).
- (4) Have youth research the basic needs of other fishes and create their own needs game.

Links to Other Programs

People and Fish

Angling SkillsBidentify fishing hotspots