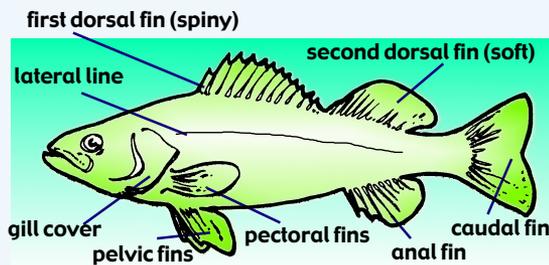


# Living in Water: Fish Anatomy

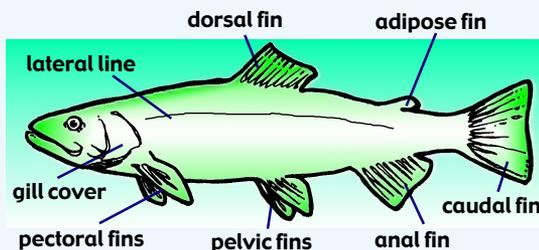
Fish are adapted for life in water. Even though there are many different shapes and sizes of fish, they have many characteristics in common.

Pennsylvania's fish can be grouped according to two different body types: Spiny-rayed and soft-rayed. Rays are found in fish fins. They support the fin. Muscles move the rays, which, in turn, move the fin.

**Spiny-rayed fish** have hard, and sometimes sharp, spines in one of the two dorsal fins. The other dorsal fin has soft rays. Yellow perch are spiny-rayed fish.



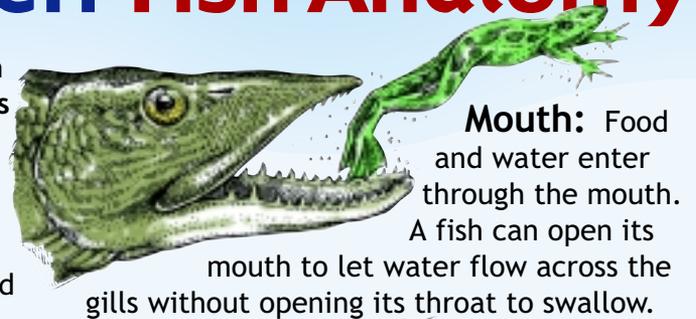
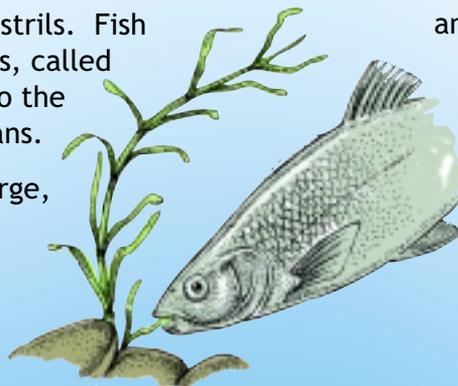
**Soft-rayed fish** don't have stiff, hard spines. They also have only one dorsal fin. Soft-rayed fish also have a small, fatty fin on the back, called an adipose fin. Trout are soft-rayed fish.



**Fins:** While their dorsal fins may be different, soft-rayed and spiny-rayed fish do have similarities in their other fins.

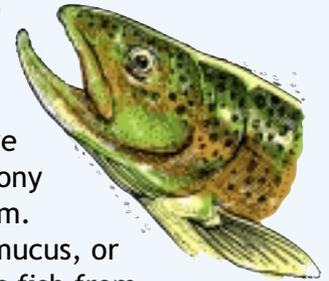
**Head:** A fish's head has a mouth and openings for eyes and nostrils. Fish have two pairs of nostrils, called nares. The nares lead to the olfactory, or smell, organs.

**Eyes:** All fish have large, round eyes. This gives them a wide field of vision.

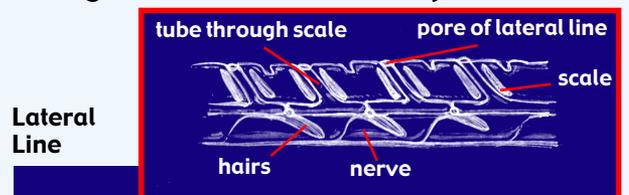


The mouth of a fish is adapted to what it eats and where that food is found.

**Scales:** Most fish have overlapping scales or bony plates that protect them. Scales are covered by mucus, or "slime," which protects fish from infection and helps them swim faster.



**Lateral line:** On both sides of nearly all fish is a line of pores called the lateral line. These pores are openings of tiny tubes that go through the scales into the body. At the ends



of each tube are tiny hairs connected to nerves. Sound waves (like those from your lure) enter the tubes and make the hairs dance.



This plate also protects the gills, in the same way that your ribs protect your lungs. Another name for this cover is the "operculum."