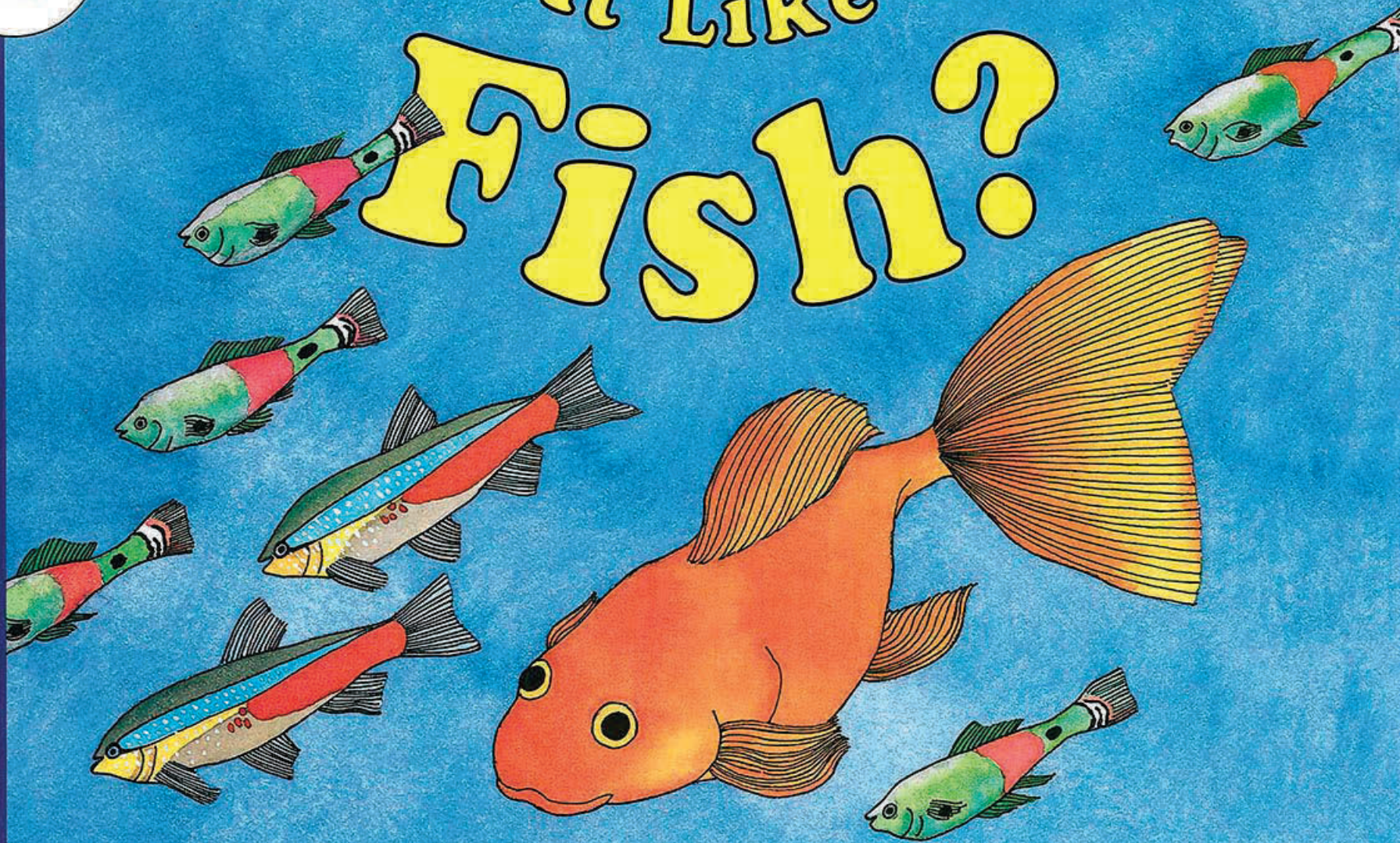


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STAGE

# What's It Like to Be a Fish?



by Wendy Pfeffer

illustrated by Holly Keller

LET'S-READ-AND-FIND-OUT SCIENCE®

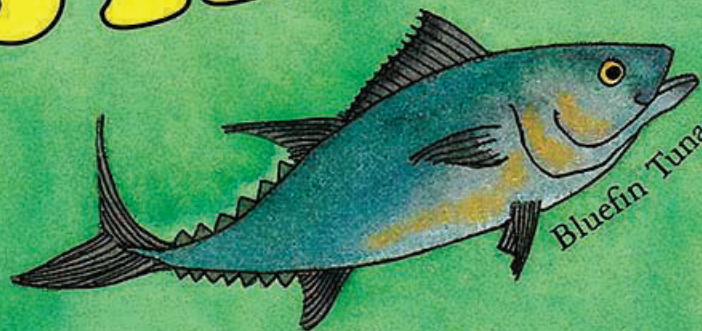
LET'S-READ-AND-FIND-OUT SCIENCE®



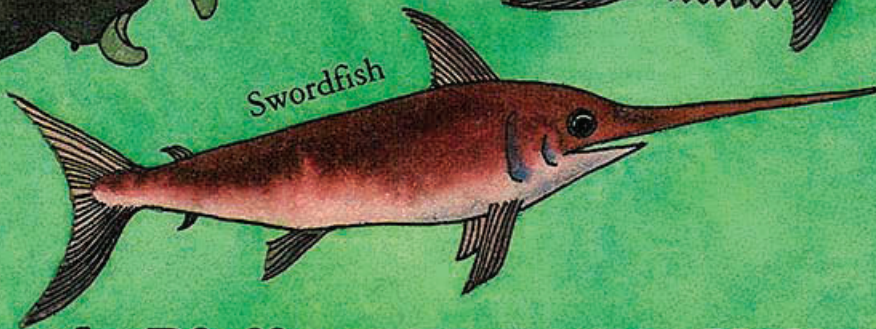
What's It Like to Be a  
**Fish?**



Manta Ray



Bluefin Tuna



Swordfish

by **Wendy Pfeffer** illustrated by **Holly Keller**

HarperCollins Publishers

*For Tom* — W. P.  
*For Suzanne* — H. K.

With sincere thanks to Nancy Siscoe, for her expert guidance; Valerie Chase from the National Aquarium in Baltimore, and Raymond Klinger and Ernest Tresselt at Huntington Creek fisheries, all of whom checked this manuscript for accuracy; Renee Cho, the Wednesday Workshoppers, and my family for their support.  
—W.P.

The illustrations in this book were created with pen and ink, watercolors, and pastels on Rives BFK paper.

Note: The fish pictured on the jacket are a Common Goldfish, Guppies, and Neon Tetras.

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The *Let's-Read-and-Find-Out Science* series was originated by Dr. Franklyn M. Branley, Astronomer Emeritus and former Chairman of the American Museum-Hayden Planetarium, and was formerly co-edited by him and Dr. Roma Gans, Professor Emeritus of Childhood Education, Teachers College, Columbia University. Text and illustrations for each of the books in the series are checked for accuracy by an expert in the relevant field. For a complete catalog of *Let's-Read-and-Find-Out Science* books, write to HarperCollins Children's Books, 10 East 53rd Street, New York, NY 10022.

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What's It Like to Be a  
**Fish?**

