

Fantastic Fish!

By Linda Butler



Fish is one of the five classes of vertebrates. The other classes are: amphibians, reptiles, birds, and mammals. There are about 28,000 species of fish, which is about as many species as the other four vertebrate categories combined! It's not surprising that there are so many fish species, because nearly $\frac{3}{4}$ of the earth's surface is covered with water, and most of that is ocean water.

All fish share two traits—they live in water and have a backbone. Most fish have streamlined bodies, scales, breathe with gills, swim by using fins and reproduce by laying eggs. Some fish, like sharks, have flexible cartilage rather than bones, and give birth to live young.

The largest group of fishes are the “bony” fishes, such as carp, salmon, clownfish, and trout. These fish all have scales, which are like a protective armor. They also help them move smoothly and quickly through the water. Fish are often slimy. The slime, or mucus, helps them move smoothly through the water and protects them from ultraviolet rays and from harmful bacteria.

Fish come in many shapes, colors, and sizes. The largest fish in the world is the Whale Shark, which grows to more than 50 feet long and may weigh over several tons. The smallest fish is the Goby, which lives in the Philippines. It grows to less than a half inch in length. There are many beautifully colored fish—the bright Yellow Tang; the black, white, and yellow striped Moorish Idol, the brilliant Arabian Angelfish, and the orange and white Clownfish. Many of these colorful species live in coral reefs.

Some fish have fascinating shapes. A Pufferfish can inflate to look like a spiny ball—and it's also one of the most poisonous fish in the ocean. The Seahorse isn't a horse, but it's a lovely shaped fish. Not only does it have a unique shape, it has a unique parenting style. The female Seahorse lays the eggs in a pouch near the male's belly; it is the male who carries and protects the eggs until they hatch. A Seahorse is a type of pipefish. Eels look more like a snake than a fish. The leafy Seadragon has leaf-shaped appendages that allows it to blend in with seaweed. The Sunfish has no tail and is shaped like a large bullet. Mudskippers have fins that look like legs and can use them to push themselves out of water. Mudskippers can also breathe air for brief periods when they are out of water.

Although all fish live in water, there are fish that live in oceans (saltwater) and freshwater fish that live in lakes, rivers, and streams. Freshwater fish have gills that diffuse the water they “breathe” by not allowing impurities inside and have well-developed kidneys that can filter large amounts of water. Freshwater fish maintain more salt in their bodies than the water that surrounds them. Freshwater fish produce large amounts of urine—so they pee a lot. Saltwater fish need to drink lots of salty water to maintain a proper balance of salt through their systems. The salt in the ocean's water draws water from a saltwater fish's body through its skin and gills. Saltwater fish drink a lot of water, but produce very little urine.

If you want to keep fish as pets, a freshwater aquarium is much easier to maintain than a saltwater aquarium. Most saltwater fish need very precise levels of salinity in the water, whereas freshwater fish can live in tap water after it has sat for 24 hours to allow chlorine to evaporate.

Some fish, such as Salmon, live in both types of water. They are born in freshwater, where they live and grow for a few months to a few years, before moving out to the ocean. As Salmon swim toward the ocean, their gills and kidneys change—they ingest more water and pee less, and are able survive in their new salty environment. When Salmon are ready to reproduce, or spawn, they leave the salty ocean and swim back up the rivers and streams to where they were born. These Salmon do not live long after spawning and become food for bears and raptors, and fertilizer for the land.

There is an American Indian legend that tells of how the Salmon came to the Squamish people, who are a First Nations tribe in the Vancouver, British Columbia area of Canada. Salmon is a mainstay of their diet. Five different types of Pacific Salmon generally spawn from late spring through autumn and are a vital source of food for people and many animals along the pacific coast from Oregon through Alaska.

Legend—How the Salmon came to the Squamish People

Retold from “First People of America and Canada—Turtle Island”

The Squamish people lived inland from the oceans and needed food. They asked four powerful brothers to help them find a way for salmon to come to their waters.

