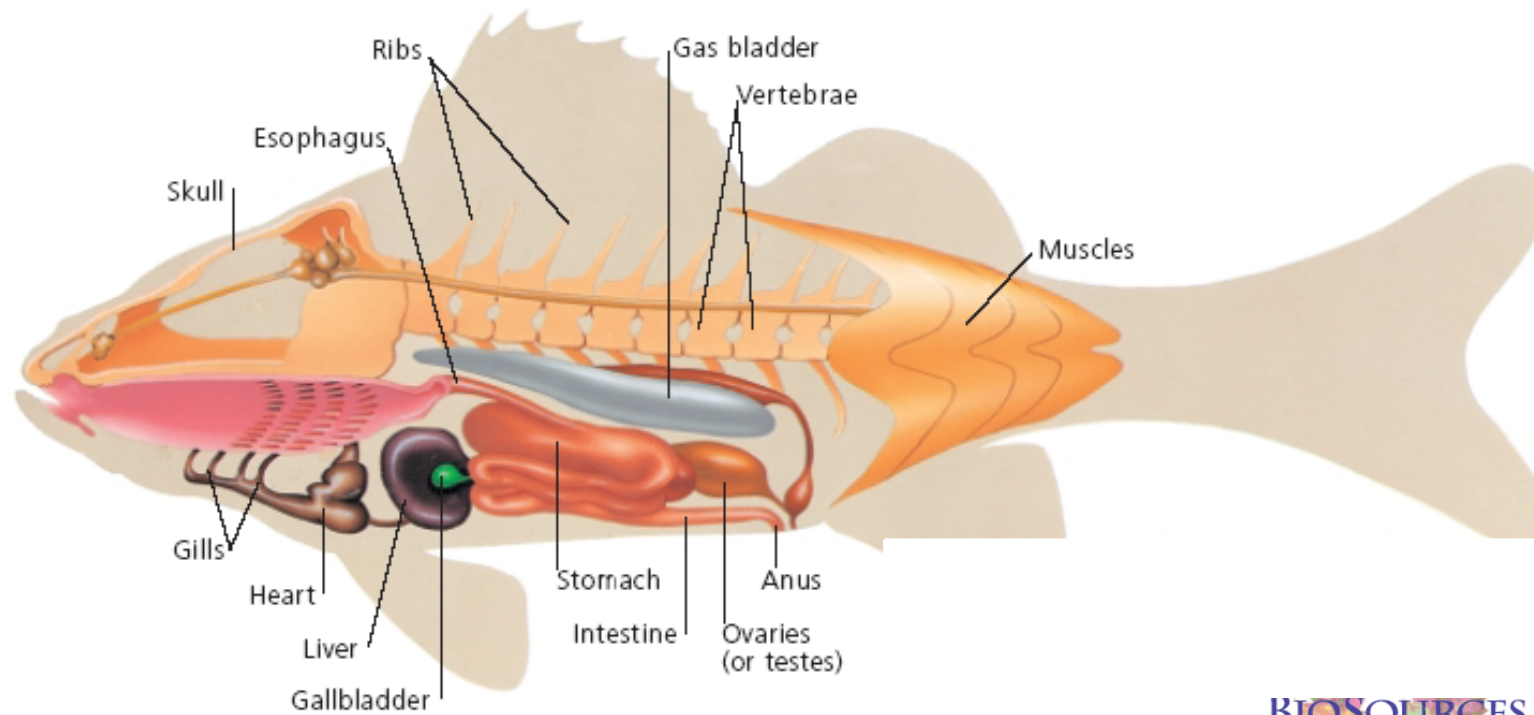


What characteristics make a fish recognizable?



“Fish” refers to anything in the three categories

Agnatha (_____ fishes)

Chondrichthyes (cartilaginous fishes)

Osteichthyes (_____ fishes)

Major Groups of Fishes

Class	Number of modern species	Description	Examples
Agnatha	81	No jaws; no paired appendages	Lampreys, hagfishes 
Acanthodii	Extinct	Jaws; spiny, paired fins	Acanthodians 
Placodermi	Extinct	Jaws; paired fins; bony armor	Placoderms 
Chondrichthyes	850	Jaws; paired fins; skeleton of cartilage; no swim bladder; spiracle; internal fertilization	Sharks, skates, rays 
Osteichthyes	21,000	Jaws; paired fins supported by bony rays; bony skeleton; most have swim bladder	Ray-finned fishes 
	7	Jaws; paired lobed fins; bony skeleton; extinct forms are ancestors of amphibians	Lobe-finned fishes 