Calico Goldfish

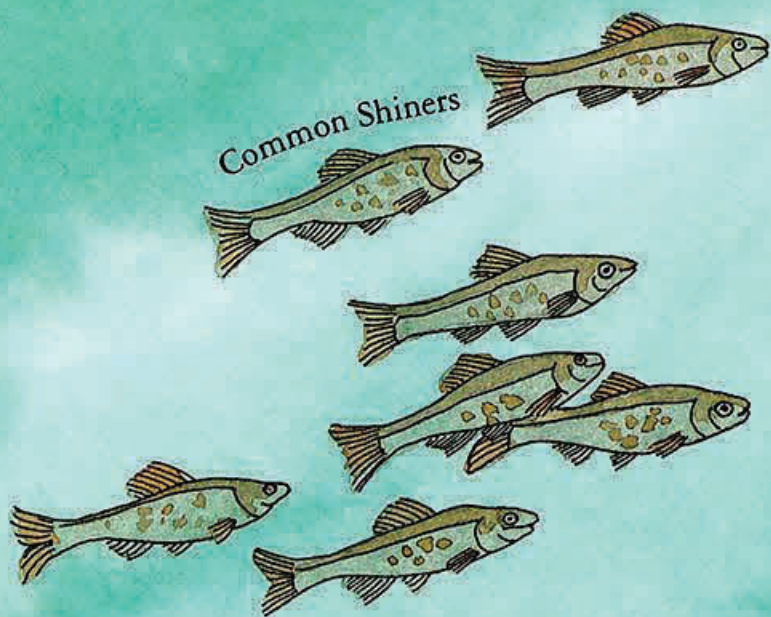


Veiltail Goldfish

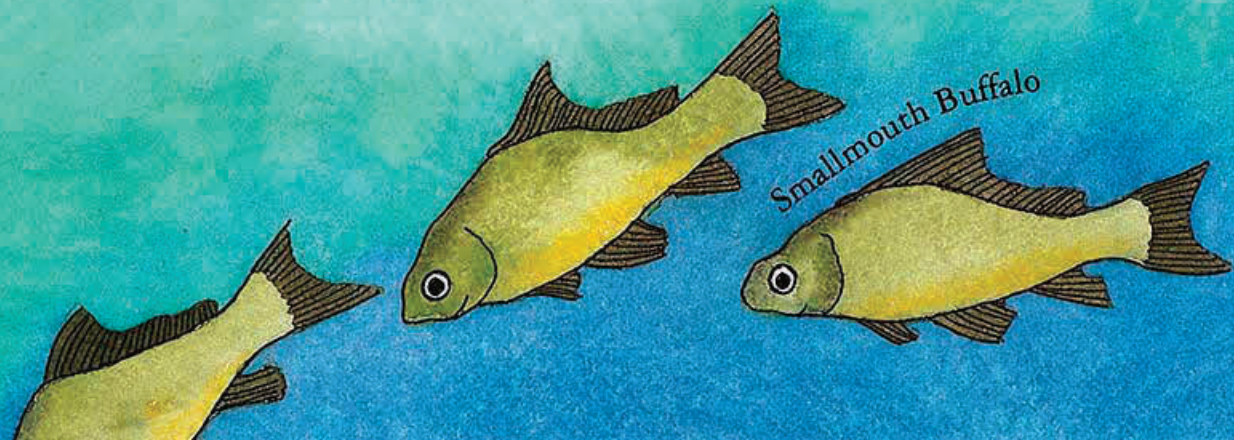




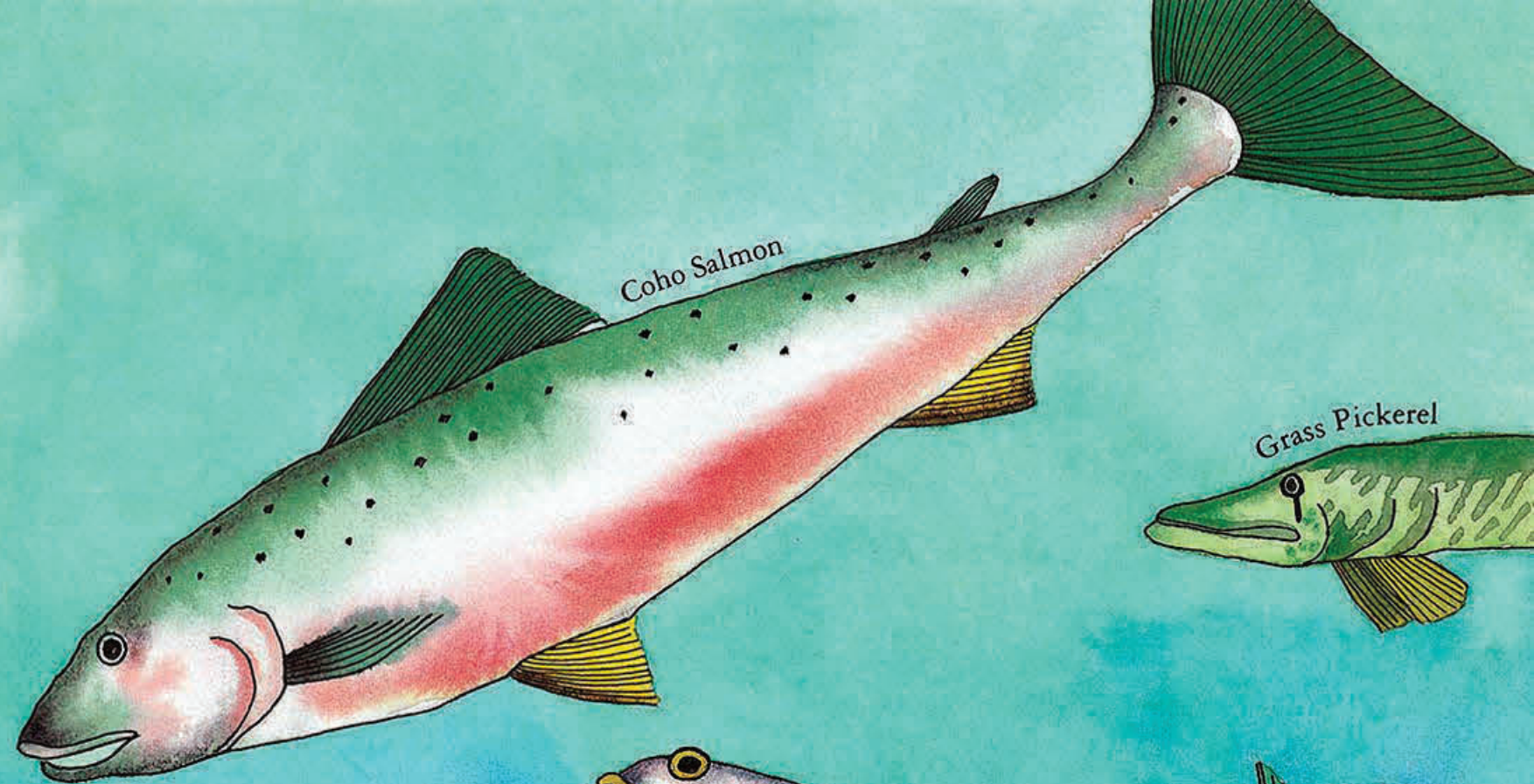
Lake Whitefish



Common Shiners



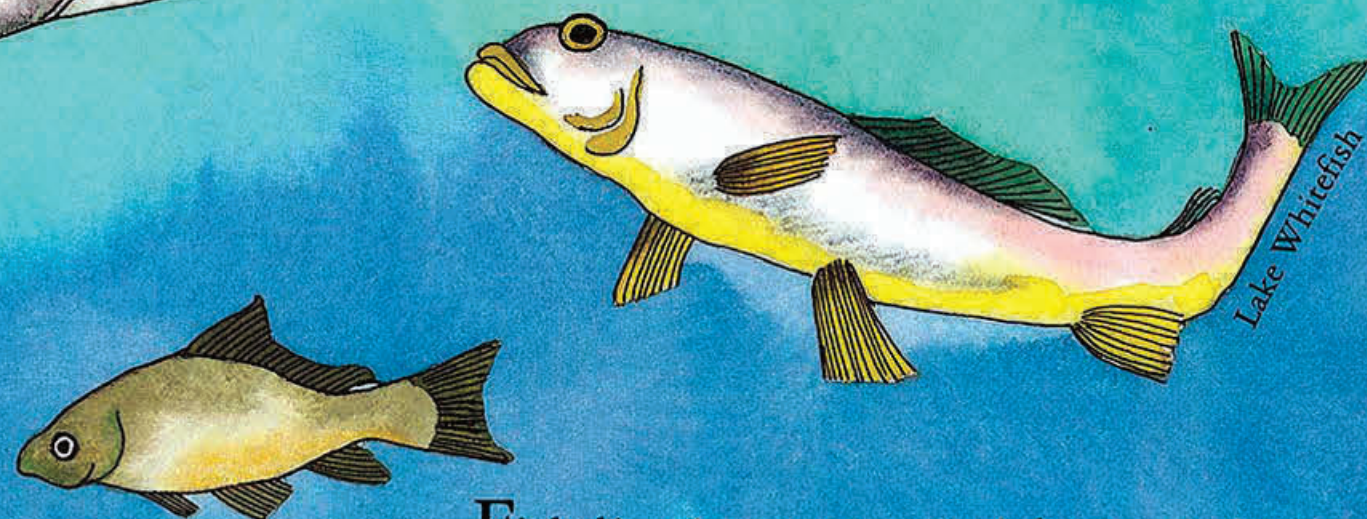
Smallmouth Buffalo



Coho Salmon



Grass Pickerel



Lake Whitefish

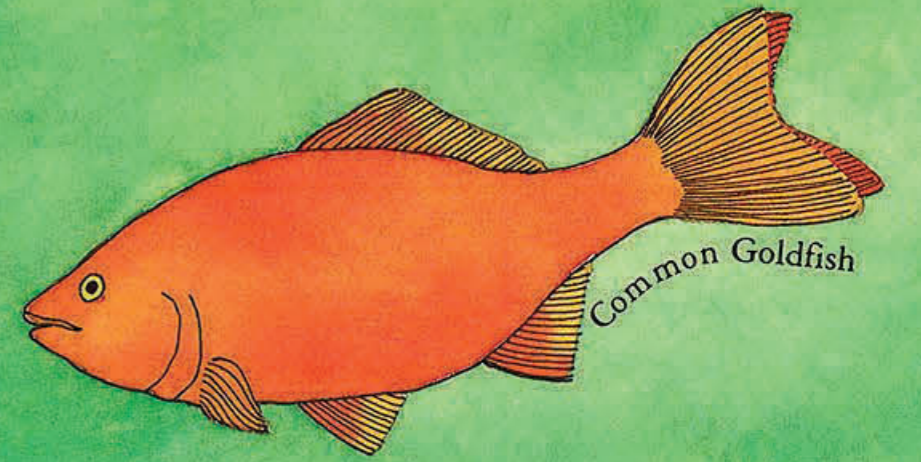
Fish live in water—in lakes, ponds,



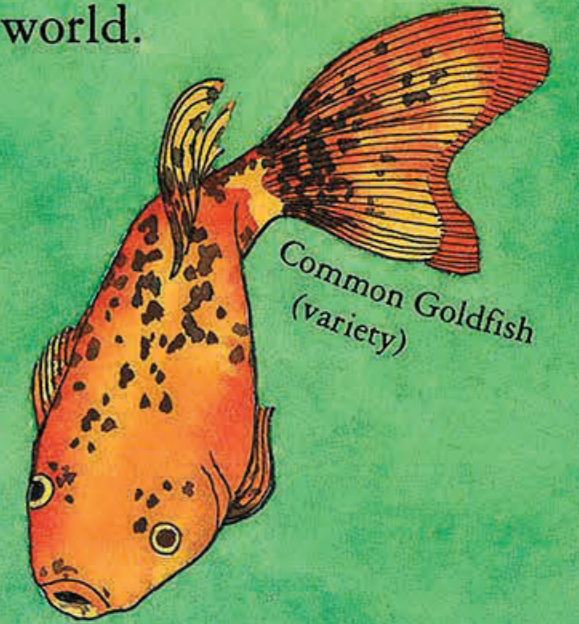
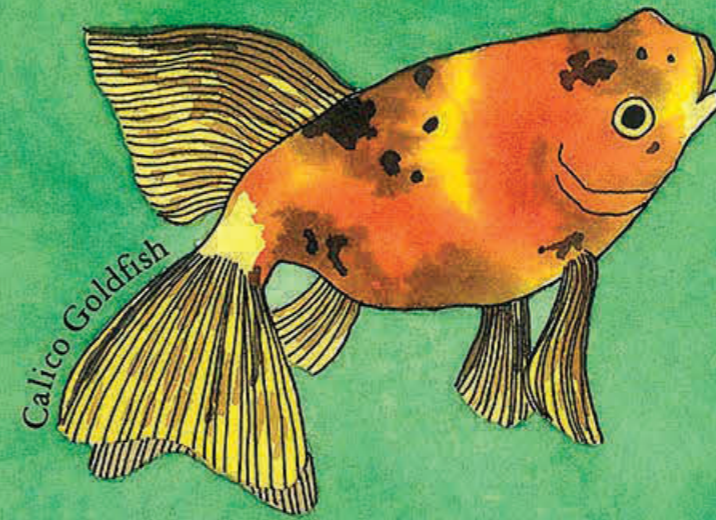
aquariums,



and even plastic bags.