The four brothers and some of the Squamish people traveled west to the sea where they came to a village. At the village, the chief welcomed and fed the travelers. Each day he would send four youth into the ocean where they became salmon and swam upstream. Later other tribesmen would bring four salmon down from the stream to feed the people. “Eat all you wish,” said the chief, “but do not throw away any of the bones. Be sure to lay them aside carefully, do not destroy even a small one.”



When everyone finished eating, some of the young men of the village carefully picked up all the piles of bones and threw them into the sea. A few minutes later, the four young people who had gone into the sea returned from the water to the shore.

One evening a Squamish youth kept aside several bones. After the bones were collected and tossed into the sea, the four youth appeared again, but one was covering his face. “Not all the bones were collected,” he said. “I do not have any for my cheeks and nose.”

The chief asked his Squamish guests, “Did any of you mislay any of your salmon bones? Some are missing.”

Alarmed by his act, the Squamish youth who had hidden the bones pretended he had just found them on the ground and brought them out and returned them to the chief. Now the Squamish were sure that these were the Salmon People.

The oldest of the four brothers spoke to the Salmon Chief, “We have come to ask you to let some of your Salmon People come up the streams to the Squamish people. My friends often go hungry. We shall be very grateful if your people will sometimes visit them.”

“I will do as you request,” replied the Salmon Chief, “on one condition—they must always throw all the bones back into the water as you have seen us do. If they will be careful with the bones, my people can return to us again after they visit you.”

“We promise” said the four brothers and all the Squamish people. Then they made preparations to return to their home of the rising sun. As they were leaving, the Salmon Chief said, “I will send Spring Salmon to you first in the season. After them I will send Sockeye, then Coho, then Dog-Salmon, and last of all Humpback.”

Ever since that time, long ago, different kinds of salmon, in that order, have come to the Squamish waters, from the sea to the streams. Until the White People came, the Squamish People were always very careful to throw the bones of the salmon back into the water.

Make a Floating Stuffed-paper Fish



Fish float in water, so why not let them float in the air? These whimsical fish are made with paper, paint and staples.

First, look through some pictures of fish and talk about them. Talk about fish, their shapes, fins, scales. Each child will draw, then cut out two sides of the fish, then paint them. After they are dry, the sides will be stapled together and stuffed.

These fish can be made out of regular 8 ½ x 11” paper, but are more fun when made from larger paper, such as 11 x 17”. Have the child draw the outlines of the fish, including tail and fins. The fish need to be large enough to stuff with newspaper. Paper clip two sheets together so the child can cut out two identical fish.

Paint each fish, remembering that there needs to be a right side and a left side. It’s a good idea to paint it in two layers, first a general colorful wash, then the finer features such as eyes and scales. Some children may want to use a marker to make the features.

Once the fish sides are dry, staple them together, painted sides outward. Staple about 2/3 the way around the fish and gently stuff it with lightly wadded newspaper. Young children may need help with the stapling. Staples need to be quite close together. Stuff and staple until the fish is completely closed. If fins, lips, or tail are too small to stuff, just staple them. Don't pack the fish with too much or too tightly wadded stuffing. It should be lightweight.

Staple a lightweight string to the top of your fish and hang it for all to enjoy. Several fish can make a lovely "aquarium!"

Fish are able to float and sink thanks to an internal pouch called a swim bladder. It is kind of like a lung, that can fill with oxygen to allow it to come to the surface, or release oxygen to allow it to sink. The swim bladder allows the fish to remain at the same depth by not having to move its fins.

Fish books available from Pleasant Grove Library:

Nonfiction: "Classifying Fish" by Louise and Richard Spilsbury, "Fish Everywhere" by Britta Teckentrup

Learn about fish and math with "Fractions with Fish" by Maeve Sisk

Fiction: "Fish Girl" by David Wiesner and Donna Jo Napoli A fantasy story of a mermaid girl held captive in an aquarium. Beautiful illustrations in comic format. For older readers 10+