

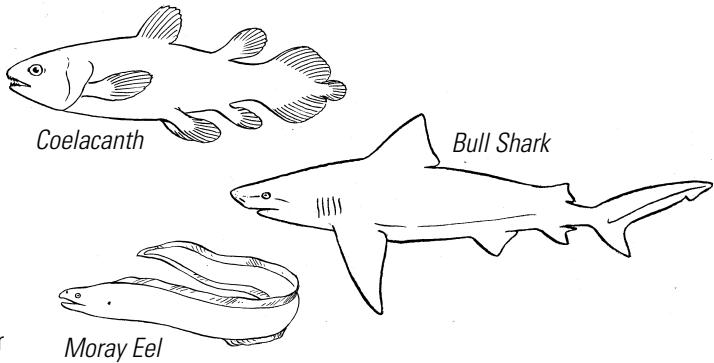
Fish Anatomy

NOVA Activity **Ancient Creature of the Deep**

Coelacanths are difficult to classify. They have many characteristics in common with sharks, and yet in certain characteristics they more closely resemble other types of fish. In this activity, you will decide which type of fish—moray eels or bull sharks—is more closely related to coelacanths.

Procedure

- ① Begin by reading about fish anatomy in your *Basic Fish Facts* information below.
- ② Use the Internet and print resources to learn more about these three types of fish. Compare:
 - their skeletal types
 - their body coverings
 - whether they bear live young
 - their buoyancy systems
 - whether they have gill slits or flaps
 - any other characteristics you learn about
- ③ On a separate sheet of paper, draw a coelacanth, bull shark, and moray eel and label the body parts of each.

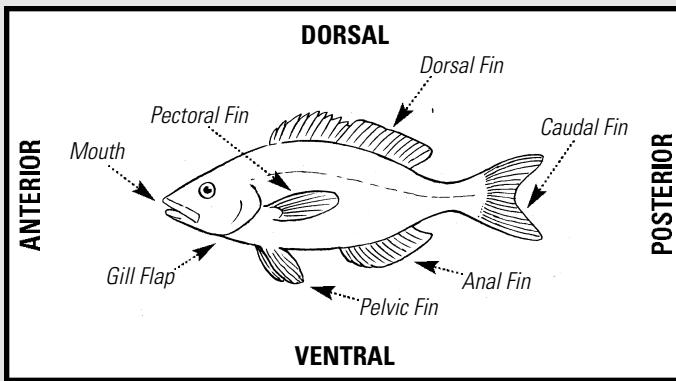


Questions

Write your answers on a separate sheet of paper.

- ① What characteristics do all fishes have in common?
- ② What characteristics of a coelacanth cause it to be classified as a fish?
- ③ What features do the coelacanth and the bull shark have in common?
- ④ Which features of a coelacanth are similar to those of a moray eel?
- ⑤ Do you think a coelacanth is more closely related to a bull shark or a moray eel? Explain your reasoning.

Basic Fish Facts



Gills: Allow a fish to breathe. Some fishes have gills covered by flaps. When a fish opens its mouth, the flap closes, drawing water into the mouth. As the fish closes its mouth, the flap opens. Oxygen is extracted from the water as it passes over the gills. Other fishes have gill slits.

Tails: Fish tails also take many shapes. A crescent-shaped tail, like that of the swordfish, allows the fish to swim rapidly through the water. A forked tail, like that of the trout, can also allow fast swimming. A rounded tail, like that of the angelfish, enables quick bursts of speed to escape predators.

Fins: Help a fish move. The top fins are called dorsal fins. If there are two dorsal fins, the one nearest the head is called the first dorsal fin and the one behind it is the second dorsal fin. The belly or lower part of the fish is the ventral region. Within this section is the pectoral fin, which is located near the gills, and the pelvic fin, which may have a more specific name depending on its position in the ventral region. The bottom fin at the back of the fish is called the anal fin. The tail fin is called the caudal fin. Pectoral and pelvic fins come in pairs. Dorsal, anal, and caudal fins are single.

Mouths: Enable a fish to eat. Some mouths extend directly from the head of the fish; in others the lower jaw extends beyond the upper jaw. Some mouths are on the underside of a fish's head, while others are more snout-like and suck in food.

Bodies: The shape of a fish's body depends on the fish's habits. For example, the body may be streamlined for faster swimming, as in the barracuda. They may be flattened from side to side, as in the angelfish, allowing them to maneuver in narrow spaces. Fishes that are flattened from top to bottom, such as the stingray, live on the seafloor. Other fishes are snake-like, such as the eel, enabling them to move easily between rocks. Other fishes have their own unique shapes.