Your pet goldfish can live in a bowl. You can watch the golden fish slip over and under the castle, hide among the water plants, and glide quietly around in their underwater world.

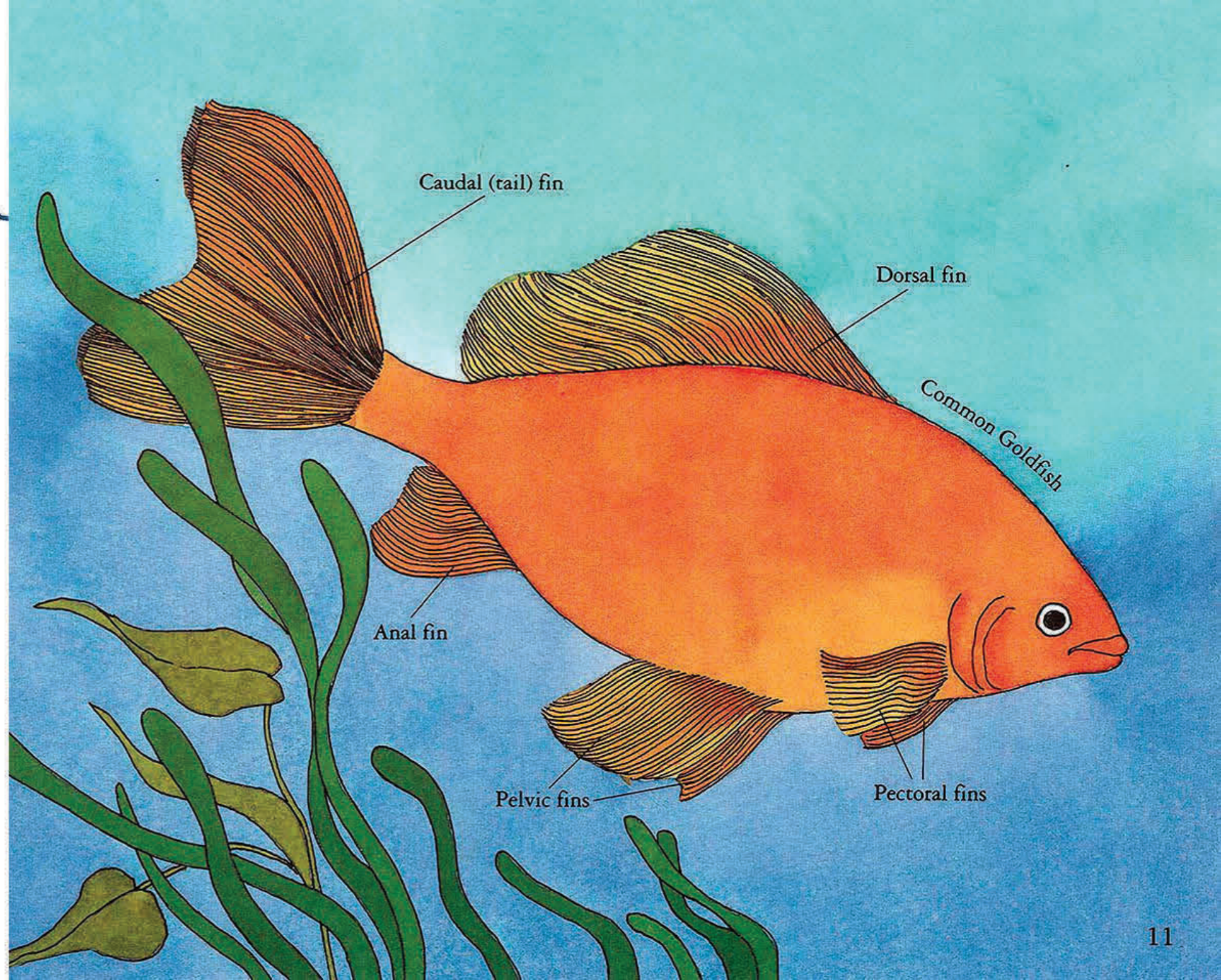






A fish's body is just right for living underwater, just as your body is right for living on land.

You can swim, but a fish can swim better! A fish's sleek body is the perfect shape for swimming. Fins stick out from the fish's body. They help the fish to swim. A goldfish's tail fin pushes it through the water. Six other fins steady, steer, or stop it.



Most fish have skin that is covered with scales. Scales help fish to swim too. The scales are hard and clear. They overlap like shingles on a roof. The smooth, slick scales let fish slide easily through the water.

A clear slime covers the scales. It helps fish glide through the water too.

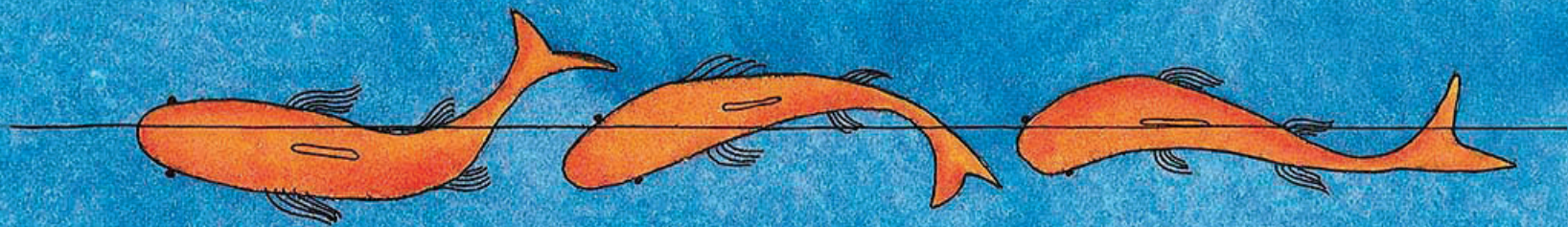
Scales and slime also help to keep a fish healthy. The stiff scales protect a fish's delicate skin from cuts and scrapes. Many germs in the water get stuck in a fish's slime coating and are washed away before they can make the fish sick. Both scales and slime keep water from seeping into the fish's skin.



