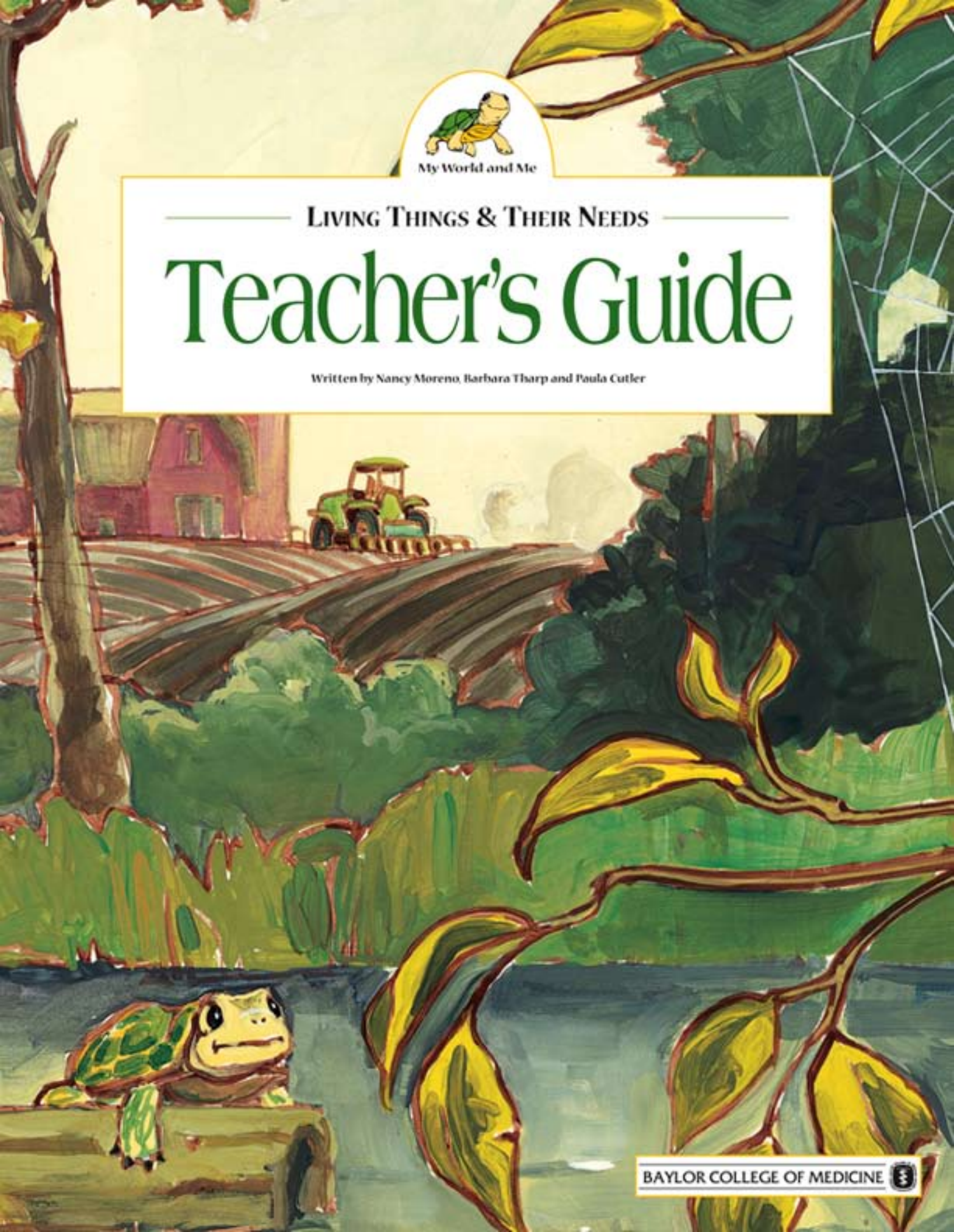


My World and Me

Living Things & Their Needs

Teacher's Guide

Written by Nancy Moreno, Barbara Tharp and Paula Cutler

BAYLOR COLLEGE OF MEDICINE

© 2003 by Baylor College of Medicine
All rights reserved.
Printed in the United States of America.

15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
ISBN: 0-000000-00-0

The mark "My World and Me" is a registered trademark of Baylor College of Medicine. No part of this book may be reproduced by any mechanical, photographic or electronic process, or in the form of an audio recording, nor may it be stored in a retrieval system, transmitted, or otherwise copied for public or private use without prior written permission of the publisher. Black-line masters reproduced for classroom use are excepted.

