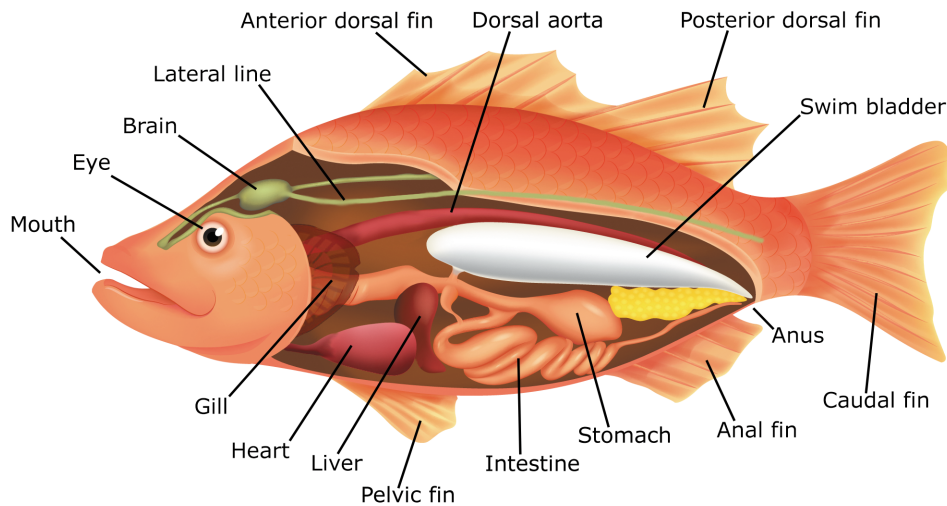


Figure 15.5.2**Fish Anatomy**

We are starting to see bigger brains and other head-based sensory organs as we move from sponges to worms to fish. Also notice the increasing number of internal organs.

**Figure 15.5.3****Dichotomous Key for the Fishes**

1b. Animals with vertebrae (a vertebral column)—vertebrates, go to 8.

8a. The animal is an aquatic vertebrate without hair—go to 9.

8b. The animal is a terrestrial vertebrate or aquatic vertebrate with hair—go to 10.

9a. The animal's skeleton is made of cartilage—Chordata, Class Chondrichthyes (sharks, rays and skates).

9b. The animal's skeleton is made of bone—Chordata, Class Osteichthyes ("fish").

15.6 CLASS AMPHIBIA—AMPHIBIANS

There are more than three thousand classified species of amphibians. Typical types of amphibians are frogs, toads, and salamanders. Although they live on land, they need to be close to water for two main reasons: gas exchange and reproduction. Most amphibians perform some or all gas exchange through their skin, which must be moist for gas exchange to occur. Some amphibians have lungs but still do some gas exchange across the skin.

The reason amphibians need water for reproduction is that their eggs do not have a protective covering, like reptile and bird eggs do. Although frogs and toads have external fertilization, and salamanders have internal fertilization, all their eggs are fragile after they are laid. It is easy for amphibian eggs to dry out, which kills the embryo. For this reason, amphibians must lay their eggs in or near water to keep them moist.

**Figure 15.6.1****Amphibians**

Frogs (left), toads (middle), and salamanders (right) are amphibians. They have smooth skin (as opposed to the scales of fish and reptiles) that is specialized to perform gas exchange.