scales covered with slime

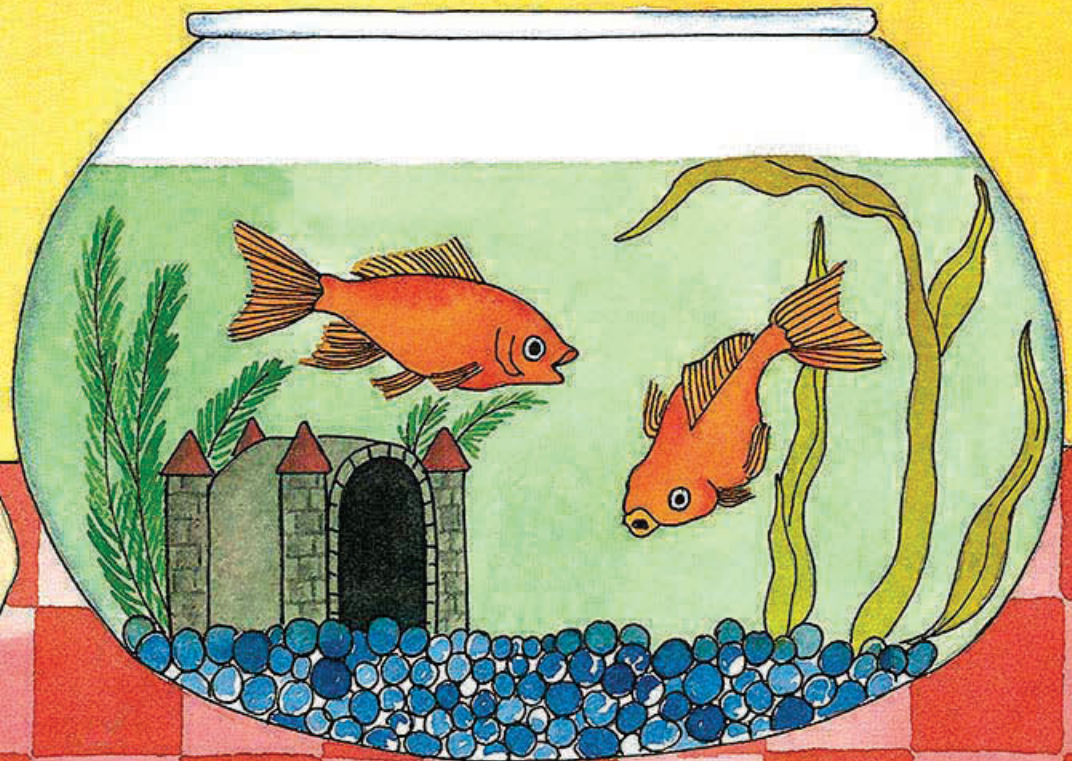
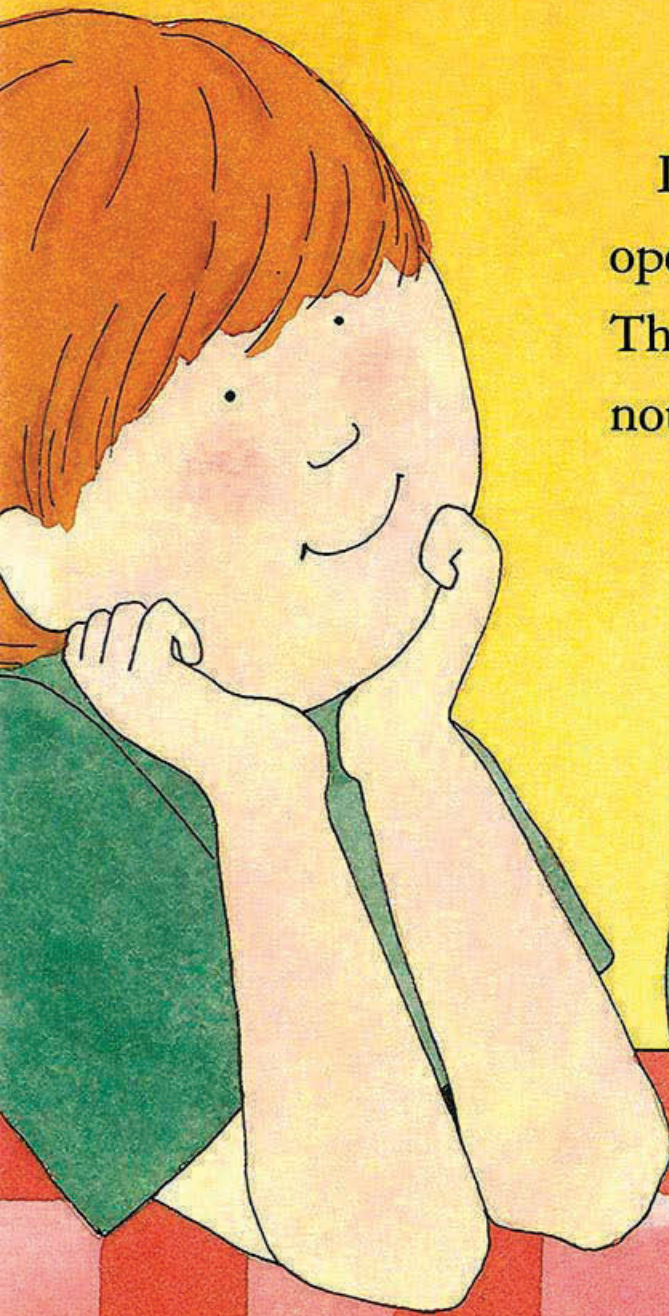
Common Shiner

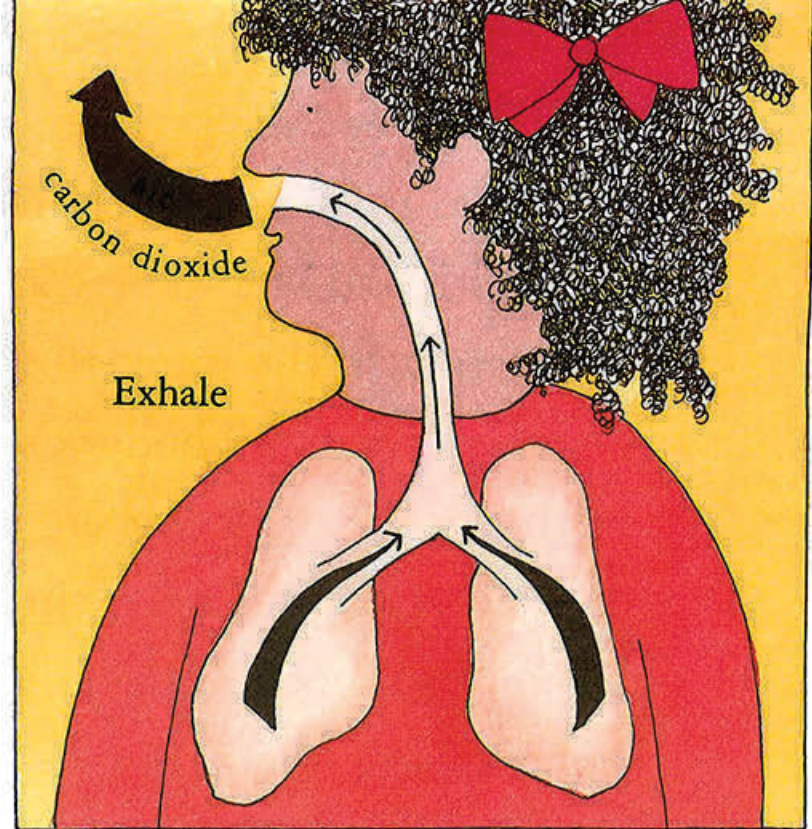
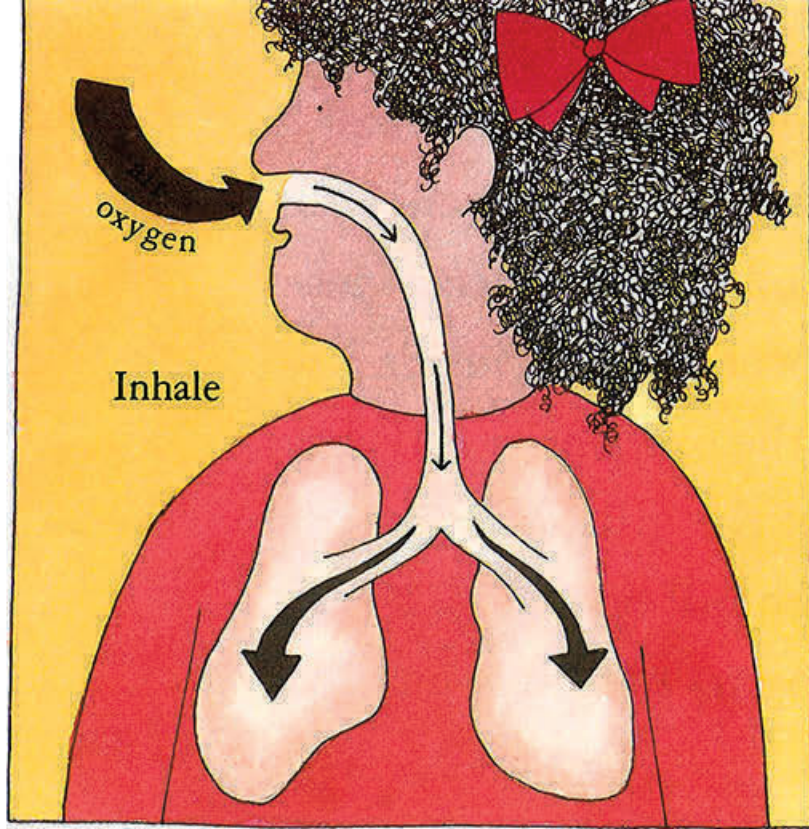
When fish swim, they swing their tail fins back and forth and wave their other fins. They look as though they're flying through the water.





If you watch your goldfish, you'll see that they open and close their mouths. All day and all night. They look as if they're drinking water. But they're not. They're breathing.

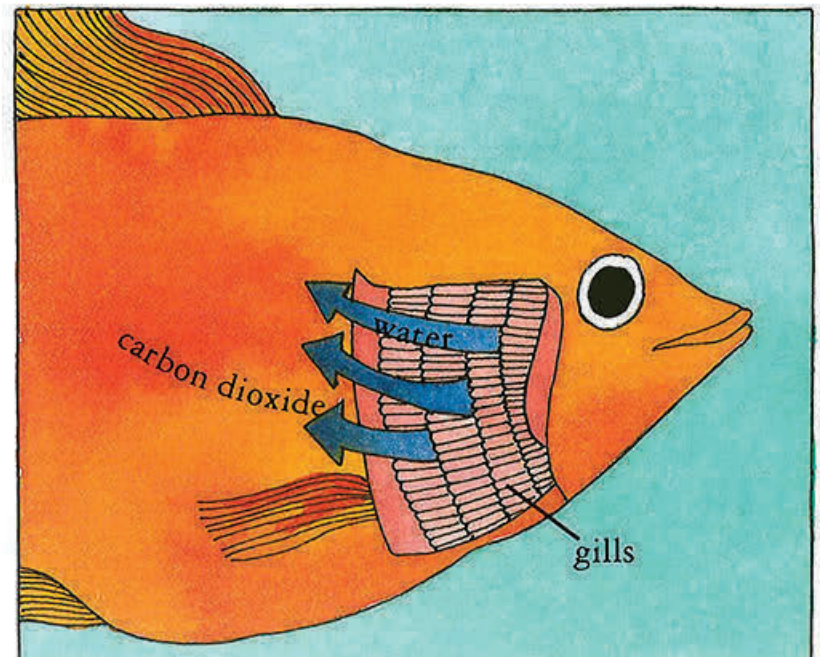
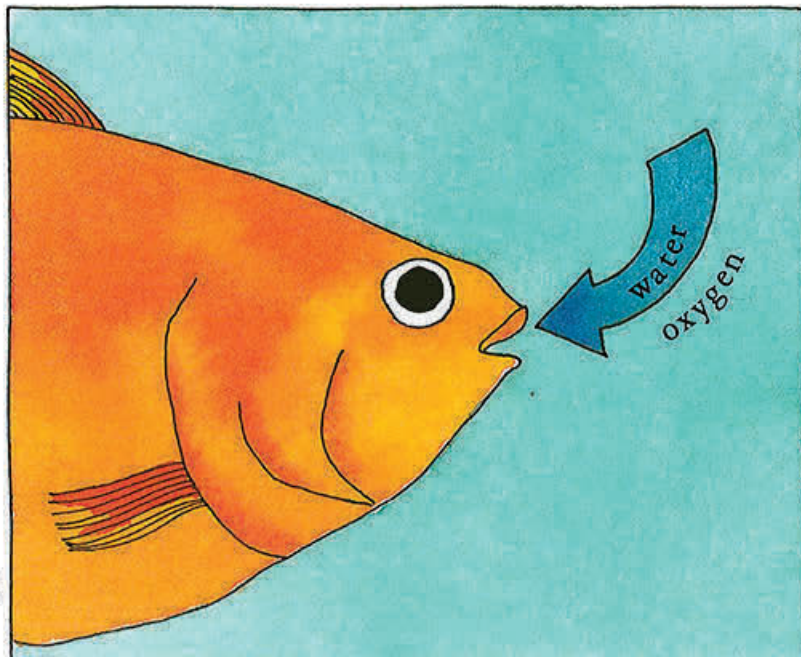