The activities described in this book are intended for school-age children under direct supervision of adults. The authors, Baylor College of Medicine and the publisher cannot be responsible for any accidents or injuries that may result from conduct of the activities, from not specifically following directions, or from ignoring cautions contained in the text.

Development of My World and Me® educational materials was supported, in part, by the National Institutes of Health, National Center for Research Resources, grant number RR25 RR13454, and National Institute of Environmental Health Sciences, grant number R25 ES10698. The opinions, findings and conclusions expressed in this publication are solely those of the authors and do not necessarily reflect the views of Baylor College of Medicine, the sponsoring agencies or the publisher.

Editors: James P. Denk and Martha S. Young
Design: Martha S. Young
Illustrations: T Lewis and Martha S. Young

The My World and Me project at Baylor College of Medicine has benefited from the vision and knowledge of scientists and educators from a wide range of specialties. Our heartfelt appreciation goes to William A. Thomson, Ph.D., Professor of Family and Community Medicine and Director, Center for Educational Outreach, who has lent his support and expertise to the project.

Special acknowledgment is due to our partner in this project, the American Physiological Society (APS). We especially thank Marsha Lakes Matyas, Ph.D., and Katie Frampton of APS, for their invaluable reviews of draft materials and direction of field tests, focus groups, and dissemination activities in the Washington, DC area.

Special thanks go to the National Center for Research Resources of the National Institutes of Health (NIH) for its support of the My World and Me Project, and to the National Institute of Environmental Health Sciences, NIH, for its support of classroom implementation of My World and Me materials in the Houston area.

We are grateful to the many classroom teachers in Washington, D.C., and Houston, Texas, who participated in the field tests of these materials and provided invaluable feedback. We especially thank Rachel J. Cunningham, Wanda J. de Vries and Nannette M. Schultz at Whidby Elementary School in Houston for their contributions and suggestions.

Carolina Biological Supply Company is the exclusively licensed publisher and distributor of the My World and Me materials.

BCM
Baylor College *of* Medicine

Plant or Animal?

Students will explore two major kinds of living things, plants and animals, and compare their needs.

CONCEPTS

- Plants and animals are kinds of living things.
- Animals and plants have some needs that are similar and some that are different.
- Animals need air, water and food, while plants need air, water, nutrients and light.
- Some plants are alike in appearance and in the things they do, while others are very different from one another. This also is true for animals.

SKILLS

Science: Observing, sorting and classifying, comparing, contrasting, communicating, generalizing, charting
Language Arts: Listening, communicating, understanding word meanings, developing comprehension skills, writing, using descriptive language, following directions

TIME

Class: 45 minutes

MATERIALS

- 2 sets of Tillena Lou's World cards (12 cards per set, see SETUP)

Per student

- paper plate, 8 in. (prepared, see SETUP)
- craft stick, wood
- crayons or colored pencils
- glue
- copy of My Science Journal student sheet

At this point in the unit, students have observed and learned about a plant and an animal. This activity provides them with opportunities to test their assumptions about plants and animals, and to learn about plant and animal diversity. If students can explore outdoors, they might be able to observe the following kinds of animals and plants.

Animals without backbones

- Mollusks (snails, slugs, clams) - soft moist body, uses a large muscular "foot" to move.
- Crustaceans (crayfish, pill bugs, sow bugs) - hard outer covering (exoskeleton), jointed bodies and legs.
- Insects (ants, bees, wasps, flies, butterflies, beetles, mosquitoes) - body made of three segments, one pair of antennae, often with one or two pairs of wings, six jointed legs.
- Spiders and their relatives (ticks, mites, daddy longlegs) - body of two segments, no antennae, four pairs of legs.

Animals with backbones

- Amphibians (frogs, toads) - soft moist outer skin, four legs.
- Reptiles (lizards, turtles, snakes) - dry, scaled skin, four or no legs.
- Fish - scaled skin, no legs, has fins and gills, lives in water.
- Birds - feathers, beak as a mouth, two wings, two legs.
- Mammals (squirrels, cats, dogs, horses, cows, hamsters, people) - body hair, four legs or two legs and two arms.

Non-Flowering Plants

- Mosses - low-growing green plants in damp places and on trees, leaves very small. Mosses do not produce flowers or true seeds.
- Ferns - long-branched leaves that start at the base of the plant, leaf divisions arranged like the teeth of a comb. Ferns do not produce flowers or true seeds.
- Pines and their relatives (pines, cedars, fir) - trees and shrubs with needle-like or scale-like, evergreen leaves. These trees and shrubs produce cones instead of flowers.