Key Characteristics

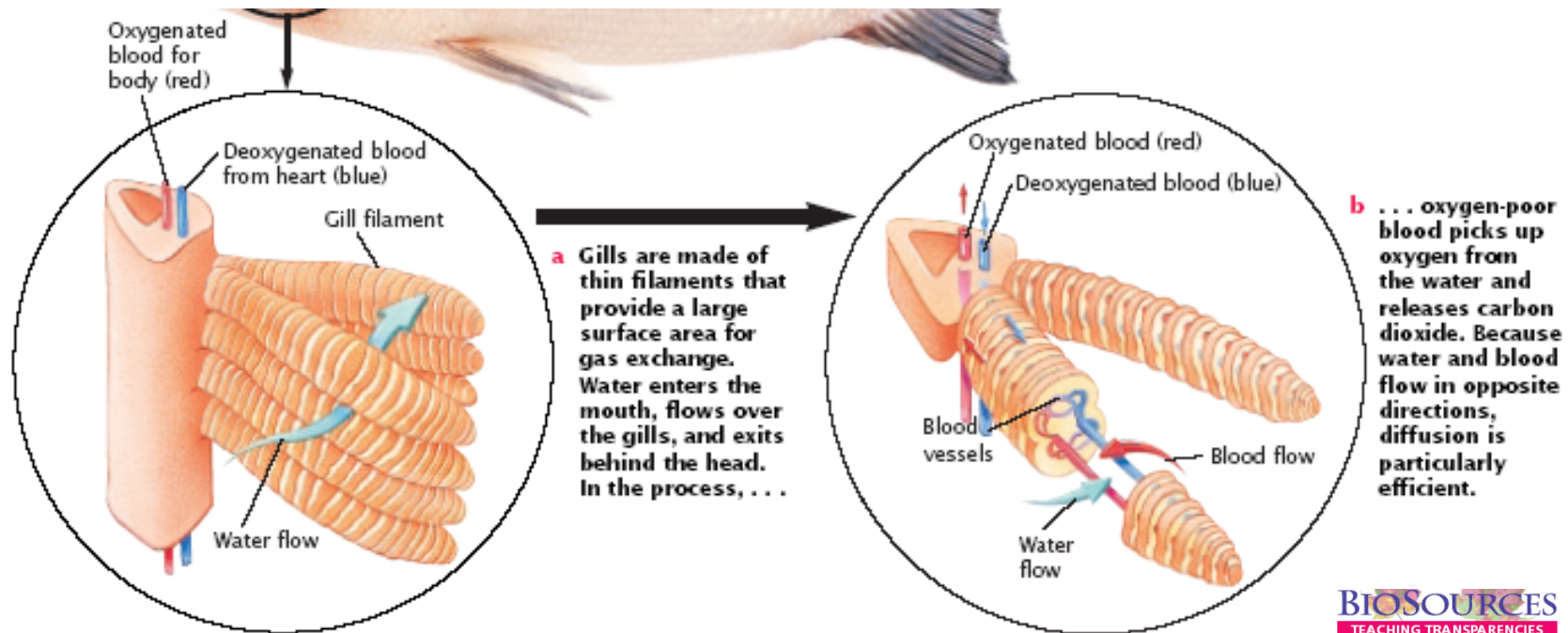
Gills

Single-loop _____ circulation

Vertebral Column

Gills are made up of gill filaments (finger-like projections by which _____ enters and leaves the _____)

Gill slits are where the _____ exits the



Fish Heart

1. Sinus Venosus- the collection
_____ that acts to reduce the
_____ of blood flow into the heart

2. Atrium- Chamber is large and has
thin, _____ walls

3. Ventricle- thick walled _____
with enough muscle to contract
strongly

4. Conus arteriosus- a _____ pump
that smoothes the pulsation and adds
more _____

The concentration of salt in the sea water is _____ times that of the tissues of the fish

The fish always then _____ water through _____

They need to constantly _____ water

Freshwater fish tend to take in water by _____ and this dilutes the ions so they need to take them from their _____

Kidneys are made of thousands of _____ (tubelike units that regulate the body's _____ and water)

Spawning- male and female gametes are released _____ one another in the _____.