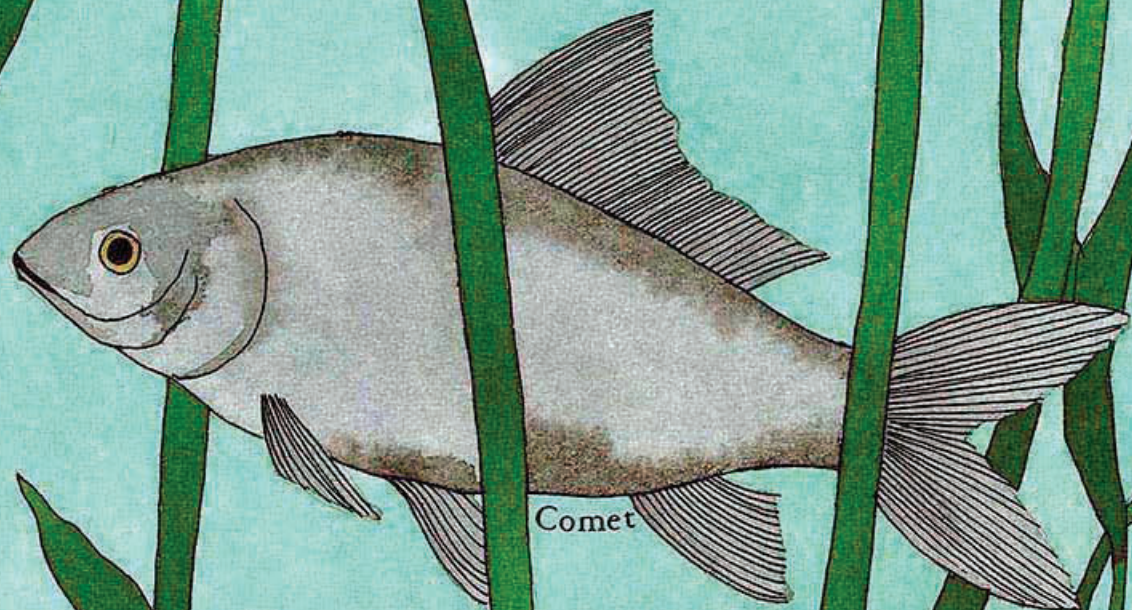


You breathe all day and all night, too, but you can't breathe underwater the way fish do. Fish breathe with their gills. You breathe with your lungs.

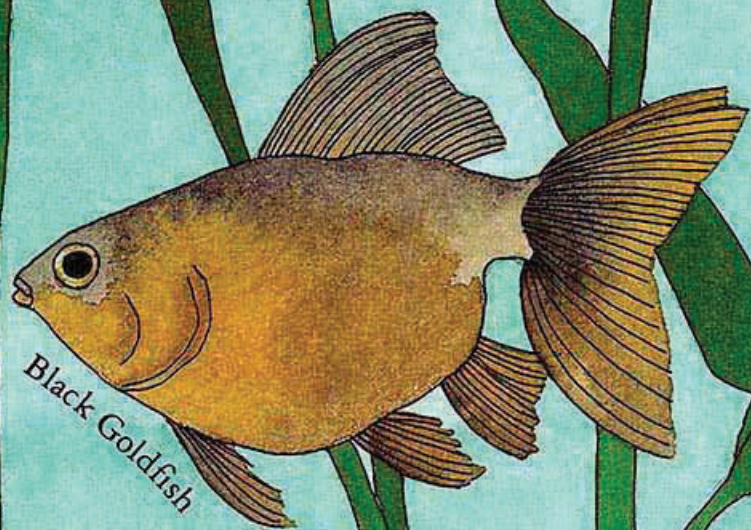
You breathe in. Air goes to lungs inside your body. Your body takes the oxygen that you need from the air. Then you breathe out the parts of the air that you don't need.

Fish need oxygen too. There is oxygen in water, just as there is oxygen in air. A goldfish opens its mouth and lets some water in. When the fish closes its mouth, the water flows over the gills inside its body. The fish's body takes the oxygen it needs from the water. After passing over the gills, the water leaves the fish's body through gill openings. For a goldfish, opening and closing its mouth is just like breathing in and out.