Flowering plants

- Monocots (grasses, lilies, irises, palms, onions) - parallel veins in leaves, flower parts in multiples of three, leaves often originating at base of plant, one seed leaf (cotyledon).
- Dicots (oaks, maples, elms, willows, petunias, clover, dandelions) - veins in leaves arranged like a fan or branching from a central vein, flower parts very numerous or in multiples of four and five, leaves often distributed along a stem, two seed leaves (cotyledons).

©2003, Baylor College of Medicine

SETUP

You will need a copy of the book, *Tillena Lou's Day in the Sun*, to read to students as part of this activity.

As an alternative to the character cards provided in the kit, copy the student sheet (p. 21) on card stock, then cut out each card. Each student should receive one card.

Each student also will need a paper plate. Cut a short slit in the center of each plate. The slit should be wide enough to allow a craft stick to slip through and stand vertically (see illustration below).

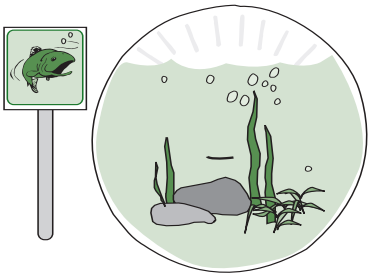
Create a two-column chart to be filled out during class. One column will list ways in which plants and animals are alike and the other will list ways in which they are different.

Introduce this activity to the entire class. Students will build individual puppets in Part 1 and will solve riddles in teams in Part 2.

PROCEDURE

Part 1. Plant or animal?

1. As a whole group, reread *Tillena Lou's Day in the Sun*. Call attention to the different animals and plants in the story, and to their needs. Following the reading, assess student understanding by asking questions such as, *Who needs water?* (all plants and animals in the story), *Who needs food, air, soil, sun* (etc.)? *Who swims? Who hops? Who plants seeds? What do bees gather?* Guide students toward noticing differences between plants and animals. Emphasize the characteristics that make each living thing special (e.g., *Do all animals wear clothing? Does every living thing eat corn?*).
2. Explain to students that they each will receive a picture of an animal or a plant from the story to make into a puppet. Distribute one card and other materials to each student. Have each student color his or her card, then glue the card to one end of his or her craft stick. While students are working, ask each to recall the role his or her animal or plant (or "puppet") played in the story.



3. Give each student a paper plate. Have students flip the paper plates over (convex side) to make color drawings of the their puppets' habitats (animal or plant)—where the organisms live, their food sources, etc.

EXTENSION

Take the students on a mini-field trip, either within the school building or around the schoolyard, giving them time to observe, write and draw. You may want to stop at certain points to let them sit and observe. Help them find examples of different living organisms by asking questions. Have them note parts like leaves, flowers, backbones, legs, etc. Call attention to how the organisms move, where they are, what they are doing.

Upon returning to the classroom, ask students what living organisms they saw. Use these observations to prompt a discussion about types of living things and their needs.

WHAT IS A HABITAT?

The kind of place where a given organism normally lives is called its habitat. "Habitat" is different from "home," because habitat refers to the setting in which a kind of organism lives. Living things obtain everything they need to grow, survive and reproduce from their habitats.

©2003, Baylor College of Medicine

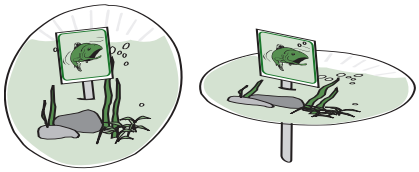
CHARACTERISTICS OF PLANTS

- Nonmoving (from place to place)
- Have green parts (which are responsible for trapping sunlight)
- Use sunlight to make food (photosynthesis—it's a good idea to expose children to accurate terms)
- Produce seeds (usually)
- Have roots, stems and leaves, and often produce flowers or cones, fruits and seeds
- Need water, sunlight, nutrients from soil, and air
- Rely on animals, wind and water for the transport of plant pollen and seeds

CHARACTERISTICS OF ANIMALS

- Capable of willful movement (from place to place)
- Usually don't have green parts (and if they do, the green parts do not trap energy from the sun)
- Produce live young or eggs, but not seeds
- Must use other living things or parts of living things as food
- Have body parts (mouths, etc.) that help them eat
- Need water, food and air to survive

4. When the drawings are complete, have students insert the puppet craft sticks through the slits in the plate. Students should hold the stick/puppet vertically so that it "stands" erect. They may tilt the plate/habitat or hold it in a horizontal position (see illustrations to the right).