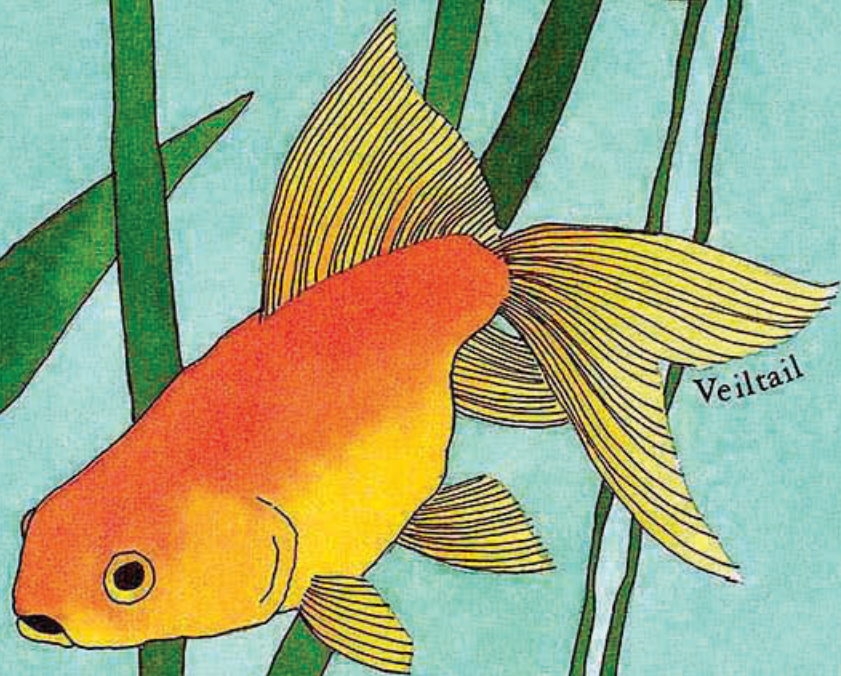




Comet

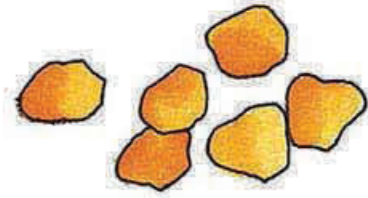


Black Goldfish

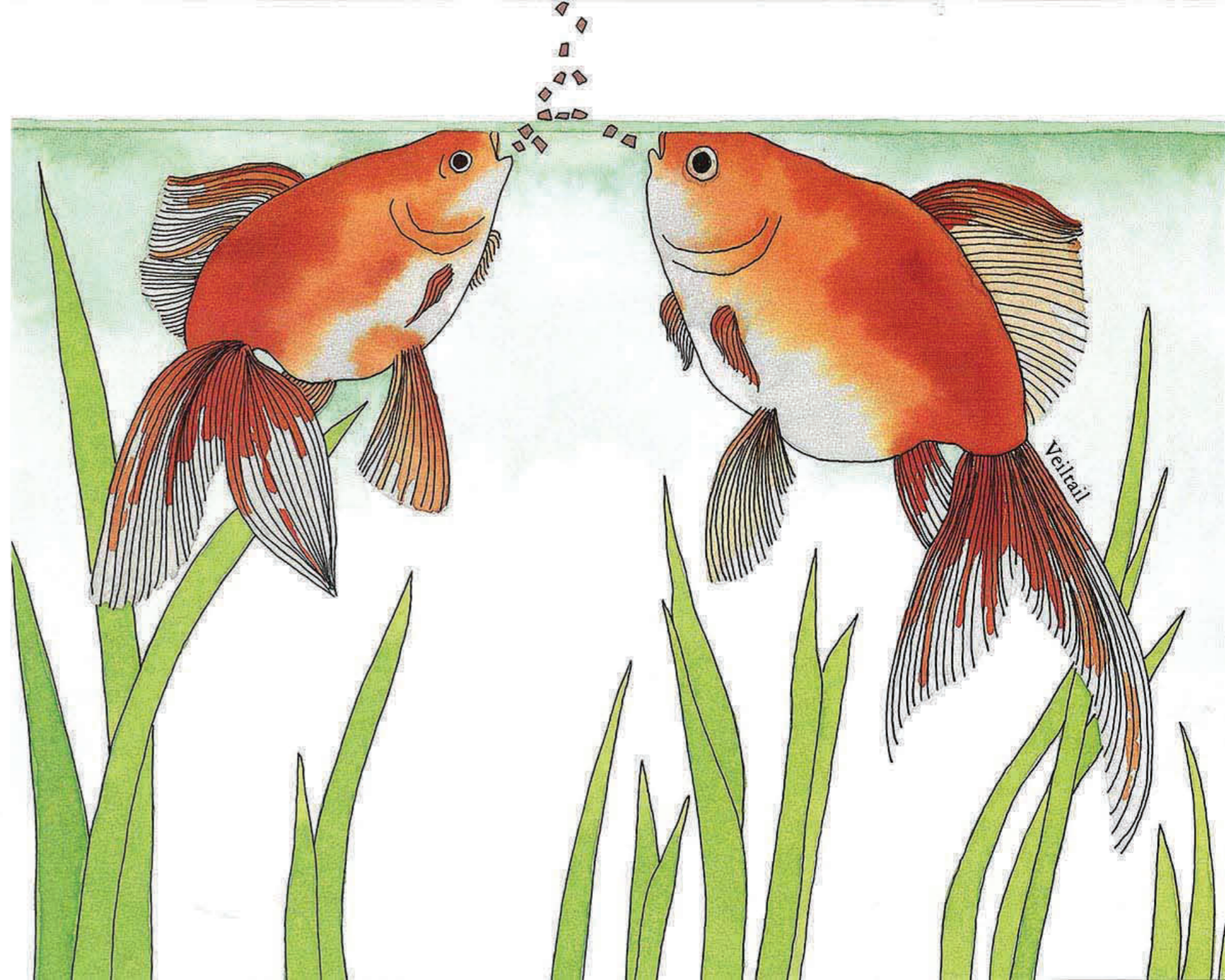
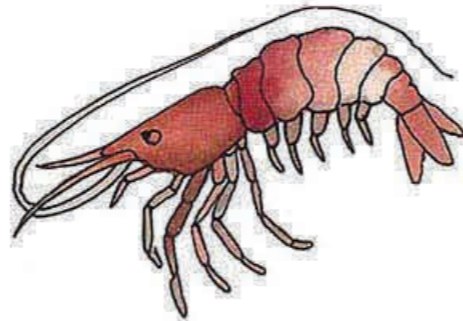
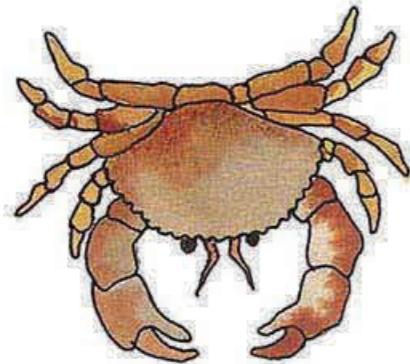
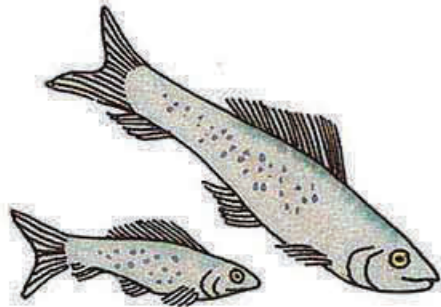
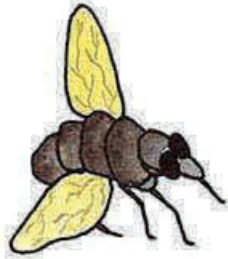


Veiltail



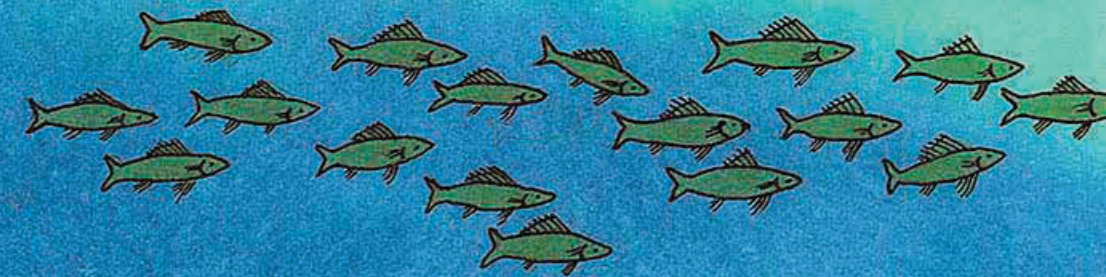


Fish need food just as you do, but they eat underwater. At feeding time, watch your goldfish flip their tails. They race to the top of the bowl, snap at their food, and gulp it down. They need only a tiny pinch of fish flakes each day. Good fish flakes are a mixture of ground-up flies, fish, shrimp, crab, oats, corn, carrots, and vitamins.

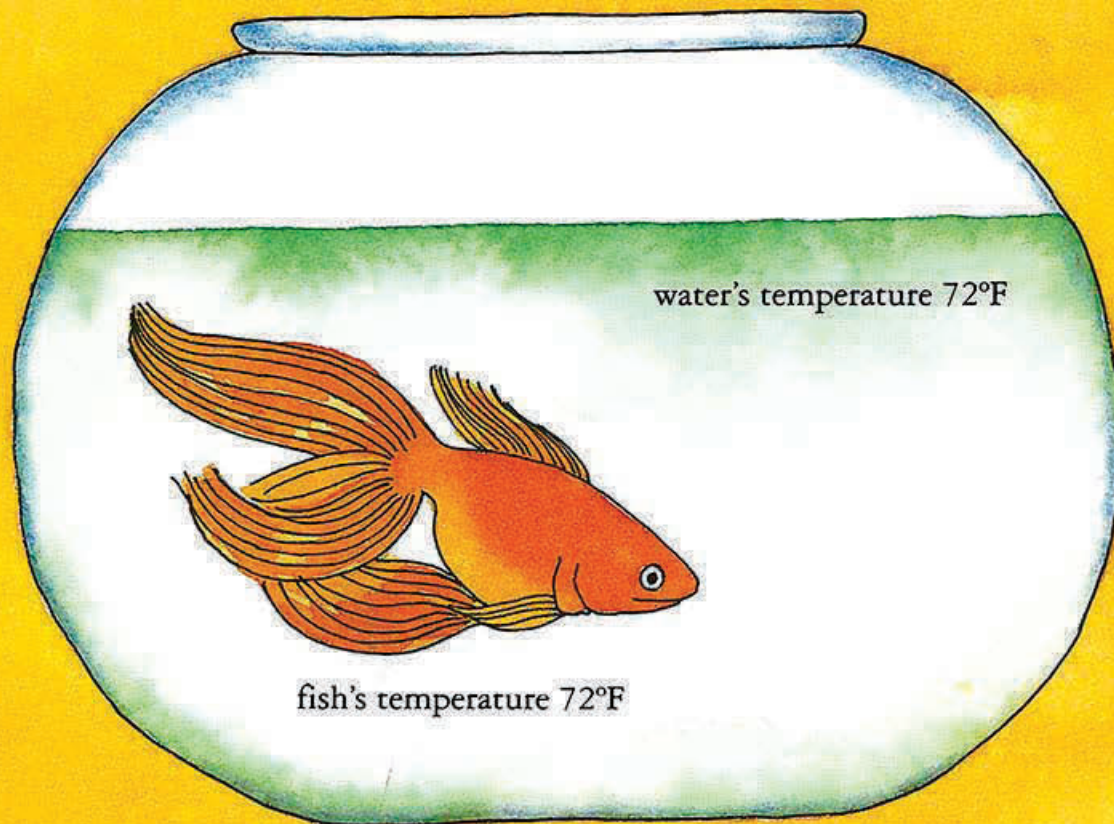




Fish in the wild do not have someone to feed them every day. Many fish eat tiny plants and animals so small that you need a microscope to see them. Bigger fish feed on worms, crabs, shrimp, and other fish. Usually, big fish eat medium-sized fish, and medium-sized fish eat small fish. This is part of what we call the food chain.



Fish are cold-blooded. This means that their body temperature matches the temperature of the water around them. Be sure to place your goldfish bowl in a spot where the temperature will stay a steady 65 to 72 degrees Fahrenheit. This is the temperature fish need to be to stay healthy.



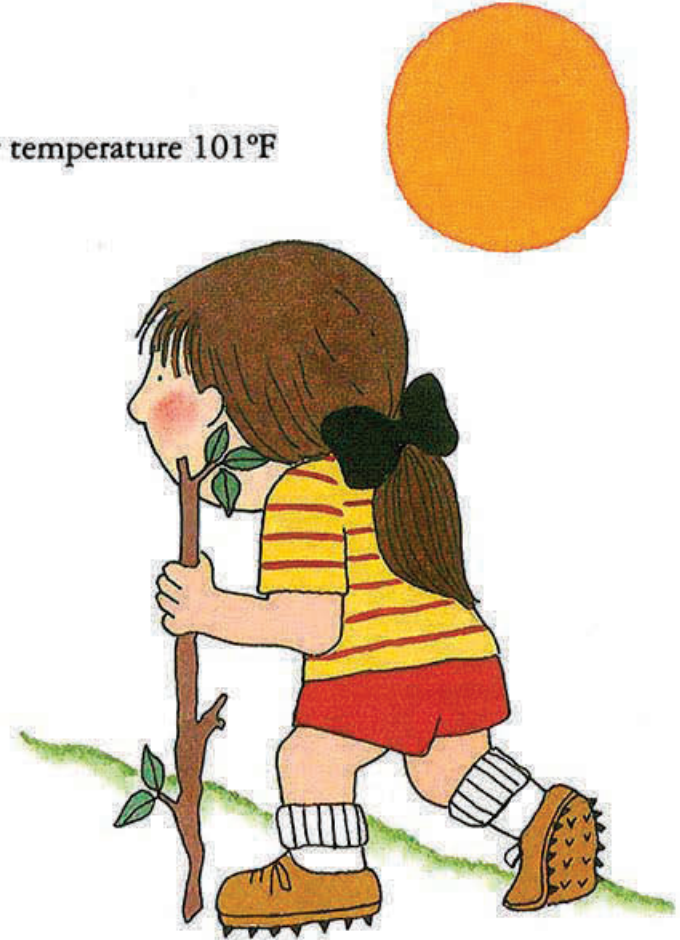
You are warm-blooded. When you are healthy, your body temperature is about 98.6 degrees Fahrenheit. Your body stays this temperature by itself, whether the air around you is hot or cold.

air temperature 28°F



your temperature 98.6°F

air temperature 101°F

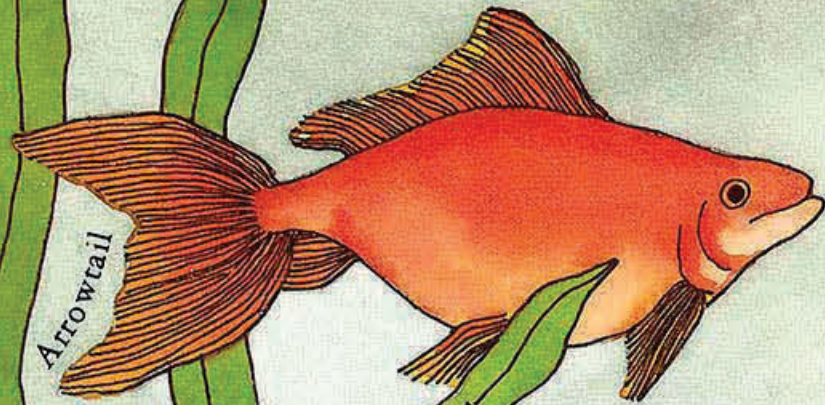


your temperature 98.6°F

Sometimes goldfish swish their tails and zip around the bowl. Other times they look as if they've stopped moving, but they haven't. Their fins are always moving . . . even when they rest. Fish don't sleep as you do. They rest by moving very, very slowly.

Fishes' eyes are always open—they have no eyelids. So their eyes stay open even when they rest. Fish

don't need eyelids, as you do, and they don't need tears, either. The water keeps their eyes washed. There is usually not enough light under water to bother fishes' eyes. Be sure not to put your goldfish in the sun, because it might be too bright for them.



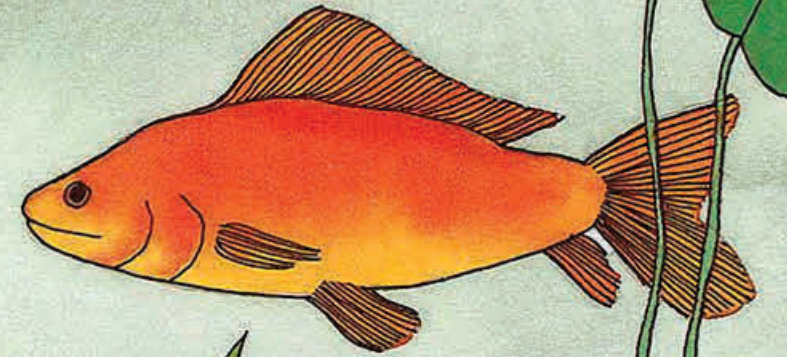
Arrowtail



Calico

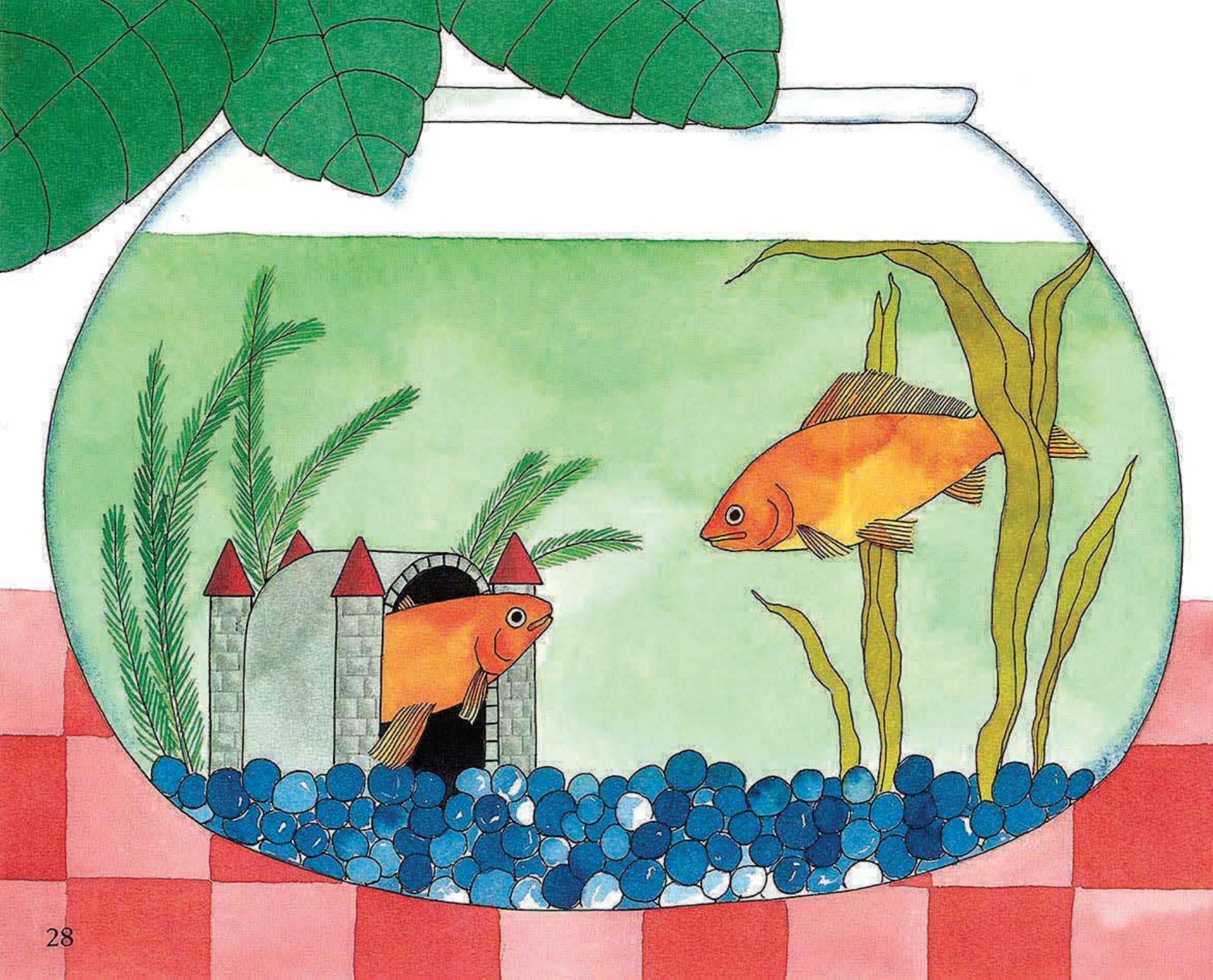


Common Goldfish



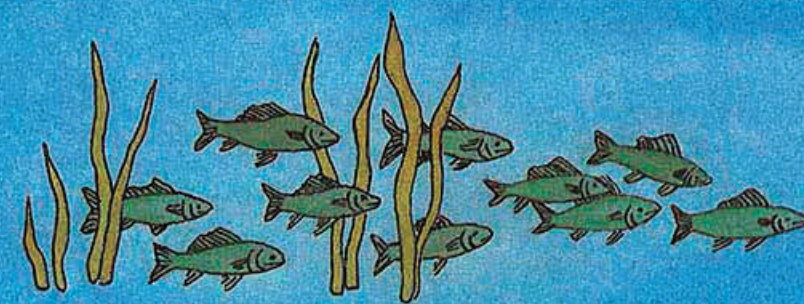
Black Telescope Eye









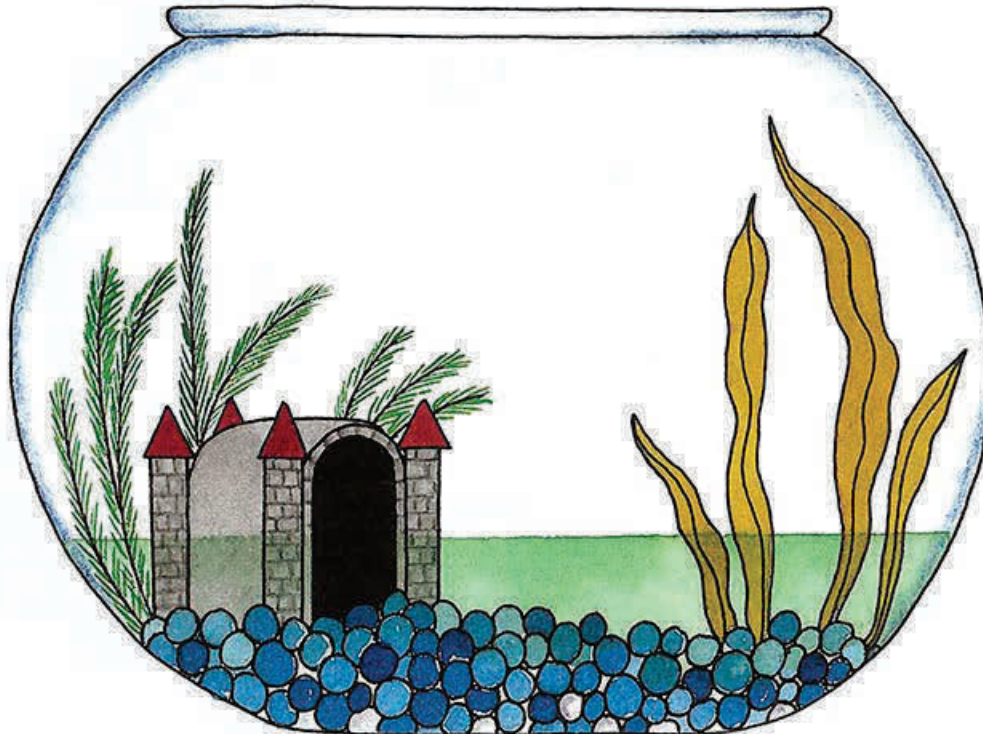
With a sleek body, fins, scales, slime, and gills, a fish lives as naturally underwater as you do on land.