5. Ask each student to share his/her puppet's habitat with the rest of the class. You may have students display their habitats in different parts of the room.
6. Create a two-column class chart listing how plants and animals are alike and different. (For the benefit of those students who do not read yet, you may want to decorate the chart with pictures of plants and animals that you have drawn, or with pictures cut from newspapers and magazines.) Invite students to volunteer information to complete each half of the chart.

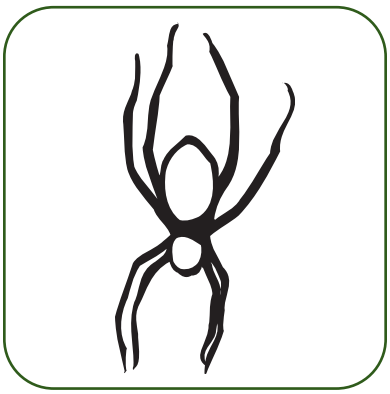
   Note. After this activity, students should be able to identify some or all of the characteristics typical of plants and animals, as shown in the sidebar to the left.

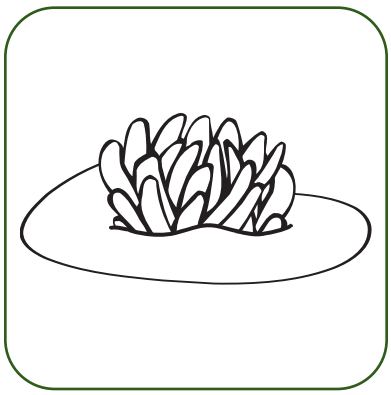
Part 2. Silly scenario

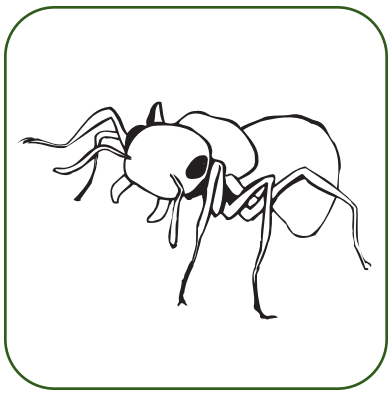
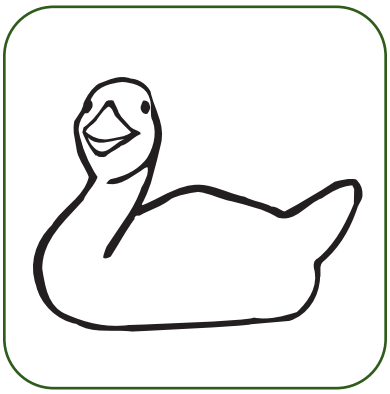
1. To assess students' understanding of how animals and plants are alike and different, ask silly scenario questions based on characters in the My World and Me story book. (You may want to dramatize the concepts with the students playing roles.) The following are just a few examples.
   - Can a water lily climb onto the log with Tillena Lou?
   - Does Tee have leaves?
   - Does the deer produce her own food through photosynthesis?
   - Can Tillena Lou fly to the bird's nest?
   - Do Taffy, Tee and Tillena go to a farm to grow their own food?
   - Can a bee swim underwater?
   - Can lizards live on the surface of water?
   - Can the cattails eat a hamburger?
   - Does a duck drink its water from a glass?
   - Do spiders produce seeds?
2. After students have responded to the questions, discuss how the organisms in question actually behave.
3. Divide students into groups and have each group come up with its own silly scenario to share with the rest of the class or to dramatize using its puppets. OR have students create a class book with their scenarios.

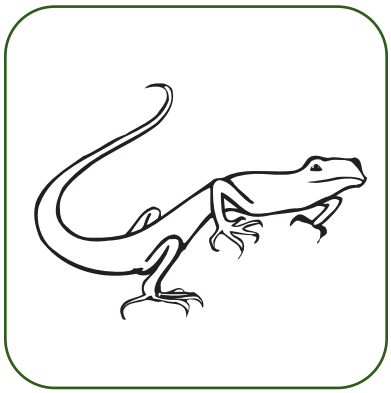
©2003, Baylor College of Medicine

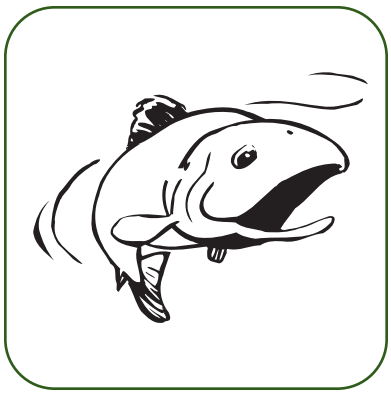
Tillena Lou's World









©2003, Baylor College of Medicine