Goldfish swim, breathe, eat, and rest in water. They slip over and under their castle, hide among water plants, and glide quietly around in their underwater world.

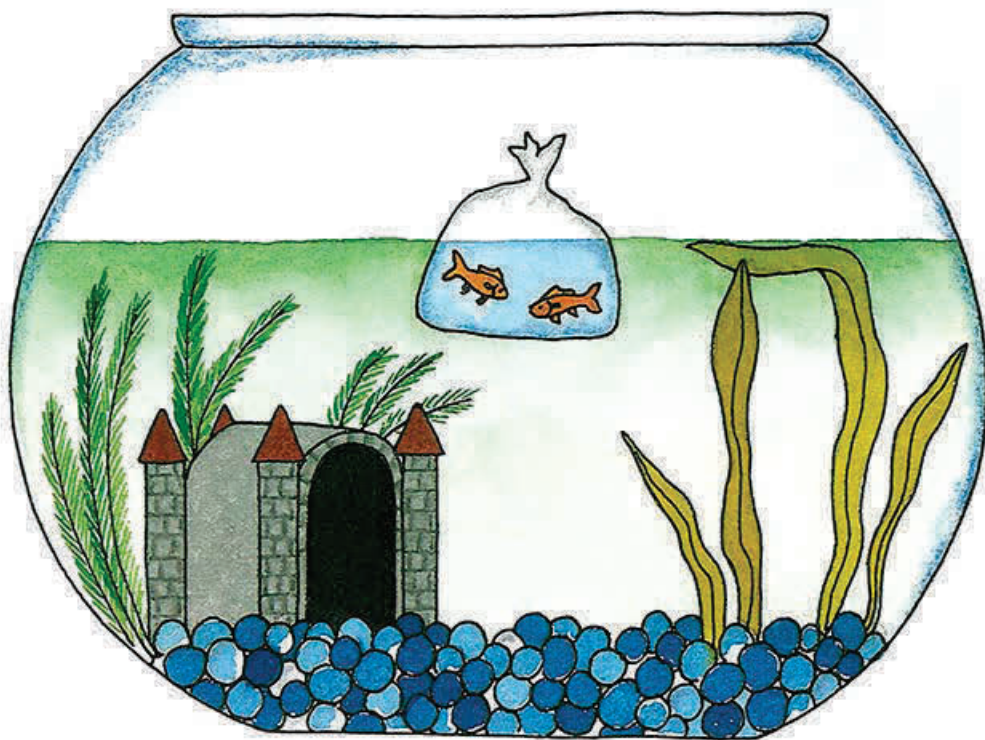


## Setting Up a Goldfish Bowl


-  Start with a clean two-gallon fishbowl.
-  Wash some gravel by running water over it, and spread it over the bottom of the bowl.
-  Pour a few inches of cold water into the bowl.
-  Place some water plants firmly in the gravel and add a castle or some other decoration.

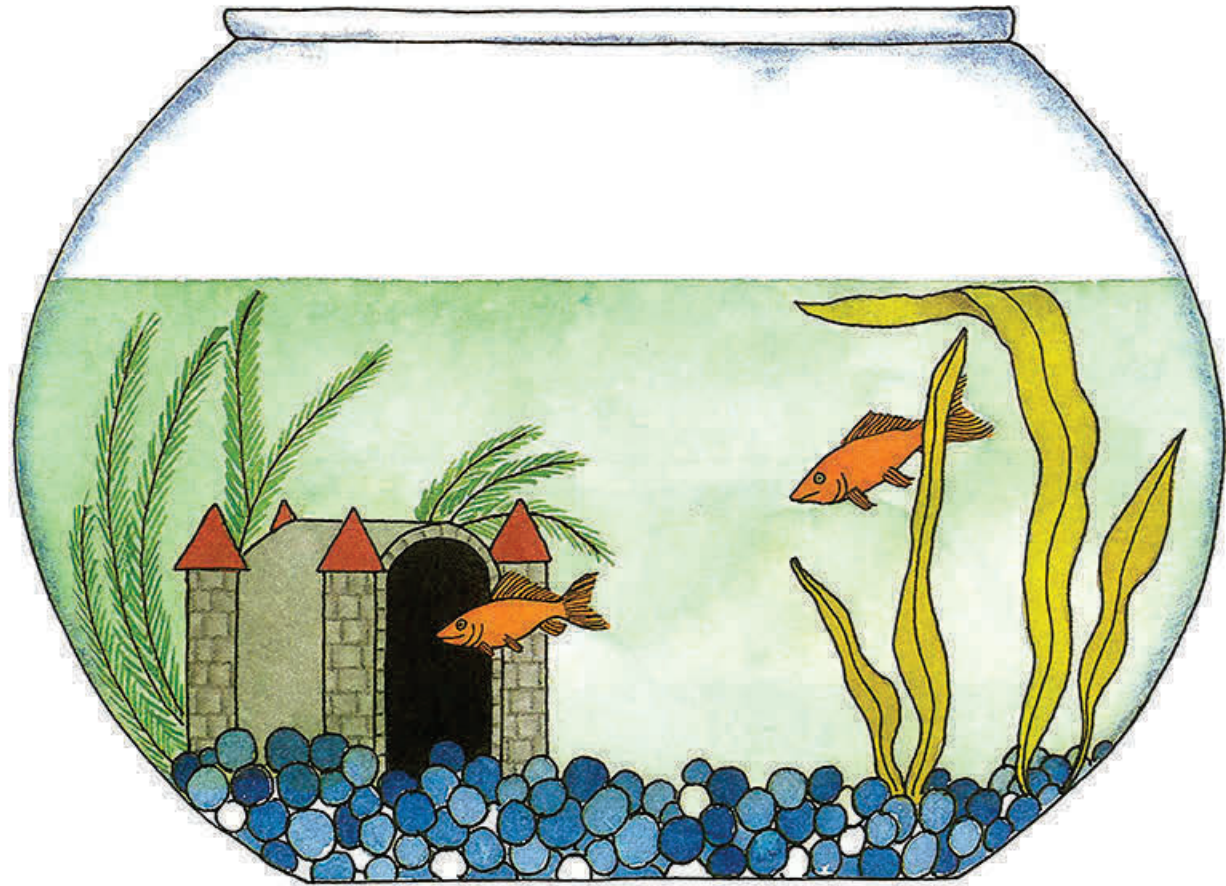


- Gently pour in more water up to the widest part of the bowl—the more air surface, the more oxygen will be available for the fish.
- Let the water sit for a day to become room temperature.
- Now you can go to the pet store and get your goldfish.
- When you get home, float the plastic bag containing the goldfish in the bowl to let the fish get used to the water temperature.
- Wait 15 minutes.





 Open the bag. Let your goldfish swim out.

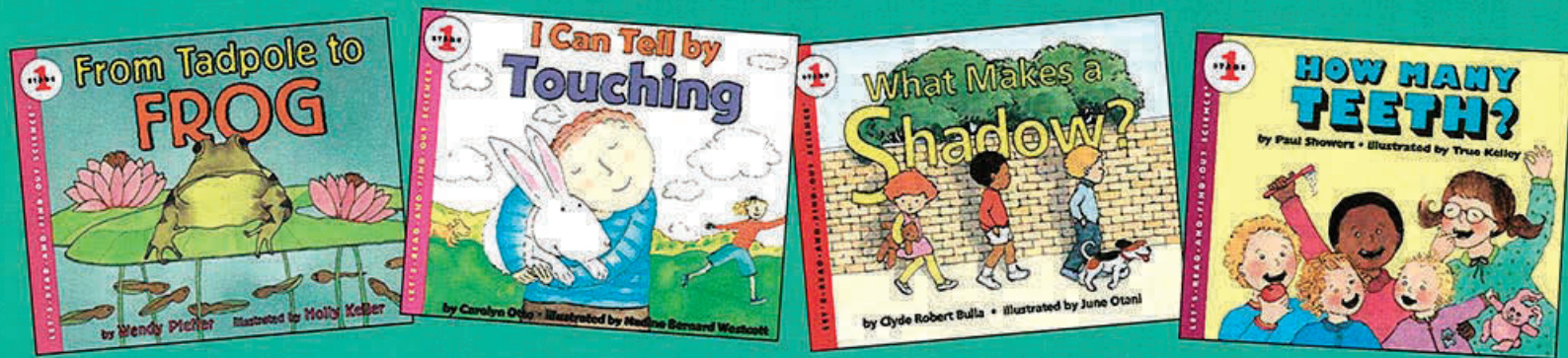


Your goldfish, like any pet, depends on you to take care of it. It's a good idea to study a fish care guide. That way you'll know just what to do to keep your goldfish healthy and happy.

# Could you live underwater?

You can't breathe underwater, but a fish can. You can't eat underwater, but a fish does it every day. A fish's body is perfectly designed for life in water, just as your body is perfect for living on land. Read and find out how a fish's sleek body, fins, scales, and gills keep him in the swim! Then read on to learn how to set up your own goldfish bowl.

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